

**U.S. Nuclear Regulatory Commission**  
**Site-Specific SRO Written Examination****Applicant Information**Name: **E. I. HATCH 2013-301 SRO NRC EXAM MASTER EXAM**Date: September 19<sup>th</sup>, 2013

Facility/Unit: Plant E. I. Hatch

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 80.00 percent overall, with 70.00 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 80.00 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 Scores \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Points

Applicant's Grade \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Percent

## ILT-08 SRO NRC EXAM

1. 201003A2.09 001

**UNIT 1** Reactor Startup is in progress with control rod 22-43 at position 12.

- o Reactor Pressure is 780 psig

A malfunction in the CRD system results in the following:

- o Charging Water Pressure is 890 psig
- o CRD ACCUMULATOR PRESS LOW OR LEVEL HIGH, (603-148)
- o HCU 22-43 local Accumulator pressure is 910 psig
- o Highest CRDM temperature is 240°F

IAW 34AB-C11-001, Loss of CRD System, the next REQUIRED action, and the BASES for the action, is to \_\_\_\_\_.

- A✓ immediately scram the reactor IAW 34AB-C71-001-1, Scram Procedure, because withdrawn control rods may fail to completely scram at lower reactor pressures
- B. immediately scram the reactor IAW 34AB-C71-001-1, Scram Procedure, because withdrawn control rods may experience slower scram times due to over heating
- C. restore charging water header pressure to  $\geq 940$  psig within 20 minutes because withdrawn control rods may fail to completely scram at lower reactor pressures
- D. restore charging water header pressure to  $\geq 940$  psig within 20 minutes because withdrawn control rods may experience slower scram times due to over heating

2. 203000K6.02 001

**UNIT 2** is operating at RTP.

At 12:55 125V DC CABINET 2D, 2R25-S004 is deenergized and the following annunciators are actuated:

- o LOSS OF OFF SITE POWER, (652-102)
- o 4160V BUS 2E OR 600V BUS 2C DC OFF, (652-115)
- o BATTERY VOLTS LOW OR FUSE TROUBLE, (652-119)
- o BATTERY CHARGER MALFUNCTION, (652-120)

At 13:00 a LOCA on **UNIT 2** occurs.

At 13:02 ONLY the \_\_\_\_\_ RHR pumps will have automatically started and be available for LPCI injection.

- A. A and B
- B. A and D
- ☒ C. B and C
- D. C and D

3. 204000K1.15 001

**UNIT 2** is at RTP with 2G31-C001A, "A" RWCU Pump in service.

At 12:00 the following annunciator illuminates:

o RWCU SYS LEAK, (602-421)

The above annunciator actuates when RWCU System differential flow exceeds the setpoint of \_\_\_\_\_ gpm.

At 12:01, the "A" RWCU Pump will \_\_\_\_\_ .

A✓ 56;

have tripped

B. 56;

continue operating

C. 60;

have tripped

D. 60;

continue operating

4. 205000K5.02 001

**Unit 2** is shutdown with the "A" loop of RHR in Shutdown Cooling (SDC).

RWCU is in service controlling reactor water level.

The following occurs:

| <u>Time</u> | <u>Event</u>  |
|-------------|---|
| 10:00       | 2G31-F033, RWCU Dump valve, fails open and cannot be closed |
| 10:35       | RWL is two (2) inches AND 2G31-F033 is isolated             |
| 10:40       | An operator restores RWL to normal                          |

At 10:40, with NO additional operator action, 2E11-F008, RHR SDC Suction valve, will \_\_\_\_\_ and the RHR pump will \_\_\_\_\_ .

A✓ have traveled close;  
have tripped

B. have traveled close;  
still be operating

C. remain open;  
have tripped

D. remain open;  
still be operating

5. 205000K5.03 001

**Unit 1** is in Mode 4 with Shutdown Cooling in service.

The following conditions exist:

- o Recirculation Pumps.....Secured
- o RHR B Pump flow.....5500 gpm
- o All other RHR Pumps.....Standby

IAW 34SO-E11-010-1, "Residual Heat Removal System", which ONE of the following identifies the **MINIMUM** corrected reactor water level that must be maintained by the OATC?

- A. +32"
- B. +34"
- C. +42"
- D. ☒ +54"

6. 206000A1.08 001

**Unit 2** is shutdown with HPCI operating in Pressure Control mode.

An event occurs causing CST level to start decreasing.

The leak is isolated with current CST level stable at 20 inches.

Five (5) minutes after CST level stabilizes at 20 inches, 2E41-F004, CST Suction valve, will \_\_\_\_\_ and HPCI will be operating \_\_\_\_\_ .

- A. have traveled closed;  
in Pressure Control mode
- B✓ have traveled closed;  
on Minimum Flow
- C. still be open;  
in Pressure Control mode
- D. still be open;  
on Minimum Flow

7. 209001K3.01 001

Following a Loss of Coolant Accident (LOCA) on **Unit 1** AND a loss of all RHR pumps.

Both Core Spray pumps and RHR Service Water (RHRSW) pump "1D" are operating to maintain reactor water level. The following plant conditions currently exist:

- o RPV level -65 inches and steady
- o Core Spray pump 1A flow 2100 gpm
- o Core Spray pump 1B flow 4200 gpm
- o RHRSW pump 1D flow 4000 gpm

Subsequently, "1E" 4160 VAC bus de-energizes.

Which ONE of the choices below completes the following statement?

After "1E" 4160 VAC bus de-energizes, RPV water level will start decreasing at a rate equivalent to a loss of approximately \_\_\_\_\_ gpm of injection flow.

- A✓ 2100
- B. 4200
- C. 6100
- D. 8200



8. 209001K3.03 001

**Unit 2** was operating at 100% RTP when the following alarms are received:

- o 601-107, Core Spray Sys II Logic Power Failure, alarm, ILLUMINATED
- o 601-310, Core Spray Sys I Logic Power Failure, alarm, ILLUMINATED

Subsequently, a break inside the Drywell results in the following:

- o Drywell pressure                      1.9 psig slowly rising
- o RWL                                      -108 inches and steady
- o RHR pumps                              Running on minimum flow

Which ONE of the choices below completes the following statements?

The Emergency Diesel Generators \_\_\_\_\_ automatically start.

The Core Spray pumps \_\_\_\_\_ be manually started.

- A. will NOT;  
can NOT
- B✓ will NOT;  
can
- C. will;  
can NOT
- D. will;  
can

9. 211000K2.02 001

**Unit 2** is at 100% power when a loss of a 600 VAC Motor Control Center (MCC) occurs.

The following equipment indications exist:

- o 2E11-F009, "RHR SDC Suction Vlv" ..... Indication is available
- o 2E11-F015B, "RHR Inboard Injection Vlv" ..... Indication is available
- o 2E21-F015B, "Core Spray Test Vlv" ..... Indication is NOT available
- o RPS Alternate Power Available Light ..... Indication is NOT available

With these indications,

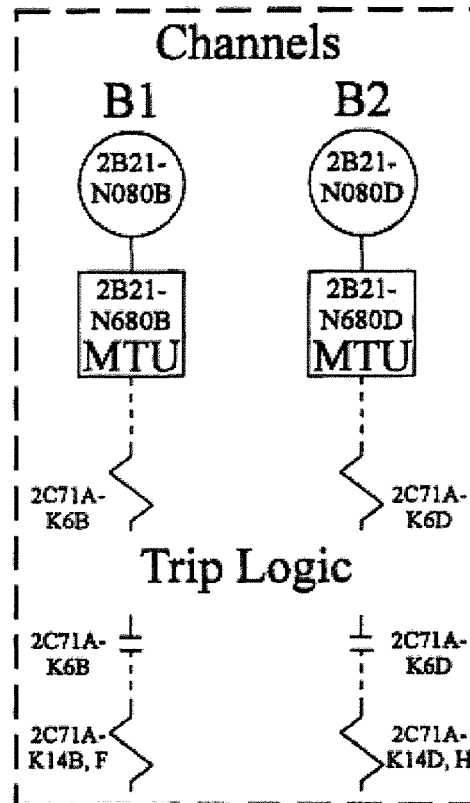
If SBLC injection is required, \_\_\_\_\_ SLC pump will START and \_\_\_\_\_ SBLC squib valve(s) will fire.

- A✓ ONLY the "2A";  
ONLY ONE
- B. ONLY the "2A";  
BOTH
- C. ONLY the "2B";  
ONLY ONE
- D. ONLY the "2B"  
BOTH

10. 212000A3.02 001

Given the following plant conditions on **Unit 2**:

- o Reactor Water Level Narrow Range, 2B21-N080B, has failed downscale.



Which ONE of the following describes the Reactor Protection System (RPS) Response?

The 2C71A-K14B relay will be \_\_\_\_\_ .

The solenoids for the Backup Scram Valves will be \_\_\_\_\_ .

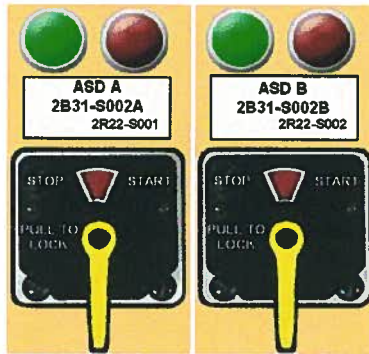
- A. Deenergized;  
Energized
- B✓ Deenergized;  
Deenergized
- C. Energized;  
Energized
- D. Energized;  
Deenergized

11. 212000A4.15 001

**UNIT 2** is operating at 90% RTP when a transient occurs resulting in the following conditions:

- o Reactor Pressure is currently 930 psig (highest reached 1100 psig)
- o RWL is currently +37 inches (lowest reached -65 inches)

The following indications exist on 2H11-P602 panel:



**NOTE:** All green lights above are ILLUMINATED  
All red lights above are EXTINGUISHED

With the above conditions,

The ASD A and B Input Breakers \_\_\_\_\_ .

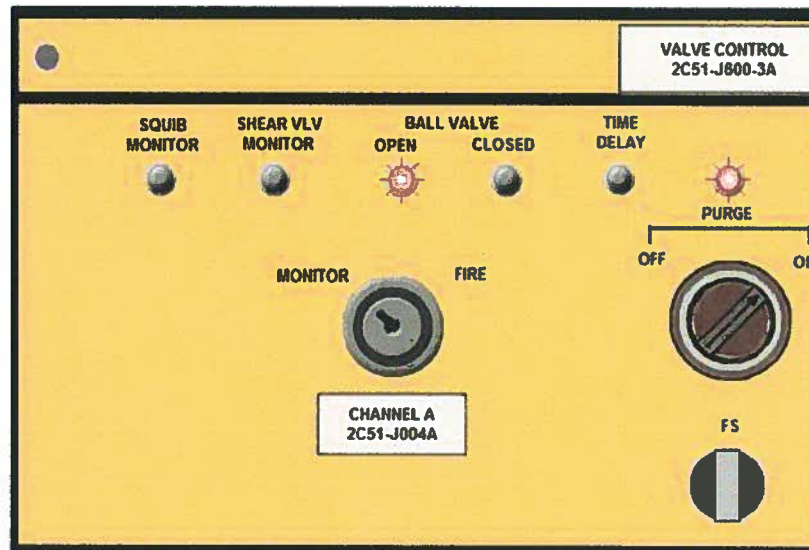
The risk of thermal stratification will be REDUCED by \_\_\_\_\_ .

- A✓ responded as designed;  
resetting the reactor scram
- B. responded as designed;  
maximizing CRD flow
- C. did NOT respond as designed;  
resetting the reactor scram
- D. did NOT respond as designed;  
maximizing CRD flow

12. 215001A4.03 001

**Unit 2** is operating at 100% RTP with the "A" Channel Transversing In-Core Probe (TIP) inserted in the core.

- o Steam is being discharged into Unit 2 Reactor Building
- o The steam is confirmed to be coming from the TIP room
- o A manual scram is inserted
- o RWL lowers to -20" before being restored to +9 inches
- o Five (5) minutes after a manual withdrawal command was initiated, the status of the "A" Channel TIP is indicated below:



Five (5) minutes after the manual withdrawal command was initiated, the EXPECTED location of the "A" TIP is in the \_\_\_\_\_ position, and

Based on the above conditions, the "A" TIP Shear valve \_\_\_\_\_ to be fired IAW 34AB-C71-001-2, Scram Procedure.

- A. In Shield;  
is REQUIRED
- B. In Shield;  
is NOT REQUIRED
- C. Indexer (Parked);  
is REQUIRED
- D. Indexer (Parked);  
is NOT REQUIRED

13. 215002G2.4.4 001

**Unit 2** operating at 62% of RTP and performing a rod pattern adjustment.

The current step is to withdraw Control Rod (CR) 42-39 from position 28 to position 30.

After releasing the rod movement control switch the following indications exist:

- o 603-202, RBM UPSCALE OR INOPERATIVE
- o 603-238, ROD OUT BLOCK
- o Rod Withdraw Permissive light is EXTINGUISHED
- o CR 42-39 settles at position 34

With the above plant conditions, the operator is REQUIRED to enter \_\_\_\_\_.

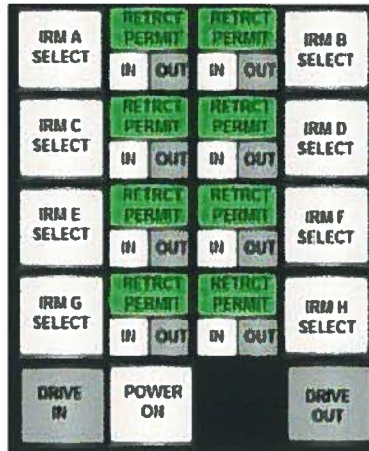
- A. 34AB-C71-001-2, Scram Procedure, and scram the reactor
- B. 34AB-C11-005-2, Control Rod Insertion Methods, and drive in CR 42-39 to position 02
- C. 34GO-OPS-065-0, Control Rod Movement, and immediately return CR 42-39 to its correct position
- D✓ 34AB-C11-004-2, Mispositioned Control Rods, and recover CR 42-39 per reactor engineering recommendations

14. 215003K4.05 001

**Unit 2** is starting up with the following indications observed at 2H11-P603:

The following lights are ILLUMINATED:

- IRM A thru H - IN
- IRM A thru H - RETRACT PERMIT
- IRM A thru H - SELECT
- POWER ON



- o All Source Range Monitors (SRM) and Intermediate Range Monitors (IRM) were selected and driven in following a scram 3 days ago.

The "Drive Out" button is depressed for 15 seconds and then released with NO change occurring in these indications.

Based on the above conditions the MINIMUM action(s) required to withdraw the IRMs is to \_\_\_\_\_.

- A. depress the "Drive Out" button an additional time
- B. ✓ depress the "Drive In" button, then depress the "Drive Out" button
- C. clear the "Retract Permit" light, then depress the "Drive Out" button
- D. depress the "Power On" button twice, then depress the "Drive Out" button

15. 215004K1.02 001

A **Unit 2** reactor startup is in progress with the following indications:

- o All IRMs are indicating between 20/125 - 60/125 on Range 6

HIGHEST indicating SRMs:

- o SRM A .....  $1.5 \times 10^5$  cps
- o SRM B .....  $8.0 \times 10^4$  cps



With the above indications, the Reactor Manual Control "ROD OUT" light will be \_\_\_\_\_ due to \_\_\_\_\_ .

- A. EXTINGUISHED;  
SRM A ONLY
- B. ☒ EXTINGUISHED;  
BOTH SRM A and SRM B
- C. ILLUMINATED;  
SRM A ONLY
- D. ILLUMINATED;  
BOTH SRM A and SRM B



16. 215005A4.06 001

Which one of the following completes the statement below regarding the Power Range Neutron Monitoring System Operability?

IAW 34SV-C51-003-1, LPRM Operational Status, each APRM must have a MINIMUM of \_\_\_\_\_ Operable LPRMs, with AT LEAST \_\_\_\_\_ Operable LPRMs per axial level to be considered operable.

A. 14;

1

B. 14;

3

C. 17;

1

☒ D. 17;

3

17. 217000K5.06 001

34SV-E51-002-2, RCIC Pump Operability Surveillance, is in progress on **Unit 2**.

The MINIMUM RCIC turbine speed required for prolonged operation which ensures adequate oil pressure for proper turbine governor operation is \_\_\_\_\_ rpm.

During RCIC pump operation, the Torus water temperature will increase at a rate of approximately \_\_\_\_\_ °F/hr.

- A. 3000;  
3
- B. 3000;  
30
- C✓ 2000;  
3
- D. 2000;  
30

18. 218000K3.01 001

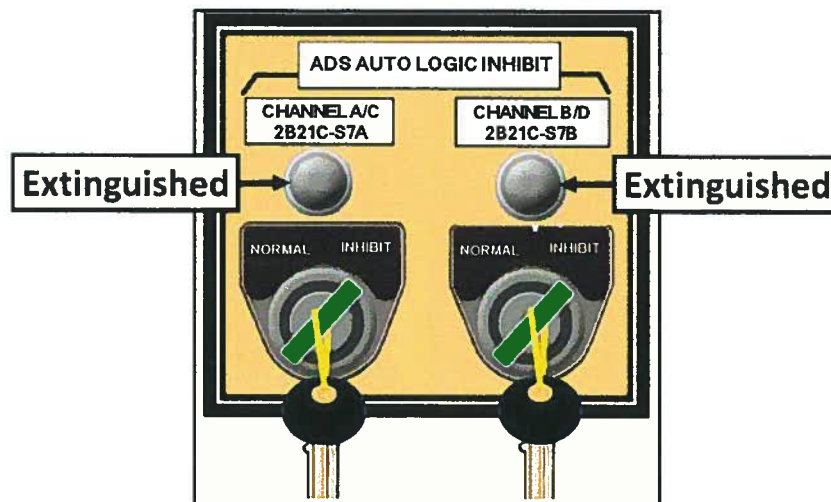
**Unit 2** was at 100% RTP when the following occurred concurrently:

- o Loss of Coolant Accident (LOCA)
- o A complete Loss of Off Site Power (LOSP)

At 0800, the following conditions exist:

- o Reactor water level ..... -95", DECREASING 2" per minute
- o Reactor pressure ..... 900 psig, DECREASING 25 psig per minute
- o Drywell pressure ..... 4.0 psig, slowly INCREASING

The following ADS panel indications concurrently exist:



Based on the above conditions and with NO additional operator actions, which ONE of the choices below completes the following statement?

At 0820, ONLY \_\_\_\_\_ will be injecting into the RPV.

- A. HPCI
- B✓ Core Spray and RHR
- C. HPCI and the Cond. Booster Pumps
- D. Core Spray, RHR and the Cond. Booster Pumps

19. 223001A3.05 001

**Unit 2** experiences a transient from 100% RTP with SPDS out of service.

The following conditions occur:

- o HPCI Equipment Room Temp High is . . . . . 155°F
- o RWL is . . . . . +37 inches (lowest RWL reached +9 inches)
- o Drywell Pressure is . . . . . 1.9 psig

Based on the above conditions, the \_\_\_\_\_ valves will AUTOMATICALLY isolate, and the associated valves can be verified isolated by monitoring indications on \_\_\_\_\_ .

- A✓ PCIV Group II;  
2H11-P601 and P700 panels
- B. PCIV Group II;  
ONLY 2H11-P601 panel
- C. PCIV Group III;  
2H11-P601 and P700 panels
- D. PCIV Group III;  
ONLY 2H11-P601 panel

20. 223002A2.11 001

**Unit 2** Main Control Room has been evacuated.

Local SBLC injection is required due to an ATWS condition.

When initiating SBLC from outside the Control Room, \_\_\_\_\_ .

- A. 2G31-F001, RWCU Inboard Isolation, must be closed from the valve breaker on 2R24-S022, 250V D.C. MCC 2B-ESS DIV 1
- B. 2G31-F001, RWCU Inboard Isolation, will automatically close when a SBLC pump is started
- C✓ 2G31-F004, RWCU Outboard Isolation, must be closed from the valve breaker on 2R24-S022, 250V D.C. MCC 2B-ESS DIV 1
- D. 2G31-F004, RWCU Outboard Isolation, will automatically close when a SBLC pump is started

21. 226001K6.04 001

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

- o 601-333, JOCKEY PUMP SYS A DISCH PRESS LOW
- o Jockey Pump System A discharge pressure is 45 psig

Based on the above conditions, a Core Spray Jockey Pump \_\_\_\_\_ receive an automatic start signal.

If this condition is NOT corrected, the potential exist to drain \_\_\_\_\_ of RHR Drywell Spray piping.

- A. will;  
BOTH divisions
- B✓ will;  
ONLY one (1) division
- C. will NOT;  
BOTH divisions
- D. will NOT;  
ONLY one (1) division

22. 233000K4.06 001

**Unit 2** is in a refueling outage when a rupture of the Fuel Pool Cooling and Cleanup (FPCC) return line to the fuel pool occurs.

Which ONE of the following identifies the FPCC pump low suction pressure trip setpoint and a design feature which will minimize the inventory loss from the Fuel Pool?

- A. 8 psig;  
The Anti-Siphon check valves on the return lines re-position
- B. 8 psig;  
The Diffusers on the return lines become uncovered
- C. 18 psig;  
The Anti-Siphon check valves on the return lines re-position
- D. 18 psig;  
The Diffusers on the return lines become uncovered

23. 239001K5.05 001

**Unit 2** is at 5% RTP with the Reactor Mode switch in STARTUP when the following annunciator is received:

- o 603-214, MAIN STEAM LINE FLOW A HIGH

The MINIMUM listed value that will cause 603-214, MAIN STEAM LINE FLOW A HIGH, alarm to be received is \_\_\_\_\_ .

The Main Steam Line High Flow isolation signal \_\_\_\_\_ bypassed in STARTUP.

- A. 170 psid;  
is
- B✓ 170 psid;  
is NOT
- C. 137 psid;  
is
- D. 137 psid;  
is NOT



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24. 239002K2.01 001

Which ONE of the following combinations are the power supplies to the **Unit 2** SRV solenoids?

- A✓ 2R25-S001, 125V DC CABINET 2A and 2R25-S002, 125V DC CABINET 2B
- B. 2R25-S002, 125V DC CABINET 2B and 2R25-S003, 125V DC CABINET 2C
- C. 2R25-S003, 125V DC CABINET 2C and 2R25-S004, 125V DC CABINET 2D
- D. 2R25-S004, 125V DC CABINET 2D and 2R25-S005, 125V DC CABINET 2E

25. 241000K3.03 001

**Unit 2** is operating at 15% RTP with the Main Turbine in "Chest Warming".

Subsequently, throttle pressure transmitters malfunction causing all Main Turbine Bypass Valves to fully open.

When the Main Turbine Bypass Valves open, indicated Reactor Water Level will INITIALLY \_\_\_\_\_.

Selecting the "Close Valves" button on the Turbine HMI screen \_\_\_\_\_ CLOSE the Main Turbine Bypass valves.

- A. decrease;  
will NOT
- B. decrease;  
will
- ☒ C. increase;  
will NOT
- D. increase;  
will

26. 245000K4.10 001

Which ONE of the choices below completes the following statement?

During a main turbine trip, all extraction non-return (ENR) check valves supplying steam to the feedwater heaters will \_\_\_\_\_ and the 2N11-F004A&B, 2nd Stage MSR Reheat Steam Supply Valves, will \_\_\_\_\_ .

- A. remain open;  
remain open
- B. remain open;  
automatically close
- C✓ automatically close;  
remain open
- D. automatically close;  
automatically close

27. 259002A4.08 001

**Unit 2** is at 50% power, performing a Startup.

- o Reactor Feed Pump Turbine (RFPT) "2B" is in service in automatic control

Due to intermittent problems with the "2A" RFPT M/A station, 2C32-R601A, Maintenance has taken 2C32-R601A to the maintenance shop for repair.

The Shift Supervisor directs placing the "2A" RFPT in service IAW 34SO-N21-007-2, "Condensate and Feedwater System", section 7.3.7, "RFPT Alternate Startup."

The reason that the "2A" RFPT speed will initially be stopped at 1000 RPM is to \_\_\_\_\_.

In this mode of operation, the Speed Setter switch can raise the "2A" RFPT speed to a MAXIMUM value of \_\_\_\_\_.

- A✓ allow oil temperature to increase;  
5800 rpm
- B. allow oil temperature to increase;  
3500 rpm
- C. verify proper operation of the trip circuit;  
5800 rpm
- D. verify proper operation of the trip circuit;  
3500 rpm

28. 261000A2.07 001

An electrical fault on **Unit 2** results in 2R25-S036, ESSENTIAL CABINET 2A, de-energizing.

The effect the loss of this bus will have on the **Unit 2** SBT System is that 2T46- F001A, SBT Filter Inlet & 2T46-F002A, SBT Fan 2A Disch Dampers will fail \_\_\_\_\_ .

With regards to SBT system the crew will enter \_\_\_\_\_ .

- A✓ Open;  
34AB-R25-002-2, Loss Of Instrument Buses, and manually start 2B SBT fan
- B. Open;  
34AB-T22-003-2, Secondary Containment Control, and confirm automatic start of 2B SBT System
- C. Closed;  
34AB-R25-002-2, Loss Of Instrument Buses, and manually start 2B SBT fan
- D. Closed;  
34AB-T22-003-2, Secondary Containment Control, and confirm automatic start of 2B SBT System

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29. 261000K1.03 001

IAW 31EO-EOP-012-2, Primary Containment Control (PC Flow Chart), the MAXIMUM listed Suppression Pool Water Level that ALLOWS venting of the Suppression Chamber using the Standby Gas Treatment System is \_\_\_\_\_ .

- A. 190 inches
- B. 210 inches
- C✓ 290 inches
- D. 340 inches

30. 262001K6.03 001

**Unit 2** is operating at 100% RTP.

- o 4160 VAC 2E, 2R22-S005, is powered from Startup Auxilary Transformer (SAT) 2C

Subsequently, GENERATOR PROTECTION CIRCUIT ENERGIZED, (651-206), annunciator is received.

Generator amps **MUST** be below a **MAXIMUM** of \_\_\_\_\_ in 2 minutes, or a Main Generator trip will occur.

If the Main Generator trips and with **NO** operator actions, the **MAXIMUM** number of Station Service Buses that will be **ENERGIZED** is \_\_\_\_\_ .

- A. 6,466 amps;  
Four (4)
- B. 6,466 amps;  
Zero (0)
- C. 20,232 amps;  
Four (4)
- ☒ D. 20,232 amps;  
Zero (0)

31. 262002G2.4.4 001

**Unit 2** is operating at 90% RTP.

At 10:00, a loss of electrical power results in the following conditions: (this is a partial list)

- o Reactor power begins increasing at 0.2% per minute
- o Loss of rod position information system (RPIS)
- o Loss of RWL and RPV pressure recorders on 2H11-P603
- o Main Condenser vacuum is 27.5 in. Hg vac, lowering at 0.2 in. Hg vac per minute

At 10:02, maintenance is dispatched to investigate the electrical power loss.

At 10:04, with the above plant conditions, entry into \_\_\_\_\_, is REQUIRED.

- A. 34AB-R25-001-2, Loss of Vital AC, and 34AB-C71-001-2, SCRAM Procedure
- B. 34AB-R25-002-2, Loss of Instrument Buses, and 34AB-C71-001-2, SCRAM Procedure
- C✓ 34AB-R25-001-2, Loss of Vital AC, and 34AB-N21-001-2, Loss of Feedwater Heating
- D. 34AB-R25-002-2, Loss of Instrument Buses, and 34AB-N21-001-2, Loss of Feedwater Heating



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32. 263000A3.01 001

The **Unit 2** Station Service Battery Charger amps can be monitored on Panel \_\_\_\_\_ .

If 600 VAC 2C, 2R23-S003, deenergizes, the associated 600 VAC supply breakers to the 125/250 VDC Station Service Battery Chargers \_\_\_\_\_ AUTOMATICALLY open.

- A. 2H11-P651;  
will
- B. 2H11-P651;  
will NOT
- C✓ 2H11-P655;  
will
- D. 2H11-P655;  
will NOT

33. 264000G2.2.42 001

**Unit 2** is in MODE 2 with EDG 2A semi-annual surveillance in progress. The EDG 2A mode switch is in "TEST" and is paralleled to the bus.

The following conditions occur:

- o EDG 2A Lube Oil Temperature increases and peaks at 235°F
- o EDG 2A Jacket Coolant Temperature increases and peaks at 200°F
- o EDG 2A trips

EDG 2A received a trip signal from \_\_\_\_\_ .

IAW TS \_\_\_\_\_ REQUIRED to be operable for the current plant mode.

- A. Lube Oil Temperature;  
ONLY one Unit 2 EDG is
- B✓ Lube Oil Temperature;  
BOTH Unit 2 EDGs are
- C. Jacket Coolant Temperature;  
ONLY one Unit 2 EDG is
- D. Jacket Coolant Temperature;  
BOTH Unit 2 EDGs are

34. 268000A1.02 001

**Unit 2** Radwaste is performing a discharge to the canal.

The Radwaste discharge to the canal \_\_\_\_\_ if dilution flow drops to 9,500 gpm AND if a specific discharge is terminated, \_\_\_\_\_ permissible with the existing permit.

- A. will automatically terminate;  
NO restarts are
- B✓ will automatically terminate;  
ONLY one (1) restart is
- C. must be manually terminated;  
NO restarts are
- D. must be manually terminated;  
ONLY one (1) restart is

35. 286000K2.02 001

An earthquake occurs resulting in the following plant conditions:

- o Fire header piping ruptures - lowest header pressure reached was 87 psig
- o 1E 4160 VAC Bus DEENERGIZES (cannot be restored)
- o 2F 4160 VAC Bus DEENERGIZES (cannot be restored)

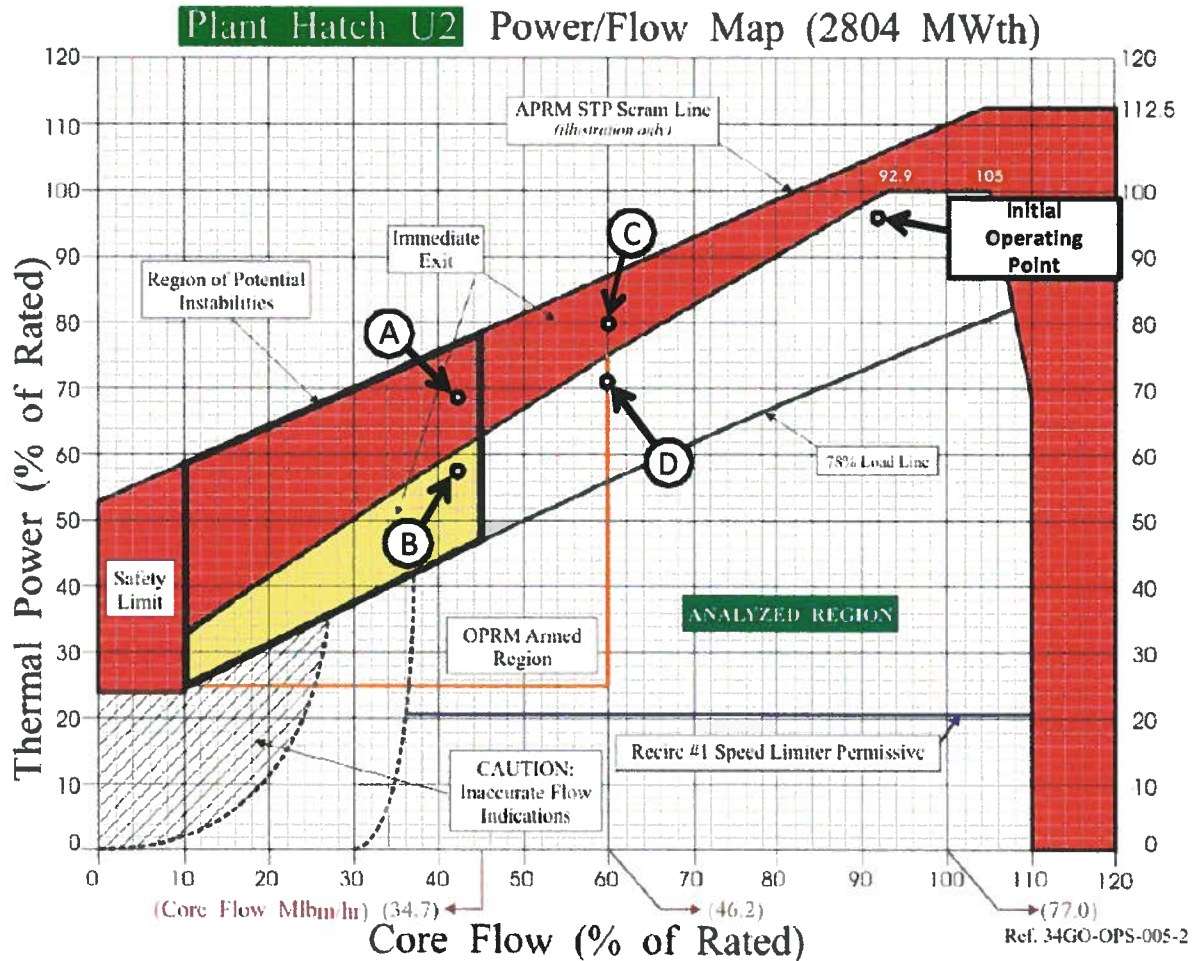
Assuming that this is the LOWEST pressure achieved, which ONE of the following predicts how the fire pumps respond?

- A. ONLY the electric fire pump starts
- B. ONLY the "A" and "B" diesel fire pumps start
- C. ONLY the electric fire pump and the "A" diesel fire pump starts
- D. BOTH the "A" and "B" diesel fire pumps and the electric fire pump starts

36. 295001AK2.06 001

**Unit 2** is operating at 96% RTP with 92% Core Flow when a malfunction occurs resulting in the following conditions:

- o The "2A" Condensate Booster pump (CBP) trips
- o The "2A" Reactor Feedwater pump trips
- o +24 inches is the lowest Reactor Water Level during the transient



After the plant stabilizes and with NO operator action, the plant will be operating at approximately \_\_\_\_\_ on the Power To Flow Map above.

- A✓ Point A
- B. Point B
- C. Point C
- D. Point D

37. 295003AK1.02 001

**Unit 2** RHR Loop "A" is in Suppression Pool Cooling mode.

At 12:00, A LOSS OF OFF SITE POWER occurs on Unit 2.

At 12:10, Plant conditions are:

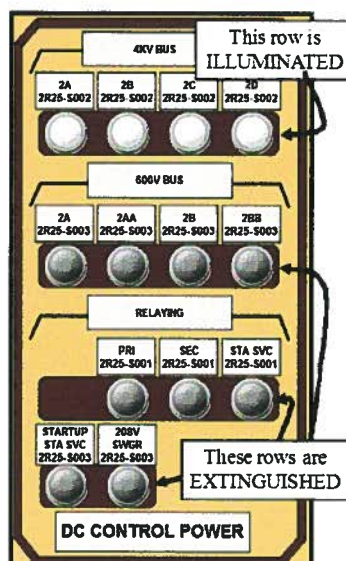
- o Emergency buses ENERGIZED
- o Reactor water level: -80 inches (stable)
- o RPV pressure: 980 PSIG
- o Drywell pressure: 1.9 PSIG (stable)

At 12:15, and with NO operator action, \_\_\_\_\_ .

- A. ALL RHR and RHRSW pumps will be off
- B✓ ALL RHR pumps will be running and ALL RHRSW pumps will be off
- C. ONLY the RHR and RHRSW pumps which were running prior to 12:00 will be running
- D. ONLY the RHR pumps which were running prior to 12:00 will be running and ALL RHRSW pumps will be off

38. 295004G2.1.7 001

**Unit 2** is operating at 100% RTP when the following panel indications occur:



Subsequently,

- o Unit 2 Reactor is manually scrambled
- o Main turbine is manually tripped
- o Main Generator output breakers are opened
- o 4160 VAC Station Service Buses 2A-2D DEENERGIZED when the Main Generator output breakers were opened

For the above conditions:

4160 VAC Station Service Buses, 2A-2D, \_\_\_\_\_ respond as expected.

If needed for RWL control, \_\_\_\_\_ can be used for injection.

- A. did;  
RCIC
- B. ☒ did;  
HPCI
- C. did NOT;  
RCIC
- D. did NOT;  
HPCI

39. 295005AK3.02 001

**Unit 2** is operating at the end of the current fuel cycle.

The function of the End Of Cycle Recirc Pump Trip (EOC-RPT) on a Main Turbine trip, is to provide additional margin to the \_\_\_\_\_ .

The \_\_\_\_\_ used for determining the thermal power at which the EOC-RPT function is activated.

- A. Average Planar Linear Heat Generation Rate (APLHGR) Thermal limit;  
APRMs are
- B. Average Planar Linear Heat Generation Rate (APLHGR) Thermal limit;  
Main Turbine First Stage Pressure is
- C. Minimum Critical Power Ratio (MCPR) Safety limit;  
APRMs are
- ☒ D. Minimum Critical Power Ratio (MCPR) Safety limit;  
Main Turbine First Stage Pressure is



40. 295006AA1.01 001

**Unit 1** is in a refueling outage.

- o Reactor Mode Switch position ..... REFUEL
- o SRM Shorting Links ..... INSTALLED

Subsequently, the following occurs:

- o 1C IRM fails upscale.

What is the expected status of the 1H11-P603 panel WHITE RPS Scram Group A and B lights?

RPS Scram Group A WHITE lights are expected to be \_\_\_\_\_ .

RPS Scram Group B WHITE lights are expected to be \_\_\_\_\_ .

- A. EXTINGUISHED;  
EXTINGUISHED
- B. ☒ EXTINGUISHED;  
ILLUMINATED
- C. ILLUMINATED;  
EXTINGUISHED
- D. ILLUMINATED;  
ILLUMINATED

41. 295009AK1.02 001

**Unit 1** is at 35% RTP with the 1A RFPT in service, when a malfunction results in a reduction in Feedwater flow and a lowering RWL.

Speed Limiter #1 will FIRST be activated when \_\_\_\_\_ for at least 15 seconds and is designed to maintain \_\_\_\_\_ .

- A. RWL reduces to +20 inches;  
NPSH for the Recirc Pumps
- B. RWL reduces to +20 inches;  
Plant availability ONLY
- C✓ Total feedwater flow reduces to less than 20%;  
NPSH for the Recirc Pumps
- D. Total feedwater flow reduces to less than 20%;  
Plant availability ONLY

42. 295010AA2.06 001

**Unit 2** was operating at 100% RTP when a leak occurred inside the drywell.

At 9:55, the reactor is shutdown.

At 10:00, the following conditions exist:

- o Bulk Average Drywell Temperature is 140°F, increasing at 5°F per minute
- o Drywell Pressure is 1.0 psig, increasing at 0.5 psig per minute

Given that the leak remains constant, the Primary Containment temperature and pressure rate of increase at 10:05, will be \_\_\_\_\_ the rate at 10:00.

At 10:05, IAW 34AB-T23-002-2, Small Pipe Break Inside Primary Containment, RPV water level corrections \_\_\_\_\_ REQUIRED to be performed.

- A. higher than;  
are NOT
- B. ☒ higher than;  
are
- C. the same as;  
are NOT
- D. the same as;  
are

43. 295012AK3.O1 001

**Unit 2** is at 100% RTP when Drywell (DW) Temperature starts slowly increasing.

The following DW cooling fans are in STANDBY (ALL other DW cooling fans are operating with their control switches in RUN):

- o 2T47-B008B
- o 2T47-B009B

With the current DW cooling fan alignment, 2T47-B008B \_\_\_\_\_ be MANUALLY started to provide additional DW cooling.

Exceeding the Primary Containment Design Temperature of \_\_\_\_\_ may result in the degradation of the Primary Containment structure under accident loads.

- A. CAN;  
281°F
- B. CAN;  
340°F
- C. CAN NOT;  
281°F
- D✓ CAN NOT;  
340°F

44. 295013G2.4.18 001

**Unit 1** is operating at 75% with the following conditions:

- o Safety Relief Valve (SRV) "G" is leaking
- o Torus temperature ..... 102°F, and increasing slowly

The **LOWEST** Torus temperature which **REQUIRES** placing the Rx Mode Switch in Shutdown occurs at a Torus temperature of \_\_\_\_\_ .

The EOP bases for placing the Rx Mode Switch in Shutdown at this Torus temperature is \_\_\_\_\_ .

- A. 111°F;  
to ensure the **MINIMUM** NPSH is maintained for RCIC and ECCS pumps taking a suction from the Torus
- B✓ 111°F;  
because this value **EXCEEDS** the **MAXIMUM** allowed by Unit 1 Technical Specifications
- C. 121°F;  
to ensure the **MINIMUM** NPSH is maintained for RCIC and ECCS pumps taking a suction from the Torus
- D. 121°F;  
because this value **EXCEEDS** the **MAXIMUM** allowed by Unit 1 Technical Specifications

45. 295016AA2.07 001

The **Unit 2** control room has been abandoned and 31RS-OPS-001-2, Shutdown From Outside Control Room, is being implemented.

Which ONE of the choices below completes the following statements?

Torus pressure can be determined using \_\_\_\_\_ .

IAW EOPs, if Unit 2 Torus pressure is determined to be 10.5 psig, \_\_\_\_\_ REQUIRED to be initiated from outside the Control Room.

- A. SPDS in the TSC;  
BOTH Torus and Drywell Sprays are
- B✓ SPDS in the TSC;  
ONLY Torus Spray is
- C. a permanently mounted gauge on the 87' level of the Reactor Building;  
BOTH Torus and Drywell Sprays are
- D. a permanently mounted gauge on the 87' level of the Reactor Building;  
ONLY Torus Spray is

46. 295017AA1.05 001

**Unit 2** is operating at 65% RTP, currently shutting down due to suspected fuel leakers.

Subsequently, a steam leak occurs in the Turbine Building resulting in the following:

- o 10:00 - A Valid Group 1 Isolation signal is generated  
NO Group 1 Isolation valves change position (Automatically nor Manually)
- o 10:12 - Offsite radioactivity release rate increases to 0.75 mR/hr

Which ONE of the choices below completes both statements?

At 10:12, the Offsite radioactivity release rate \_\_\_\_\_ above the entry condition of 31EO-EOP-014-2, RR - RADIOACTIVITY RELEASE CONTROL, EOP flowchart.

At 10:15, the PRIMARY Display on SPDS for the Group 1 Status Indicator box will have \_\_\_\_\_ BACKGROUND.

- A. is;  
a RED
- B. is;  
an ORANGE
- C. is NOT;  
a RED
- D. is NOT;  
an ORANGE

47. 295018AK3.06 001

**Unit 2** is operating at 5% power with PSW/RBCCW Hx dP adjusted to 12 psid.

Subsequently, two (2) RBCCW pumps fail and will NOT run.

**NOTE:** 2P41-F491, PSW Outlet Valve From RBCCW Hx

With the two (2) RBCCW pumps failed, annunciator, HX PSW/RBCCW DIFF PRESS LOW, (650-238), \_\_\_\_\_ be ILLUMINATED.

To RETURN the PSW/RBCCW Hx dP to 12 psid, the SO will throttle 2P41-F491 in the \_\_\_\_\_ direction.

- A. will;  
CLOSE
- B. will;  
OPEN
- C. will NOT;  
CLOSE
- D✓ will NOT;  
OPEN



48. 295019AA2.02 001

**Unit 1** is operating at 100% power.

- o ALL Nitrogen backup system valves to the Non-Interruptible Essential Air Header have been DANGER TAGGED in the closed position

Subsequently, the following occurs:

- o Unit 1 experiences a loss of all Unit 1 Station Service Air Compressors
- o The air cross-tie valve between Unit 1 and Unit 2 CANNOT be opened due to a bent stem.

Based on the current plant conditions, which ONE of the following identifies the FINAL MSIV position?

- A. The Inboard and Outboard MSIVs will remain OPEN.
- B. The Inboard and Outboard MSIVs will eventually drift CLOSED.
- C✓ The Inboard MSIVs will remain OPEN;  
The Outboard MSIVs will eventually drift CLOSED.
- D. The Inboard MSIVs will eventually drift CLOSED;  
The Outboard MSIVs will remain OPEN.

49. 295021G2.2.40 001

**Unit 2** is shutdown with the following conditons:

- o Rx pressure ..... 134 psig
- o 2A Rx Recirculation pump ..... Running
- o 2B Rx Recirculation pump ..... Off

Which ONE of the choices below completes BOTH the following statement?

IAW Tech Spec 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown" the MINMUM number of RHR Shutdown Cooling (SDC) subsystems REQUIRED to be operable, (without requiring entry into a Required Action Statement) (RAS), is \_\_\_\_\_ .

Also, IAW with Tech Spec 3.4.7 and with current plant conditions, \_\_\_\_\_ RHR SDC subsystem is required to be in operation.

- A. one;  
one
- B. one;  
neither
- C. two;  
one
- D✓ two;  
neither

50. 295023AA2.03 001

**Unit 2** is in a Forced Refueling outage due to several fuel leakers in the core.

The Refueling crew is removing a failed fuel bundle from the Unit 2 reactor to the Unit 1 Fuel Prep Machine (FPM).

The Bridge Operator is currently traveling in the Transfer Canal with one of the failed bundles in the normal Full Up position, when the Refueling Bridge becomes stuck in the Transfer Canal.

Maintenance is in the process of determining why the Refueling Bridge will NOT move.

Subsequently, the **Unit 2** Main Steam line plugs fail causing the Reactor Cavity and Fuel Pool water levels to decrease.

- o Releases from the exposed failed bundle results in increasing Radioactive Airborne contamination levels on the Refuel Floor.
- o Radiation levels on the Refuel Floor reach 1200 mr/hr

IAW 34AB-G41-002-2, Decreasing Rx Well/Fuel Pool Water Level, Health Physics is directed to establish a manned control point \_\_\_\_\_ of the Unit 2 Reactor Building.

When water level drops to the Main Steam lines, the fuel seated in the FUEL POOL RACKS will \_\_\_\_\_ .

- A. on the 203' elevation;  
still be covered
- B. on the 203' elevation;  
be uncovered
- C✓ outside;  
still be covered
- D. outside;  
be uncovered

51. 295024EA2.06 001

A steam line break inside the Drywell has occurred on **Unit 1**.

- o Drywell pressure is 15.5 psig and slowly increasing
- o Torus pressure is 14.1 psig and slowly increasing
- o Subsequently Drywell Sprays are placed in service at 4,300 gpm flow

The Torus water temperature will heat up \_\_\_\_\_ .

At this Drywell Spray flow rate, a uniform Drywell spray pattern \_\_\_\_\_ .

- A. uniformly throughout the Torus due to the design of the downcomers;  
will NOT be guaranteed
- B. uniformly throughout the Torus due to the design of the downcomers;  
will be guaranteed
- C. directly under the leak due to the energy being added directly to the Torus water in that area;  
will NOT be guaranteed
- D. directly under the leak due to the energy being added directly to the Torus water in that area;  
will be guaranteed

ILT-08 SRO NRC EXAM

52. 295025G2.1.27 001

Which ONE of the choices below completes the following statements?

IAW TS 3.4.3, Safety/Relief Valves (S/RVs), the SRV Safety function requires a MINIMUM of \_\_\_\_\_ SRVs to be operable.

If reactor pressure peaks at 1300 psig, the Reactor Coolant System Safety Limit pressure \_\_\_\_\_ have been exceeded.

- A. 10;  
will
- B✓ 10;  
will NOT
- C. 5;  
will
- D. 5;  
will NOT

53. 295026EK3.04 001

An ATWS is in progress on **Unit 2** with 31EO-EOP-011-2, RCA RPV Control (ATWS), flowchart in progress.

Which ONE of the choices below completes the following statements?

IAW EOP definitions the reason SBLC is injected before exceeding the BIIT Curve (Graph 5) is to ensure that Hot Shutdown Boron Weight is injected before exceeding the \_\_\_\_\_ .

At 8% RTP, the HIGHEST listed Torus temperature at which operation on the BIIT Curve (Graph 5) will continue to be in the "SAFE" area is \_\_\_\_\_ .

**Reference Provided**

- A. Primary Containment Pressure Limit;  
130°F
- B. Primary Containment Pressure Limit;  
140°F;
- C✓ Heat Capacity Temperature Limit;  
130°F
- D. Heat Capacity Temperature Limit;  
140°F;

54. 295028EA1.03 001

**Unit 2** was at 100% power when a small leak occurred inside the Drywell (DW).

The following conditions now exist:

- o Drywell Pressure: 2.2 psig
- o HIGHEST Drywell Temperature Point: 240°F

Which ONE of the choices below completes the following statement?

IAW 31EO-EOP-100-2, "Miscellaneous Emergency Overrides", the "2A" DW Chiller  
\_\_\_\_\_.

- A. is NOT allowed to be restarted, because this DW temperature is above the allowed winding temperature for restart of the DW Cooling Fan Motors
- B. is NOT allowed to be restarted, because at this DW temperature the potential for a rupture in the DW coolers exist
- C✓ is allowed to be restarted. The operator must first place the LOCA override switch to "BYPASS" and then reset the 86 Lockout relay at the DW Chiller breaker
- D. is allowed to be restarted. The operator must first reset the 86 Lockout relay at the DW Chiller breaker and then place the LOCA override switch to "BYPASS"

55. 295030EK1.02 001

**Unit 2** is operating at 100% power when a Loss of Coolant Accident occurs.

- o The High Pressure Coolant Injection system is being used to control RPV water level
- o The "2A" RHR pump is placed in Suppression Pool Cooling
- o "2A" RHR pump flow ..... 7,000 gpm
- o Torus Level ..... 135 inches
- o Torus Temperature ..... 225°F
- o Torus Pressure ..... 8 psig

Which ONE of the following choices completes this statement?

RHR pump 2A operation is in the \_\_\_\_\_ region of the RHR NPSH Limit graph and \_\_\_\_\_ .

**Reference Provided**

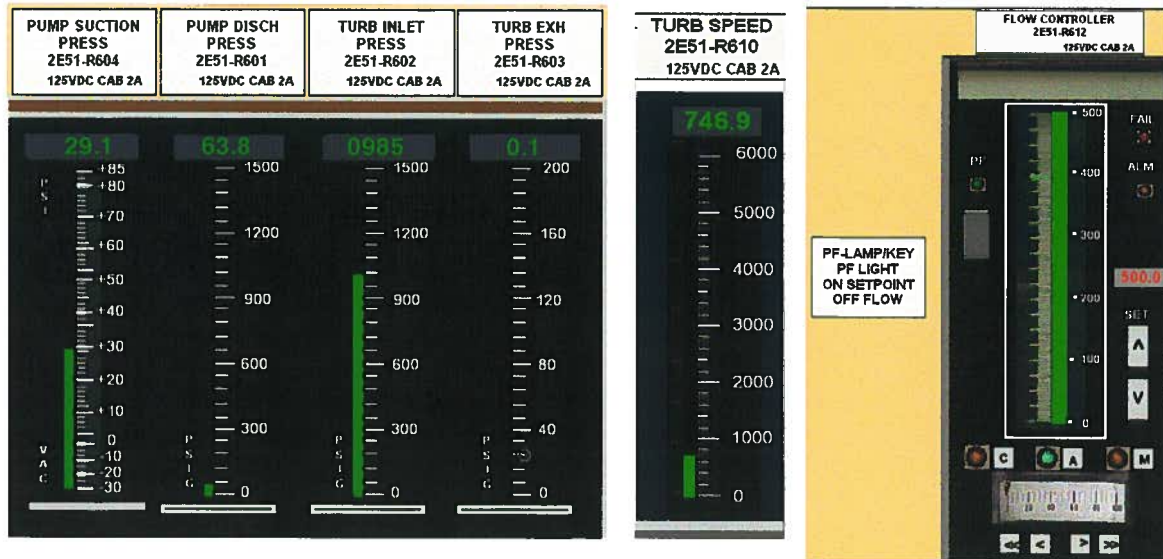
- A. safe;  
flow must be maintained at or below its current flow rate
- B. safe;  
flow is required to be increased to maximize suppression pool cooling
- C. unsafe;  
reducing flow will NOT restore operation to the safe area of the graph
- ☒ D. unsafe;  
reducing flow to 5,000 gpm will restore operation to the safe area of the graph



56. 295031EA1.05 001

**Unit 2** is at 100% RTP when the following occurs:

- o All normal Feedwater is lost
- o RWL is -50 inches



Based on the above indications, the RCIC flow controller should be \_\_\_\_\_.

- A. left in Automatic, and RCIC injection flow will start increasing reactor vessel level
- B. left in Automatic, but RCIC should be tripped because it is pumping 500 gpm through a feedwater line break
- C✓ placed in Manual, and the controller output should be increased until discharge pressure is greater than 985 psig
- D. placed in Manual, but the controller output should be decreased until RCIC flow is 400 gpm.

57. 295035EA1.01 001

**Unit 2** is operating at 100% RTP when a Feedwater transient results in a full Secondary Containment isolation. The following Unit 2 indications currently exist:

- o SBGT 2A                                      running
- o SBGT 2B                                      running
- o 2T46-R604A, Rx Bldg. dP              -0.75 inches H<sub>2</sub>O
- o 2T46-R604B, Rx Bldg. dP              -0.70 inches H<sub>2</sub>O

Which ONE of the choices below completes the following statements?

IAW 34SO-T46-001-2 "Standby Gas Treatment System", the operator is **REQUIRED** to \_\_\_\_\_ to limit the release of radioactive material.

IAW 31EO-EOP-014-2, SC - Secondary Containment Control, RR - Radioactivity Release Control flowchart, an entry condition \_\_\_\_\_ exist.

- A. place one SBGT in standby;  
does
- B✓ place one SBGT in standby;  
does NOT
- C. operate both SBGTs;  
does
- D. operate both SBGTs;  
does NOT

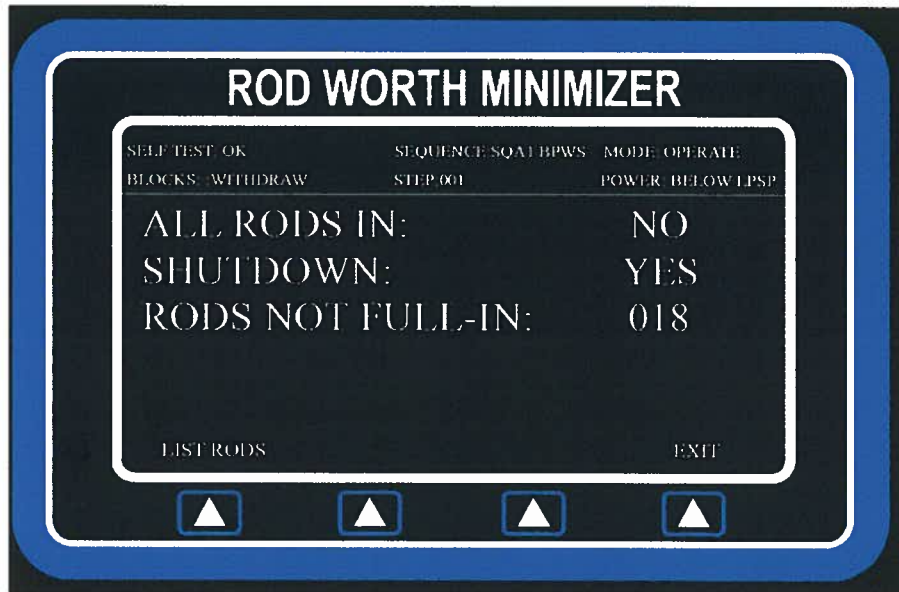
58. 295037EK2.12 001

**Unit 1** was operating at 100% power when a reactor scram occurred.

IMMEDIATELY following the scram, the APRMs indicate reactor power is at 5%.

- o Standby Liquid Control (SBLC) has NOT been injected.

10 minutes LATER Rod Worth Minimizer (RWM) displays the following:



Based on these conditions, which ONE of the following completes both of these statements?

IAW 31EO-EOP-103-1, "Control Rod Insertion Methods," RWM \_\_\_\_\_ REQUIRED to be bypassed to insert control rods.

With the current control rod configuration, the reactor \_\_\_\_\_ remain subcritical under ALL conditions, without boron injection.

- A. is;  
will
- B. is;  
will NOT
- C. is NOT;  
will
- D. is NOT;  
will NOT

59. 295038EK1.01 001

A core damaging event occurs on **Unit 1** which results in the release of radioactive IODINE to the public.

The part of the human body which is the most significantly impacted by the release of radioactive IODINE is the \_\_\_\_\_ .

The NPO will determine the Projected Offsite dose to the public using \_\_\_\_\_

- A. skin;  
73EP-EIP-015-0, Offsite Dose Assessment
- B. skin;  
73EP-EIP-018-0, Prompt Offsite Dose Assessment
- C. thyroid;  
73EP-EIP-015-0, Offsite Dose Assessment
- ☒ D. thyroid;  
73EP-EIP-018-0, Prompt Offsite Dose Assessment

60. 300000A2.O1 001

**Unit 2** is operating at 15% RTP with Air Dryer, 2P52-D101B, DANGER Tagged out of service.

Subsequently, a malfunction with Air Dryer, 2P52-D101A, results in downstream air pressure slowly decreasing and stabilizing at 40 psig.

When the air pressure downstream of 2P52-D101A reaches 40 psig, \_\_\_\_\_ will have automatically CLOSED.

IAW 34AB-P51-001-2, Loss Of Instrument And Service Air System Or Water Intrusion Into The Service Air System, RWL will be controlled using the \_\_\_\_\_ .

- A. 2P52-F015, Non-Essential Inst. Air Isolation Valve;  
2N21-F111, S/U Level Control Valve
- B. 2P52-F015, Non-Essential Inst. Air Isolation Valve;  
2N21-F110, S/U Level Control Bypass Valve
- C. 2P52-F565, Rx Bldg Inst N<sub>2</sub> To Non-Int Air El. 185 Isol Valve;  
2N21-F111, S/U Level Control Valve
- D. 2P52-F565, Rx Bldg Inst N<sub>2</sub> To Non-Int Air El. 185 Isol Valve;  
2N21-F110, S/U Level Control Bypass Valve

61. 300000K1.03 001

**Unit 2** is shutting down for a refueling outage.

- o Instrument Air has been aligned to the Drywell (DW)
- o At 10:00 a pneumatics header line breaks inside the DW causing an air flow rate of 50 SCFM

Which ONE of the following choices completes this statement?

The DW pneumatics header isolation valves associated with the broken header \_\_\_\_\_ automatically isolate \_\_\_\_\_ .

- A. will;  
immediately
- B. ☒ will;  
following a 10 minute delay
- C. will NOT;  
because the Instrument Air flow is less than the DW Pneumatics isolation setpoint
- D. will NOT;  
because the flow element is upstream of where the Instrument Air ties into the DW Pneumatics header

62. 400000A1.01 001

**Unit 2** is operating at 100% RTP with the 2A and 2B RBCCW pumps in service.

Subsequently, the following occurs:

- o 600VAC 2D Bus supply breaker trips due to a bus fault
- o Maintenance has NOT identified the location of the fault

Which ONE of the choices below correctly completes the following statements?

Ten (10) minutes after the bus fault, RBCCW flow to the Drywell will be \_\_\_\_\_ before the 600VAC 2D Bus supply breaker tripped.

The operator will monitor RBCCW flow to the Drywell at Panel \_\_\_\_\_ .

- A. significantly lower than;  
2H11-P602
- B. significantly lower than;  
2H11-P650
- C. approximately the same as;  
2H11-P602
- D✓ approximately the same as;  
2H11-P650

63. 500000EK2.07 001

**Unit 2** has experienced an accident that results in these Primary Containment parameters:

- o Drywell (DW) Hydrogen concentration ..... 8%
- o DW Oxygen concentration ..... 7%
- o DW pressure ..... 24 psig and slowly increasing
- o Torus level ..... 155 inches

With the above conditions and IAW 31EO-PCG-001-2, "Primary Containment Gas Control" chart:

The operator is required to vent the \_\_\_\_\_ the containment atmosphere using the \_\_\_\_\_ .

- A. DW to reduce the flammability of;  
CAD Loop System two (2) inch valves
- B. DW to reduce the flammability of;  
EMERGENCY Vent System eighteen (18) inch valves
- C✓ Torus to reduce the flammability and scrub;  
CAD Loop System two (2) inch valves
- D. Torus to reduce the flammability and scrub;  
EMERGENCY Vent System eighteen (18) inch valves



64. 600000AK1.01 001

An electrical fire is reported on **Unit 1** in the "1F" 4160 VAC bus.

The fire suppression that is available in this room is \_\_\_\_\_ .

- A. automatically actuated Carbon Dioxide agent
- B. automatically actuated Halon agent
- C✓ manually actuated Carbon Dioxide agent
- D. manually actuated Halon agent

65. 700000AK2.03 001

**BOTH** units are operating at 100% power when a grid disturbance occurs.

The following indications occur on 1S40-R600, 230 KV voltmeter, on panel 1H11-P653:

| Time  | 1S40-R600 |
|-------|-----------|
| 10:00 | 236 kV    |
| 10:05 | 236 kV    |
| 10:10 | 232 kV    |
| 10:15 | 224 kV    |

The NCC has notified the control room crews that 230 KV Bus voltage cannot be maintained above the normal minimum voltage.

IAW 34AB-S11-001-0, Operation With Degraded System Voltage, which ONE of the following is the EARLIEST time 230 kV Bus voltage is BELOW the normal minimum voltage AND a REQUIRED action for this voltage?

- A. 10:10;  
Transfer Station Service Buses to their alternate supply.
- B✓ 10:10;  
Initiate a one hour Required Action Statement
- C. 10:15;  
Transfer Station Service Buses to their alternate supply
- D. 10:15;  
Initiate a one hour Required Action Statement

66. G2.1.1 001

IAW NMP-OS-007, Conduct of Operations, EXCLUDING shift turnover walkdowns:

The Operator at the Controls (OATC) is required to walkdown the front Control Room panels a MINIMUM of every \_\_\_\_\_ .

The walkdowns \_\_\_\_\_ required to be documented in the Unit Control Log.

- A✓ two (2) hours;  
are
- B. two (2) hours;  
are NOT
- C. one (1) hour;  
are
- D. one (1) hour;  
are NOT

67. G2.1.8 001

**Unit 2** is operating at 100% RTP.

IAW 34SO-B31-001-2, Reactor Recirculation System, which ONE of the following describes the MINIMUM qualification and the coordination requirements for changing Recirc Pump "A" speed locally?

A Nuclear Plant Operator In Training (NPOIT) can perform the LOCAL speed adjustment if \_\_\_\_\_ .

- A. a licensed Nuclear Plant Operator is present at the local ASD A Cabinet and communication with the Control Room is NOT required
- B. a licensed Nuclear Plant Operator is present at the local ASD A Cabinet and notifies the Control Room only after the speed adjustment has been made
- C. an active Senior Reactor Operator is present at the local ASD A Cabinet and notifies the Control Room only after the speed adjustment has been made
- D✓ an active Senior Reactor Operator is present at the local ASD A Cabinet and in constant communication with the Main Control Room

68. G2.1.20 001

IAW NMP-OS-007-001, Conduct of Operations Standards and Expectations, under normal, stable plant conditions, performing ARP steps out of order \_\_\_\_\_ .

- A. IS allowed with NO other NPO concurrence required
- B. IS allowed but ONLY after the concurrence of an additional NPO
- C✓ IS NOT allowed since ARP steps are to be performed in the sequence they are written
- D. IS NOT allowed since ALL procedures are to be performed in the sequence they are written

69. G2.2.21 001

**Unit 1** is in day 20 of a 27 day planned Refueling outage.

Motor replacement is complete for 1E11-F007B, RHR Minimum Flow valve, and the operability surveillance is in progress.

IAW 34SV-E11-002-1, RHR Valve Operability,

To time 1E11-F007B OPEN, the NPO will START the stopwatch when the \_\_\_\_\_ .

When 1E11-F007B has traveled OPEN, the valve stem position indication \_\_\_\_\_  
REQUIRED to be confirmed LOCALLY.

- A✓ control switch is placed to OPEN;  
is
- B. control switch is placed to OPEN;  
is NOT
- C. red light FIRST illuminates;  
is
- D. red light FIRST illuminates;  
is NOT;

70. G2.2.22 001

**Unit 2** is operating at 90% power.

At 10:00:

- o Drywell (DW) pressure is 1.0 psig.
- o DW pressure begins going up at 0.05 psig/minute

IAW Tech Spec Limiting Condition for Operation (LCO) 3.6.1.4, Drywell Pressure, which ONE of the choices below completes the following statements?

With the above trend, the EARLIEST listed time that an entry into a Required Action Statement (RAS) for DW pressure is \_\_\_\_\_ .

DW pressure is required to be restored to within limit NO later than \_\_\_\_\_ from entering the RAS.

- A. 10:04;  
15 minutes
- B. 10:04;  
1 hour
- C. 10:16;  
15 minutes
- ☒ D. 10:16;  
1 hour

71. G2.2.36 001

**Unit 2** is operating at 100% RTP in Type "A" Secondary Containment.

The following equipment has been inoperable for one day (RAS written):

- o SBGT 2A - breaker will NOT reset

Which ONE of the following maintenance activities, if it resulted in tripping the feeder breaker to the MCC, would REQUIRE entry into an additional Tech Spec RAS for the SBGT System?

Troubleshooting on the feeder breaker to \_\_\_\_\_ .

- A. Reactor Bldg MCC-2D, 2R24-S014
- B. Reactor Bldg MCC-2A, 2R24-S013
- C✓ Reactor Bldg MCC-2B, 2R24-S012
- D. Reactor Bldg MCC-2C, 2R24-S011



72. G2.3.11 001

Which ONE of the following is the BASIS for restarting the Reactor Building (RB) Ventilation when executing 31EO-EOP-014-2, "SC Secondary Containment Control - RR Radioactivity Release Control"?

Restarting the RB Ventilation maintains \_\_\_\_\_ AND assures a release from the RB Ventilation System is monitored prior to exiting the \_\_\_\_\_ .

- A. equipment operability ONLY;  
Main Stack
- B. equipment operability ONLY;  
Reactor Building Stack
- C. control of RB temperature and pressure;  
Main Stack
- D. control of RB temperature and pressure;  
Reactor Building Stack

73. G2.3.13 001

**Unit 1** is shutting down for a refueling outage.

- o A normal "Initial" Drywell (DW) entry at power is required.

Which ONE of the choices below completes the following statement IAW 31GO-OPS-005-0, "Primary Containment Entry."

Before a normal "Initial" DW entry is allowed, Oxygen (O<sub>2</sub>) concentration must be at least \_\_\_\_\_ and reactor power must be less than or equal to \_\_\_\_\_.

- A. 19.5%;  
15%
- B✓ 19.5%;  
10%
- C. 23.5%;  
15%
- D. 23.5%;  
10%

74. G2.4.16 001

**Unit 2** has experienced a complete loss of offsite power (LOSP).

The following conditions exist on Unit 2:

- o ONLY 4160 VAC bus 2E is energized
- o Drywell pressure is currently 1.0 psig and rising 0.1 psig per minute
- o RWL is -5 inches slowly increasing
  
- o 34AB-R22-003-2, Station Blackout, in progress
- o 31EO-EOP-010-2, RC Flow Chart, in progress

With the above conditions, actions in the \_\_\_\_\_ takes precedent over actions in any other procedure.

34AB-R22-003-2, Station Blackout procedure, will be EXITED when a MINIMUM of \_\_\_\_\_ 4160V Emergency buses are energized on Unit 2.

- A✓ 34AB-R22-003-2, Station Blackout procedure;  
two (2)
  
- B. 34AB-R22-003-2, Station Blackout procedure;  
three (3)
  
- C. EOP procedures;  
two (2)
  
- D. EOP procedures;  
three (3)

75. G2.4.5 001

A Fuel Handling accident on **Unit 1** results in a radioactive release.

The type of procedure that will provide the DETAILED guidance for notifying state and local agencies of the Fuel Handling accident release is \_\_\_\_\_ .

If a conflict exists between a Fleet procedure and a Site procedure, the governing guidance will come from the \_\_\_\_\_ procedure.

- A. NMP-EP, Nuclear Management Procedures for Emergency Preparedness;  
Site
- B✓ NMP-EP, Nuclear Management Procedures for Emergency Preparedness;  
Fleet
- C. NMP-RP, Nuclear Management Procedures for Radiation Protection;  
Site
- D. NMP-RP, Nuclear Management Procedures for Radiation Protection;  
Fleet

76. 201006A2.06 001

**Unit 2** is at 70% RTP.

- o Rod Worth Minimizer (RWM) is NOT in Sequence Control Mode
- o A \*\* group control rod at position 36 is selected
- o A malfunction in APRM "D" occurs
- o APRM "D" is currently reading 4%
- o NO operator action has been taken

With the above conditions, the mode of operation for RWM will be \_\_\_\_\_ Low Power Setpoint, (LPSP).

IAW with 31GO-OPS-006-0, "Conditions, Required Actions and Completion Times", for APRM "D", the Shift Supervisor and Shift Manager will \_\_\_\_\_ in the Required Action Sheet boxes below.

|                      |         |
|----------------------|---------|
| SS SIGN / TSA ACTIVE | SM SIGN |
|----------------------|---------|

- A. less than;  
sign
- B✓ less than;  
initial (signature is NOT allowed)
- C. greater than;  
sign
- D. greater than;  
initial (signature is NOT allowed)

77. 209001G2.4.49 001

**Unit 1** was operating at 100% RTP when a transient resulted in the following:

Date 4/10/2013 Time 12:00

- o Reactor scram, all rods fully insert
- o Drywell pressure: 0.7 psig
- o Reactor water level: -102 inches, decreasing
- o Reactor pressure: 475 psig
- o Both Core Spray (CS) systems are in standby due to a failure of ALL Core Spray Instrumentation Initiation logic

Based on the current above plant conditions:

As a MINIMUM, the operator will start both CS pumps \_\_\_\_\_ .

IAW TECH SPEC, the EARLIEST listed time that REQUIRES Unit 1 to be in mode 4 is 4/12/2013 at \_\_\_\_\_ .

**Reference Provided**

A✓ , but will NOT open 1E21-F005A/B, Discharge valves;

02:00

B. , but will NOT open 1E21-F005A/B, Discharge valves;

03:00

C. and WILL open 1E21-F005A/B, Discharge valves;

02:00

D. and WILL open 1E21-F005A/B, Discharge valves;

03:00

78. 215003A2.05 001

**Unit 2** Reactor startup is in progress.

The following IRM readings have been observed while switching up from range 6 to range 7:

| IRM Channel | Range 6 | Range 7 |
|-------------|---------|---------|
| A           | 75      | 8.0     |
| B           | 60      | 0.0     |
| C           | 75      | 8.0     |
| D           | 70      | 6.0     |
| E           | 70      | 8.5     |
| F           | 50      | 5.0     |
| G           | 65      | 9.0     |
| H           | 70      | 8.5     |

IAW 34GO-OPS-001-2, "Plant Startup", and with the above IRM data,

Acceptable overlap is confirmed on \_\_\_\_\_ IRMs.

The LOWEST level of authority required to continue the reactor startup is the \_\_\_\_\_ .

- A✓ six (6);  
Shift Supervisor
- B. six (6);  
Shift Manager
- C. seven (7);  
Shift Supervisor
- D. seven (7);  
Shift Manager

79. 218000A2.05 001

**Unit 2** was operating at 100% RTP when the following electrical malfunctions occur:

- o The bus supplying NORMAL power to the ADS Valves deenergizes
- o 125/250 VDC Switchgear "2B" (2R22-S017), deenergizes
- o 125 VDC 2D, 2R25-S004, deenergizes

Subsequently, a transient results in the following:

- o RWL ..... (-)30 inches
- o Reactor pressure ..... 650 psig
- o Torus pressure ..... 20 psig
- o Torus level ..... 120 inches
- o Torus temperature ..... 170°F

With the above conditions:

If the control switch for 2B21-F013M, ADS valve, is placed to the open position, the 2B21-F013M \_\_\_\_\_ open.

IAW EOPs, entry into 31EO-EOP-108-2, Alternate RPV Depressurization, \_\_\_\_\_ REQUIRED to reduce Reactor pressure.

**Reference Provided**

- A. will;  
is
- B. will;  
is NOT
- C✓ will NOT;  
is
- D. will NOT;  
is NOT



80. 261000A2.08 001

**Unit 2** is operating at 100% RTP when the following occurs:

- o 10:00  
Fire alarm received on Unit 2 Control Building  
SO dispatched to investigate
- o 10:02  
Loss of 24/48V DC Cabinet 2A, 2R25-S015, occurs
- o 10:03  
SO reports 24/48V DC Cabinet 2A, 2R25-S015 is on fire
- o 10:17  
SO reports 2R25-S015 fire is EXTINGUISHED, however,  
2R25-S015 is severely damaged

IAW 34AB-R22-001-2, Loss Of DC Buses, at 10:05, without any operator actions, the TOTAL number of SBTGT fans running is \_\_\_\_\_ .

IAW NMP-EP-110, Emergency Classification Determination and Initial Actions, the fifteen (15) minute clock for declaring an emergency STARTS at \_\_\_\_\_ .

- A. four (4);  
10:00
- B. four (4);  
10:03
- C. three (3);  
10:00
- D. three (3);  
10:03

81. 263000G2.4.8 001

**Unit 2** is in Startup with the following conditions:

- o Reactor pressure is 80 psig and steady

An event occurs resulting in the following:

- o The Supply breaker to 600 V Bus 2C trips and can NOT be re-closed
- o RWL is 15" increasing 1" per minute (lowest level reached 10")

Given these conditions, which ONE of the following completes both statements?

IAW Tech Specs, a Required Action Statement MUST be entered for \_\_\_\_\_ .

In order to restore the associated Station Service Battery Chargers to service and IAW 34AB-R23-001-2, "Loss of 600 Volt Emergency Bus", energizing 600 VAC bus "2C" using the 4160/600V "2CD" Transformer is \_\_\_\_\_ .

- A. 600VAC "2C" ONLY;  
NOT allowed
- B. 600VAC "2C" ONLY;  
allowed
- C. 600VAC "2C" AND also for Instrument Bus "2A";  
NOT allowed
- D. 600VAC "2C" AND also for Instrument Bus "2A";  
allowed

82. 290001A2.02 001

**Unit 2** is operating at 100% RTP operating in TYPE "A" Containment.

A SO reports that one (1) of the Unit 2 Reactor Building (RB) Blowout panels is damaged and is NOT fully closed and sealed.

- o Unit 2 Reactor Building (RB) dP is +0.02 inches WC and steady

Operations and Engineering are reviewing recent performances of 34SV-T22-002-0, Secondary Containment Integrity, and determines the 31 day surveillance was last performed on July 19.

Today's date is September 19.

Entry into 34AB-T22-002-2, Loss Of Secondary Containment Integrity, \_\_\_\_\_  
REQUIRED at this time.

IAW TS, without performing a Risk Evaluation, the LATEST time allowed to perform 34SV-T22-002-0 before requiring entry into a RAS, is \_\_\_\_\_ .

- A✓ is;  
24 hours
- B. is;  
31 days
- C. is NOT;  
24 hours
- D. is NOT;  
31 days

83. 290003G2.4.4 001

At 08:58, **Unit 1** is operating at 7% RTP ready to transfer the Reactor mode switch to "RUN".

At 09:00, an event occurs causing Refueling Floor ARMs to indicate the following:

|   |          |
|---|----------|
| 1D21-K601A, Reactor head laydown area,          | 52 mr/hr |
| 1D21-K601B, Refueling Floor Stairway,           | 25 mr/hr |
| 1D21-K601D, Refueling Floor,                    | 24 mr/hr |
| 1D21-K601E, Drywell Shield Plug,                | 22 mr/hr |
| 1D21-K601M, Spent Fuel Pool & New Fuel Storage, | 40 mr/hr |

At 09:03, Unit 1 NPO reports 1Z41-C012B, Control Room HVAC Filter Fan, will NOT run. LCO 3.7.4 Main Control Room Environmental Control (MCREC) System, RAS is entered.

At 09:05, Refueling Floor HP notifies the control room that High Radiation trash was being moved on the Refueling Floor and had caused the higher than normal radiation conditions.

At 09:07, the High Radiation trash has been removed from the Refueling Floor. The ABOVE ARMs are now indicating NORMAL values.

At 09:15, the operating crew is ready to transfer the Reactor Mode switch to "RUN".

At 09:00, an entry condition existed for \_\_\_\_\_ .

At 09:15, with 1Z41-C012B inoperable and without performance of a Risk Assessment, Tech Specs \_\_\_\_\_ allow transferring the Reactor Mode switch to the "RUN" position.

### Reference Provided

- A. ONLY 34AB-T22-003-1, Secondary Containment Control;  
will
- B. ONLY 34AB-T22-003-1, Secondary Containment Control;  
will NOT
- C. BOTH 34AB-T22-003-1, Secondary Containment Control, AND  
31EO-EOP-014-1, SC/RR, EOP Flowchart;  
will
- ☒ D. BOTH 34AB-T22-003-1, Secondary Containment Control, AND  
31EO-EOP-014-1, SC/RR, EOP Flowchart;  
will NOT

84. 295004AA2.02 001

**Unit 2** is operating at 100% power with the following electrical lineup:

- o The 30 amp DC breaker tripped for ACB 135554, 4160V Bus "2E" Normal Supply breaker
- o The 30 amp DC breaker CANNOT be closed
- o 4160V Bus "2E" is on Alternate Supply from SAT 2C
- o 4160V Bus "2F" is on Normal Supply from SAT 2D
- o 4160V Bus "2G" is on Normal Supply from SAT 2D

With the above conditions;

IAW TS Bases 3.8.1, "AC Sources - Operating", entry into a TS Required Action Statement (RAS) \_\_\_\_\_ REQUIRED.

ACB 135554 breaker \_\_\_\_\_ have a trip signal due to the loss of the 30 amp DC breaker.

- A. is NOT;  
will NOT
- B. is NOT;  
will,
- C. is;  
will NOT,
- D. is;  
will

85. 295007AA2.01 001

**Unit 2** is operating at 100% RTP, when a reactor pressure transient occurs resulting in the following:

- o 603-114, REACTOR VESSEL PRESSURE HIGH illuminates

Subsequently, Drywell Floor Drain leakage increases to 55 gpm

The REACTOR VESSEL PRESSURE HIGH alarm setpoint is \_\_\_\_\_ psig.

IAW NMP-EP-110, Emergency Classification Determination and Initial Action, the HIGHEST Emergency Classification that will be declared based on Drywell Floor Drain leakage is \_\_\_\_\_ .

**Reference Provided**

- A. 1060;  
an Alert Emergency
- B. 1060;  
a Site Area Emergency
- C✓ 1055;  
an Alert Emergency
- D. 1055;  
a Site Area Emergency

86. 295012G2.4.11 001

**Unit 2** was operating at 100% RTP when a loss of Drywell cooling occurred.

IAW 34AB-T47-001-2, Complete Loss of Drywell Cooling:

The crew is required to enter \_\_\_\_\_ when any peak temperature listed in Attachment 1 has been exceeded for a MINIMUM of \_\_\_\_\_ .

- A. 34GO-OPS-013-2, Normal Plant Shutdown;  
1 hour
- B. 34GO-OPS-013-2, Normal Plant Shutdown;  
30 minutes
- C. 34GO-OPS-014-2, Fast Reactor Shutdown;  
1 hour
- ☒ D. 34GO-OPS-014-2, Fast Reactor Shutdown;  
30 minutes

87. 295016G2.2.37 001

An event results in the Main Control Room being abandoned.

Control of **Unit 2** is established at the Unit 2 Remote Shutdown Panel (RSDP).

31RS-OPS-001-2, Shutdown From Outside Control Room, is in progress.

- o ALL RSDP Emergency Transfer Switches are in the "EMERGENCY" position

Subsequently, Unit 2 Drywell pressure increases to 3.0 psig.

A SO reports the following:

- o RHR pump 2A is NOT running

Maintenance reports RHR pump 2A Lockout Relay has TRIPPED.

The procedure that contains the guidance for whose AUTHORITY is required to reset the RHR pump 2A Lockout Relay is \_\_\_\_\_ .

With the RSDP Emergency Transfer Switches in the "EMERGENCY" position, RHR pump 2B is \_\_\_\_\_ .

- A. NMP-OS-007-001, Conduct of Operations Standards and Expectations; operable
- B. NMP-OS-007-001, Conduct of Operations Standards and Expectations; inoperable BUT available
- C. 31GO-OPS-021, Manipulation of Controls and Equipment; operable
- ☒ D. 31GO-OPS-021, Manipulation of Controls and Equipment; inoperable BUT available



88. 295019G2.1.28 001

**Unit 2** was operating at 100% RTP when an event occurred resulting in the following:

- o Normal pneumatic supply to the Unit 2 Drywell is lost
- o NO High pressure OR Low pressure injection system will operate

Section 7.3.1, Emergency Nitrogen Supply Operation, of 34SO-P70-001-2, Drywell Pneumatics System, has been completed and is supplying Emergency Nitrogen to the Drywell.

- o RWL is -186 inches and slowly decreasing

After performing section 7.3.1, Emergency Nitrogen Supply Operation, the MAXIMUM number of SRVs that will be supplied Nitrogen from the Emergency Nitrogen Bottles is \_\_\_\_\_ .

With RWL at -186 inches and decreasing, Reactor pressure is REQUIRED to be controlled using EOP flowchart \_\_\_\_\_ .

- A. 11;  
RC RPV Control (Non-ATWS), RC/P path
- B. 11;  
CP-1 Point F, Steam Cooling path
- C. 5;  
RC RPV Control (Non-ATWS), RC/P path
- ☒ D. 5;  
CP-1 Point F, Steam Cooling path

89. 295023AA2.02 001

Fuel movement is in progress on **Unit 1**.

Currently a fuel bundle is on the Main Grapple over the Fuel Pool area.

While over the Unit 1 Fuel Pool, the Main Grapple malfunctions releasing the irradiated fuel bundle and punctures the Fuel Pool liner.

Fuel Pool water level decreases and stabilizes at 22 feet.

The dropped fuel bundle is damaged and bubbles are observed floating to the surface.

Subsequently, a Secondary Containment isolation occurs due to the conditions on the Refuel Floor.

With the above Fuel Pool water level, LCO TS 3.7.8, Spent Fuel Storage Pool Water Level, \_\_\_\_\_ met.

IAW 31EO-EOP-014-1, SC/RR, the Unit 1 Reactor Building HVAC fans \_\_\_\_\_ ALLOWED to be restarted.

- A. is still;  
are
- B✓ is still;  
are NOT
- C. is NOT;  
are
- D. is NOT;  
are NOT

90. 295024EA2.02 001

**UNIT 1** was operating at 100% RTP when a steam leak in the Drywell resulted in the following:

- o Drywell average temperature is ..... 255°F
- o Drywell pressure is ..... 5.0 psig
- o Torus pressure is ..... 4.0 psig

With the above plant conditions, if Drywell Sprays are INITIATED, there is an increased risk of \_\_\_\_\_ .

Subsequently, the NPO reports that ALL RWL instruments are simultaneously displaying erratic indication, an Emergency Depress will be ordered from \_\_\_\_\_ ONLY.

**Reference Provided**

- A. damaging the Primary Containment Vent system due to exceeding the capacity of the Torus to Drywell Vacuum Breakers;

31EO-EOP-016-1, CP-2 RPV Flooding

- B. damaging the Primary Containment Vent system due to exceeding the capacity of the Torus to Drywell Vacuum Breakers;

31EO-EOP-015-1, CP-1 Emergency RPV Depressurization

- C. de-inerting the containment due to opening the Reactor Building to Torus vacuum breakers before the operator can secure sprays;

31EO-EOP-016-1, CP-2 RPV Flooding

- D. de-inerting the containment due to opening the Reactor Building to Torus vacuum breakers before the operator can secure sprays;

31EO-EOP-015-1, CP-1 Emergency RPV Depressurization

91. 295032EA2.03 001

**Unit 1** is operating at 100% RTP, when an unisolable steam leak occurs in the plant.

- o Main Control Room indications and alarms indicate rapidly increasing temperature in the Southwest Diagonal
- o A NPO reports the temperature in the Southwest Diagonal is above Maximum Safe Operating Temperature

This increasing temperature is a result of a steam leak on the \_\_\_\_\_ system.

IAW 31EO-EOP-014-1, SC/RR, EOP flowchart, the SS is REQUIRED to perform \_\_\_\_\_ .

- A. HPCI;  
34GO-OPS-014-1, Fast Reactor Shutdown
- B. HPCI;  
point A of the RC EOP flowchart
- C. RCIC;  
34GO-OPS-014-1, Fast Reactor Shutdown
- ☒ D. RCIC;  
point A of the RC EOP flowchart

92. 295037G2.4.49 001

**Unit 1** was operating at 100% power when a transient occurred resulting in the following:

- o All control rods did not fully insert
- o Reactor power ..... 8%
- o Reactor Water Level..... 9 inches
- o Drywell pressure ..... 2.2 psig
- o Torus water temperature..... 125°F
- o Both Recirculation pumps are operating at minimum speed

IAW RC-1 and based on the above conditions, the OATC \_\_\_\_\_ REQUIRED to trip the Recirculation pumps.

Based on the above conditions, and IAW EOP Flowcharts RCA and CP-3 Overrides, \_\_\_\_\_ REQUIRED to be entered.

**NOTE:**

31EO-EOP-113-1, Terminating And Preventing Injection Into The RPV  
 31EO-EOP-114-1, Preventing Injection Into The RPV From Core Spray And LPCI

**Reference Provided**

A. is NOT;

ONLY EOP-114-1 is

B. is NOT;

BOTH EOP-113-1 and EOP 114-1 are

C. is;

ONLY EOP-114-1 is

☒ D. is;

BOTH EOP-113-1 and EOP 114-1 are

93. 700000AA2.07 001

**Unit 1** is operating at 100% RTP.

The load dispatcher reports degraded grid conditions with the following indications present for the LAST ONE MINUTE:

- o Generator frequency ..... 59.7 hertz
- o 1H11-P653 VOLTMETER 1S40-R600 ..... 225 KV
  
- o 4160 VAC BUS 1E ..... 3695 volts
- o 4160 VAC BUS 1F ..... 3690 volts
- o 4160 VAC BUS 1G ..... 3685 volts
  
- o 652-122, 4160V BUS 1E VOLTAGE LOW      ILLUMINATED
- o 652-222, 4160V BUS 1F VOLTAGE LOW      ILLUMINATED
- o 652-322, 4160V BUS 1G VOLTAGE LOW      ILLUMINATED

With the above plant conditions, \_\_\_\_\_ .

IAW 34AB-S11-001-0, Operation With Degraded System Voltage, after 30 minutes, a MINIMUM of \_\_\_\_\_ REQUIRED to be supplied from the Emergency Diesel Generator(s) on **Unit 1**.

A. Main Turbine blade damage may occur due to off frequency operation;

one (1) 4160 V Emergency bus is

B. Main Turbine blade damage may occur due to off frequency operation;

two (2) 4160 V Emergency busses are

C✓ Emergency Bus loads may be damaged by degraded voltages;

one (1) 4160 V Emergency bus is

D. Emergency Bus loads may be damaged by degraded voltages;

two (2) 4160 V Emergency busses are

94. G2.1.3 001

At 13:55, **Unit 2** was operating at 100% RTP when a Feedwater transient occurred.

At 14:00, the OATC inserted a manual scram.

At 17:45, the ON-COMING Shift Supervisor (SS) is reviewing the shift logs.

- o The ON-COMING SS previously worked seven (7) days ago

Which ONE of the choices below completes both statements?

IAW NMP-OS-007-001, "Conduct of Operations Standards and Expectations", prior to assuming shift, the ON-COMING SS is REQUIRED to review the previous \_\_\_\_\_ of shift's log.

IAW REG-025, One, Four, and Eight Hour Reporting Requirements of 10 CFR 50.72, the NRC must be notified of this event NO LATER THAN \_\_\_\_\_ .

- A. three (3) days;  
21:59
- B✓ three (3) days;  
17:59
- C. seven (7) days;  
21:59
- D. seven (7) days;  
17:59

95. G2.1.36 001

**Unit 2** is in REFUEL with core reload in progress.

IAW 34FH-OPS-001-0, Fuel Movement Operation, which ONE of the choices below correctly completes the following statements?

For core reload, the Unit 2 Reactor Mode switch is REQUIRED to be in the \_\_\_\_\_ .

The fuel movement prerequisites must be completed \_\_\_\_\_ .

- A✓ Refuel position and LOCKED;  
at EACH shift change (12 hour shift) during fuel movement
- B. Refuel position and LOCKED;  
ONLY once during the refueling outage (prior to the initial fuel movement)
- C. Refuel position ONLY (NOT locked);  
at EACH shift change (12 hour shift) during fuel movement
- D. Refuel position ONLY (NOT locked);  
ONLY once during the refueling outage (prior to the initial fuel movement)



96. G2.2.18 001

IAW 31GO-OPS-024-0, Outage Safety Assessment, which ONE of the following completes both statements?

The individual responsible for completing the Outage Safety Assessment is the \_\_\_\_\_ .

Planned entry into an ORANGE (moderate risk) condition  
REQUIRES approval of the \_\_\_\_\_ .

- A. respective Unit Operator at the Controls (OATC);  
Work Management Director ONLY
- B✓ respective Unit Operator at the Controls (OATC);  
Work Management Director AND the Plant Manager
- C. Shift Technical Advisor (STA);  
Work Management Director ONLY
- D. Shift Technical Advisor (STA);  
Work Management Director AND the Plant Manager

97. G2.2.39 001

**Unit 1** is operating at 100% RTP.

At 0800, the 1A Diesel Generator is declared inoperable.

IAW TS 3.8.1 AC Sources - Operating, the LATEST ALLOWABLE time to complete the initial TS REQUIRED portions of 34SV-SUV-013-0, Weekly Breaker Alignment Checks, due to the inoperable Diesel Generator is \_\_\_\_\_ .

IAW TS SR 3.0.2, the subsequent performance time of 34SV-SUV-013-0 is MET if it is completed within \_\_\_\_\_ times the interval specified in the RAS Completion Time.

- A. 0829;  
2.0
- B. 0829;  
1.25
- C. 0859;  
2.0
- D✓ 0859;  
1.25

98. G2.3.4 001

A **Unit 1** Primary system line break is discharging to the environment and CANNOT be isolated from the Main Control Room.

The Shift Manager has declared a General Emergency due to dose rates exceeding 1,000 mR/hr beyond the site boundary.

An Authorization To Exceed 10CFR20 exposure limits will be needed to rescue an injured operator attempting to isolate the line.

There are NO volunteers to perform the life saving rescue.

The Health Physic Manager has arrived in the TSC.

The OSC & TSC facilities have NOT been activated at this time.

IAW NMP-EP-110, Emergency Classification Determination and Initial Action, the \_\_\_\_\_ is responsible for authorizing EXCEEDING the 10CFR20 exposure limits.

IAW 73EP-EIP-017-0, Emergency Exposure Control, and with the above conditions, the HIGHEST listed exposure that can be authorized for the rescue is \_\_\_\_\_ .

- A. Shift Manager;  
10 REM.
- B✓ Shift Manager;  
25 REM.
- C. Health Physic Manager;  
10 REM.
- D. Health Physic Manager;  
25 REM

99. G2.4.38 001

A Site Area Emergency has been declared due to an event on **Unit 1**.

IAW NMP-EP-110, Emergency Classification Determination and Initial Action, which ONE of the following identifies one of the responsibilities of the Emergency Director that CAN be delegated to another individual?

- A. The decision to dismiss nonessential personnel from the site after assembly and accountability has been completed.
- B✓ Directing the activation of the emergency organization (ERO callout).
- C. Recommending Protective Actions (PARS) to offsite authorities.
- D. Authorizing the use of Potassium Iodide (KI) tablets.

100. G2.4.4 001

**Unit 1** is at 100% power with the 1B EDG tagged out of service for repairs.

The following sequence of events occurs:

- o 11:30 - Offsite power is lost to Unit 1 ONLY
- o 11:35 - SO reports 1A EDG Lube Oil Pressure of 20 psig, lowering 0.5 psig /min
- o 11:45 - 1C EDG trips on Differential Lockout

Which ONE of the choices below completes the following statement?

The EARLIEST listed time which entry into 34AB-R43-001-1, Diesel Generator Recovery, is REQUIRED is \_\_\_\_\_ .

At 12:05, the required emergency classification is \_\_\_\_\_ .

**Reference Provided**

- A. 11:40;  
an Alert Emergency
- B✓ 11:40;  
a Site Area Emergency;
- C. 11:45;  
an Alert Emergency
- D. 11:45;  
a Site Area Emergency

# ILT-08 SRO NRC EXAM

## Answers

| #  | ID              | 0 |
|----|-----------------|---|
| 1  | 201003A2.09 1   | A |
| 2  | 203000K6.02 1   | C |
| 3  | 204000K1.15 1   | A |
| 4  | 205000K5.02 1   | A |
| 5  | 205000K5.03 1   | D |
| 6  | 206000A1.08 1   | B |
| 7  | 209001K3.01 1   | A |
| 8  | 209001K3.03 1   | B |
| 9  | 211000K2.02 1   | A |
| 10 | 212000A3.02 1   | B |
| 11 | 212000A4.15 1   | A |
| 12 | 215001A4.03 1   | A |
| 13 | 215002G2.4.4 1  | D |
| 14 | 215003K4.05 1   | B |
| 15 | 215004K1.02 1   | B |
| 16 | 215005A4.06 1   | D |
| 17 | 217000K5.06 1   | C |
| 18 | 218000K3.01 1   | B |
| 19 | 223001A3.05 1   | A |
| 20 | 223002A2.11 1   | C |
| 21 | 226001K6.04 1   | B |
| 22 | 233000K4.06 1   | A |
| 23 | 239001K5.05 1   | B |
| 24 | 239002K2.01 1   | A |
| 25 | 241000K3.03 1   | C |
| 26 | 245000K4.10 1   | C |
| 27 | 259002A4.08 1   | A |
| 28 | 261000A2.07 1   | A |
| 29 | 261000K1.03 1   | C |
| 30 | 262001K6.03 1   | D |
| 31 | 262002G2.4.4 1  | C |
| 32 | 263000A3.01 1   | C |
| 33 | 264000G2.2.42 1 | B |
| 34 | 268000A1.02 1   | B |
| 35 | 286000K2.02 1   | B |
| 36 | 295001AK2.06 1  | A |
| 37 | 295003AK1.02 1  | B |
| 38 | 295004G2.1.7 1  | B |
| 39 | 295005AK3.02 1  | D |
| 40 | 295006AA1.01 1  | B |
| 41 | 295009AK1.02 1  | C |
| 42 | 295010AA2.06 1  | B |
| 43 | 295012AK3.O1 1  | D |
| 44 | 295013G2.4.18 1 | B |
| 45 | 295016AA2.07 1  | B |
| 46 | 295017AA1.05 1  | A |
| 47 | 295018AK3.06 1  | D |

Answers

| #  | ID              | 0 |
|----|-----------------|---|
| 48 | 295019AA2.02 1  | C |
| 49 | 295021G2.2.40 1 | D |
| 50 | 295023AA2.03 1  | C |
| 51 | 295024EA2.06 1  | A |
| 52 | 295025G2.1.27 1 | B |
| 53 | 295026EK3.04 1  | C |
| 54 | 295028EA1.03 1  | C |
| 55 | 295030EK1.02 1  | D |
| 56 | 295031EA1.05 1  | C |
| 57 | 295035EA1.01 1  | B |
| 58 | 295037EK2.12 1  | A |
| 59 | 295038EK1.01 1  | D |
| 60 | 300000A2.O1 1   | B |
| 61 | 300000K1.03 1   | B |
| 62 | 400000A1.01 1   | D |
| 63 | 500000EK2.07 1  | C |
| 64 | 600000AK1.01 1  | C |
| 65 | 700000AK2.03 1  | B |
| 66 | G2.1.1 1        | A |
| 67 | G2.1.8 1        | D |
| 68 | G2.1.20 1       | C |
| 69 | G2.2.21 1       | A |
| 70 | G2.2.22 1       | D |
| 71 | G2.2.36 1       | C |
| 72 | G2.3.11 1       | D |
| 73 | G2.3.13 1       | B |
| 74 | G2.4.16 1       | A |
| 75 | G2.4.5 1        | B |
| 76 | 201006A2.06 1   | B |
| 77 | 209001G2.4.49 1 | A |
| 78 | 215003A2.05 1   | A |
| 79 | 218000A2.05 1   | C |
| 80 | 261000A2.08 1   | A |
| 81 | 263000G2.4.8 1  | A |
| 82 | 290001A2.02 1   | A |
| 83 | 290003G2.4.4 1  | D |
| 84 | 295004AA2.02 1  | A |
| 85 | 295007AA2.01 1  | C |
| 86 | 295012G2.4.11 1 | D |
| 87 | 295016G2.2.37 1 | D |
| 88 | 295019G2.1.28 1 | D |
| 89 | 295023AA2.02 1  | B |
| 90 | 295024EA2.02 1  | C |
| 91 | 295032EA2.03 1  | D |
| 92 | 295037G2.4.49 1 | D |
| 93 | 700000AA2.07 1  | C |
| 94 | G2.1.3 1        | B |

---

**Answers**

---

| #                             | ID        | 0             |
|-------------------------------|-----------|---------------|
| 95                            | G2.1.36 1 | A             |
| 96                            | G2.2.18 1 | B             |
| 97                            | G2.2.39 1 | D             |
| 98                            | G2.3.4 1  | B             |
| 99                            | G2.4.38 1 | B             |
| 100                           | G2.4.4 1  | B             |
| <b>SECTION 1 ( 100 items)</b> |           | <b>100.00</b> |

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# **NRC SRO REFERENCES**

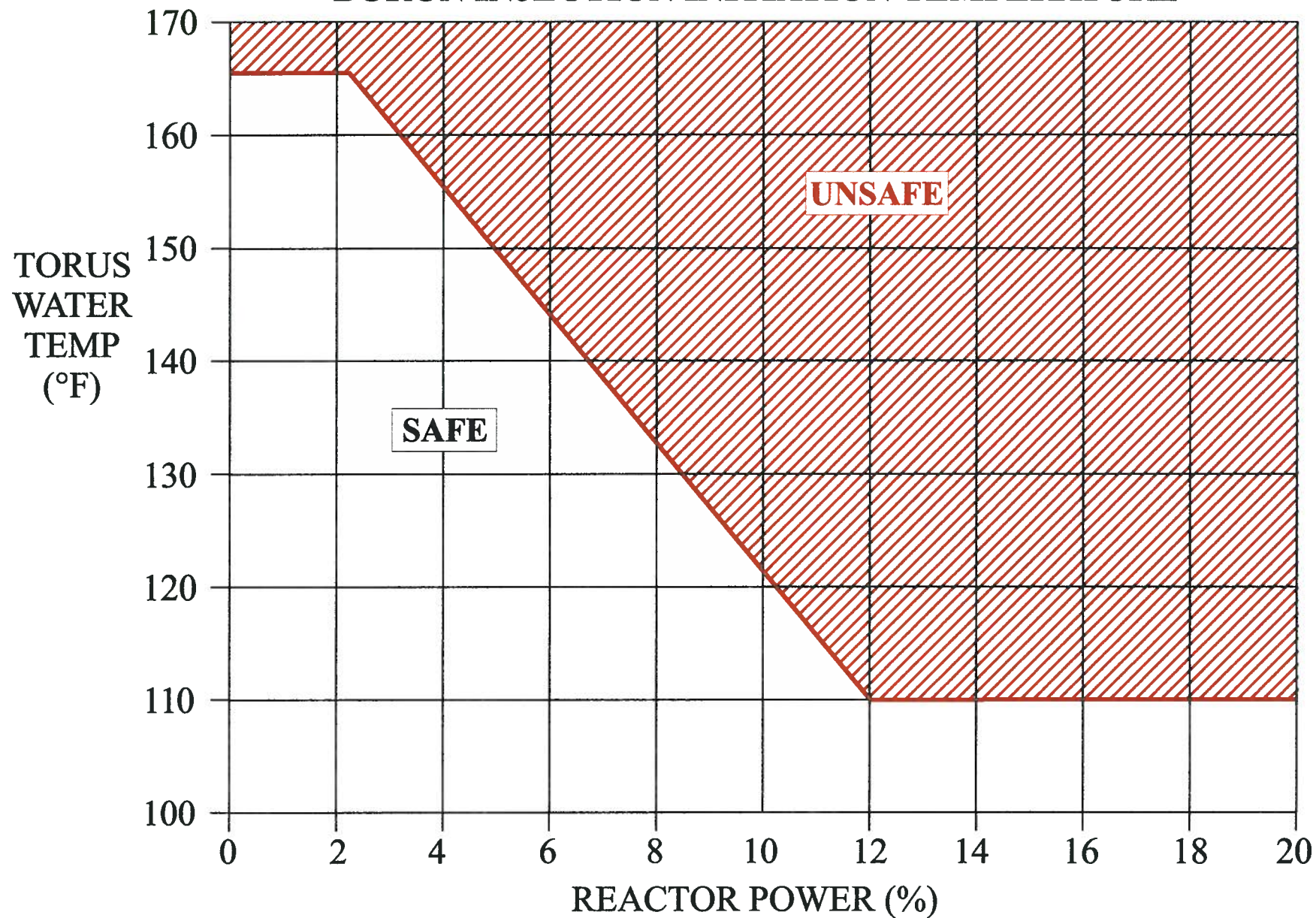
## **SRO EXAM**

1. *Unit 2 EOP Graph 5, BIIT Curve*
2. *Unit 2 EOP Graph 12A, RHR NPSH Limit, (Torus Water Level At or Above 146") & Unit 2 EOP Graph 12B, RHR NPSH Limit, (Torus Water Level Below 146")*
3. *Unit 1 TS 3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation & Unit 1 TS 3.5.1 Emergency Core Cooling System (ECCS)*
4. *Unit 2 EOP Graph 7, Pressure Suppression Pressure*
5. *Table 6 of 34AB-T22-003-1, Secondary Containment Control & Unit 1 TS 3.7.4 Main Control Room Environmental Control (MCREC) System*
6. *NMP-EP-110-GL02, Figure 1 – Fission Product Barrier Matrix*
7. *Unit 1 EOP Graph 8 Drywell Spray Initiation Curve*
8. *Unit 1 EOP Graph 5 Boron Injection Initiation Temperature Curve*
9. *NMP-EP-110-GL02, "Emergency Classification & Initial Actions", Attachment 2 "Hot" Initiating Condition Matrix Evaluation Chart, AC Power Section*

## GRAPH 5

## UNIT 2

### BORON INJECTION INITIATION TEMPERATURE

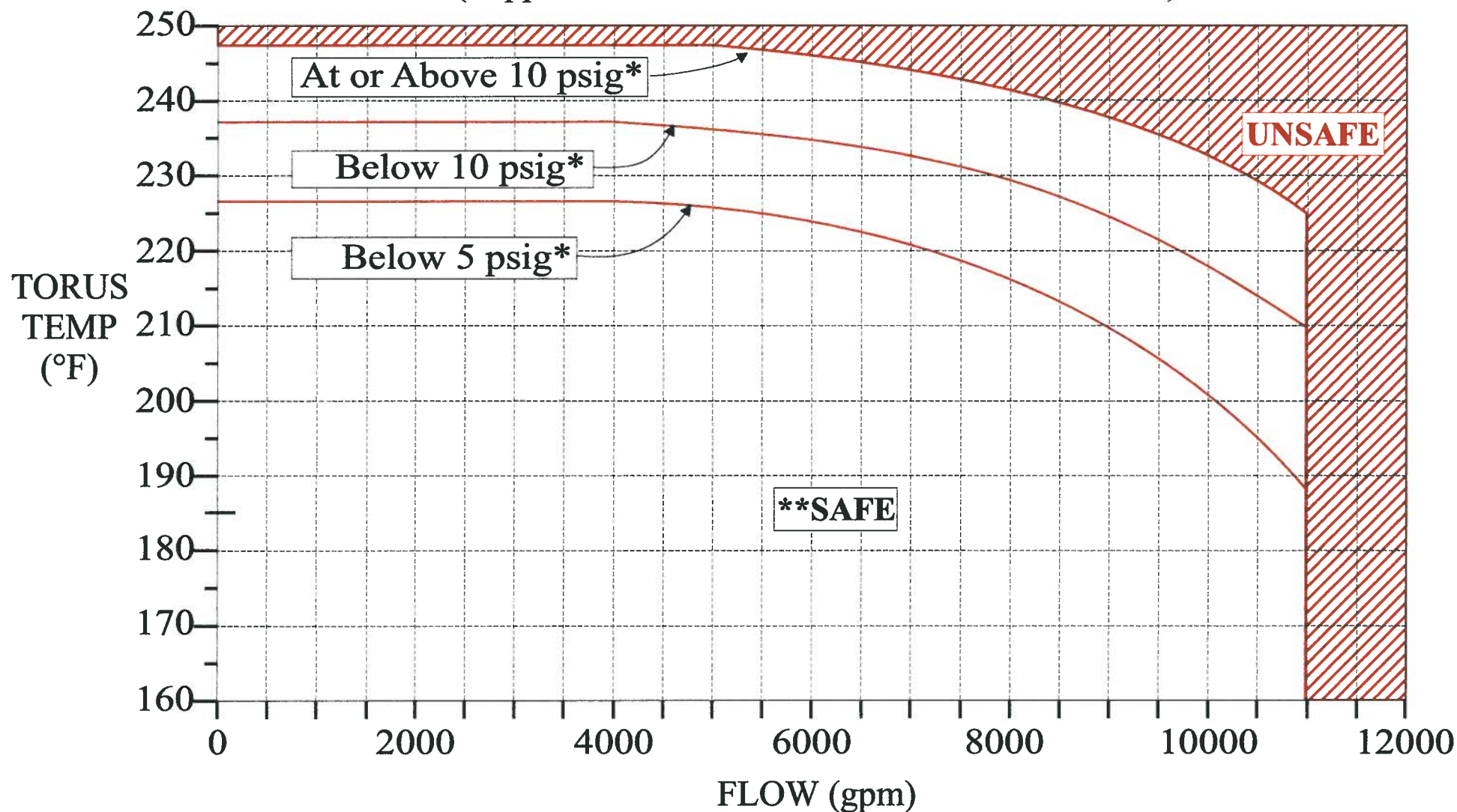


NOTE: May use SPDS Emergency Displays in place of this Graph.

## GRAPH 12A

## UNIT 2

RHR Pump NPSH Limit  
(Suppression Pool Water Level At or Above 146")



NOTE: May use SPDS Emergency Displays in place of this Graph.

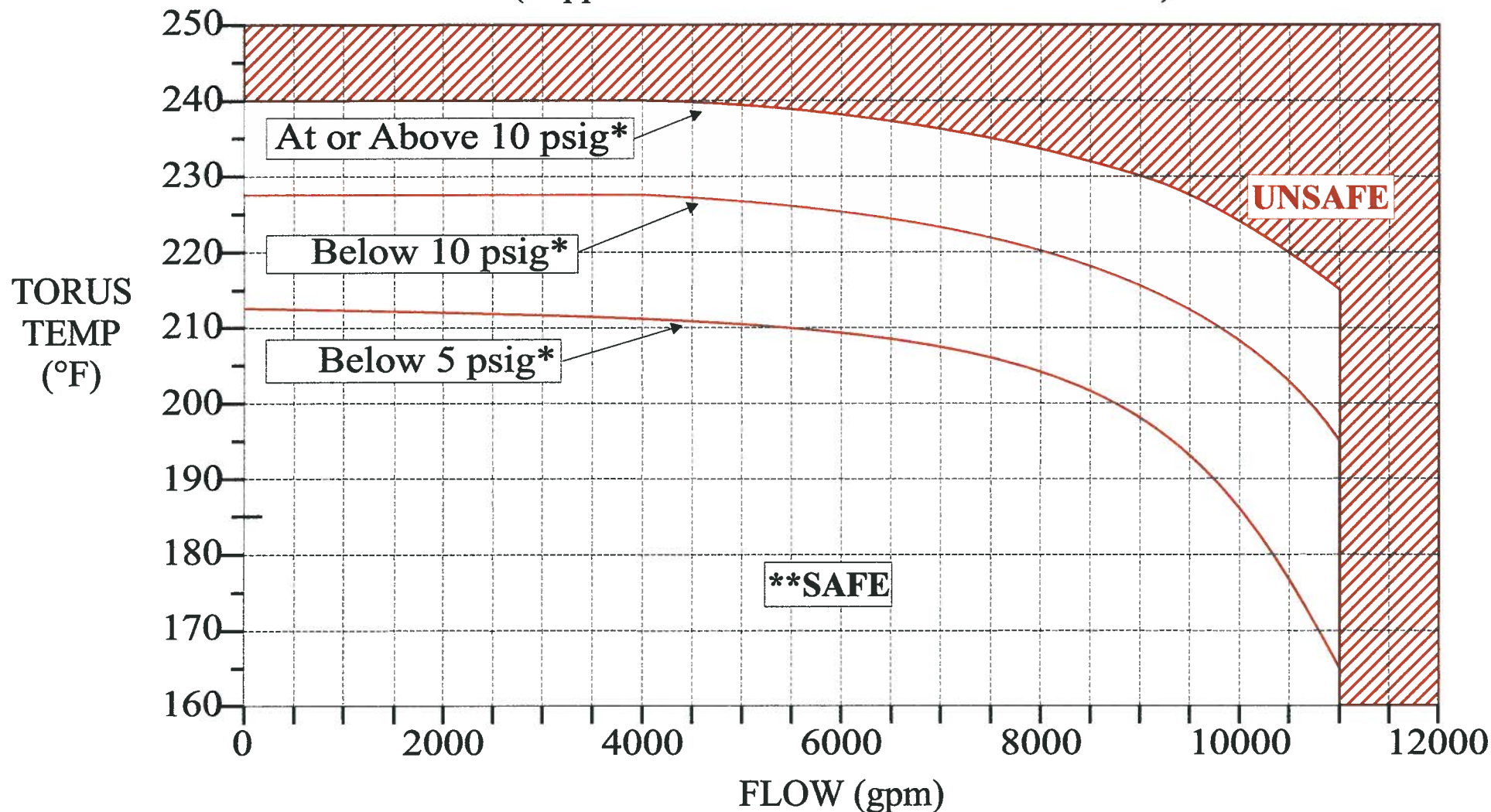
\* Suppression Chamber Pressure.

\*\* Safe operating region is below the applicable pressure line.

## GRAPH 12B

## UNIT 2

RHR Pump NPSH Limit  
(Suppression Pool Water Level Below 146")



NOTE: May use SPDS Emergency Displays in place of this Graph.

\* Suppression Chamber Pressure.

\*\* Safe operating region is below the applicable pressure line.

3.3 INSTRUMENTATION

3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

LCO 3.3.5.1            The ECCS instrumentation for each Function in Table 3.3.5.1-1 shall be OPERABLE.

APPLICABILITY:        According to Table 3.3.5.1-1.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each channel.  
-----

| CONDITION  | REQUIRED ACTION   | COMPLETION TIME   |
|--|---|---|
| A. One or more channels inoperable.                                      | A.1 Enter the Condition referenced in Table 3.3.5.1-1 for the channel.  | Immediately   |
| B. As required by Required Action A.1 and referenced in Table 3.3.5.1-1. | <div>B.1<div>-----NOTES-----<div>1. Only applicable in MODES 1, 2, and 3.</div><div>2. Only applicable for Functions 1.a, 1.b, 2.a, and 2.b.</div></div><div>Declare supported feature(s) inoperable.</div><div>AND</div></div> | <div>1 hour from discovery of loss of initiation capability for feature(s) in both divisions</div> <div>(continued)</div> |



ACTIONS

| CONDITION  | REQUIRED ACTION  | COMPLETION TIME   |
|--|--|---|
| B. (continued)   | <p>B.2</p> <p>-----NOTE-----<br/>Only applicable for<br/>Functions 3.a and 3.b.<br/>-----</p> <p>Declare High Pressure<br/>Coolant Injection<br/>(HPCI) System<br/>inoperable.</p>   | 1 hour from discovery<br>of loss of HPCI<br>initiation capability                                   |
|  | <p><u>AND</u></p> <p>B.3 Place channel in trip.</p>  |   |
|  | 24 hours   |   |
| C. As required by Required<br>Action A.1 and referenced<br>in Table 3.3.5.1-1. | <p>C.1</p> <p>-----NOTES-----<br/>1. Only applicable in<br/>MODES 1, 2,<br/>and 3.<br/><br/>2. Only applicable for<br/>Functions 1.c, 2.c,<br/>2.d, and 2.f.<br/>-----</p> <p>Declare supported<br/>feature(s) inoperable.</p> | 1 hour from discovery<br>of loss of initiation<br>capability for<br>feature(s) in both<br>divisions |
|  | <p><u>AND</u></p> <p>C.2 Restore channel to<br/>OPERABLE status.</p>   |   |
|  | 24 hours   |   |

(continued)

ACTIONS (continued)

| CONDITION  | REQUIRED ACTION   | COMPLETION TIME   |
|--|---|---|
| D. As required by Required Action A.1 and referenced in Table 3.3.5.1-1. | D.1 <u>-----NOTE-----</u><br>Only applicable if HPCI pump suction is not aligned to the suppression pool.<br><u>-----</u><br><br>Declare HPCI System inoperable.                            | 1 hour from discovery of loss of HPCI initiation capability                             |
|  | <u>AND</u>  |   |
|  | D.2.1 Place channel in trip.  | 24 hours  |
|  | <u>OR</u><br><br>D.2.2 Align the HPCI pump suction to the suppression pool.   | 24 hours  |
| E. As required by Required Action A.1 and referenced in Table 3.3.5.1-1. | E.1 <u>-----NOTES-----</u><br>1. Only applicable in MODES 1, 2, and 3.<br><br>2. Only applicable for Functions 1.d and 2.g.<br><u>-----</u><br><br>Declare supported feature(s) inoperable. | 1 hour from discovery of loss of initiation capability for subsystems in both divisions |
|  | <u>AND</u>  |   |
|  | E.2 Restore channel to OPERABLE status.   | 7 days  |

(continued)

ACTIONS (continued)

| CONDITION   | REQUIRED ACTION  | COMPLETION TIME  |
|---|--|--|
| F. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.                    | F.1 Declare Automatic Depressurization System (ADS) valves inoperable. | 1 hour from discovery of loss of ADS initiation capability in both trip systems  |
|   | <u>AND</u><br>F.2 Place channel in trip.                               | 96 hours from discovery of inoperable channel concurrent with HPCI or reactor core isolation cooling (RCIC) inoperable<br><br><u>AND</u><br>8 days |
| G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.                    | G.1 Declare ADS valves inoperable.                                     | 1 hour from discovery of loss of ADS initiation capability in both trip systems  |
|   | <u>AND</u><br>G.2 Restore channel to OPERABLE status.                  | 96 hours from discovery of inoperable channel concurrent with HPCI or RCIC inoperable<br><br><u>AND</u><br>8 days                                  |
| H. Required Action and associated Completion Time of Condition B, C, D, E, F, or G not met. | H.1 Declare associated supported feature(s) inoperable.                | Immediately  |



Table 3.3.5.1-1 (page 1 of 5)  
Emergency Core Cooling System Instrumentation

| FUNCTION   | APPLICABLE<br>MODES<br>OR OTHER<br>SPECIFIED<br>CONDITIONS | REQUIRED<br>CHANNELS<br>PER<br>FUNCTION | CONDITIONS<br>REFERENCED<br>FROM<br>REQUIRED<br>ACTION A.1 |
|--|--|---|--|
| 1. Core Spray System   |  |   |  |
| a. Reactor Vessel<br>Water Level - Low<br>Low Low, Level 1           | 1, 2, 3,<br>4(a), 5(a)                                     | 4(b)                                    | B  |
| b. Drywell Pressure -<br>High  | 1, 2, 3  | 4(b)                                    | B  |
| c. Reactor Steam<br>Dome Pressure -<br>Low (Injection<br>Permissive) | 1, 2, 3  | 4                                       | C  |
|  | 4(a), 5(a)   | 4                                       | B  |
| d. Core Spray Pump<br>Discharge Flow -<br>Low (Bypass)               | 1, 2, 3,<br>4(a), 5(a)                                     | 1 per<br>subsystem                      | E  |

### 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

#### 3.5.1 ECCS - Operating

LCO 3.5.1 Each ECCS injection/spray subsystem and the Automatic Depressurization System (ADS) function of six of seven safety/relief valves shall be OPERABLE.

APPLICABILITY: MODE 1,  
MODES 2 and 3, except high pressure coolant injection (HPCI) and ADS valves are not required to be OPERABLE with reactor steam dome pressure  $\leq$  150 psig.

#### ACTIONS

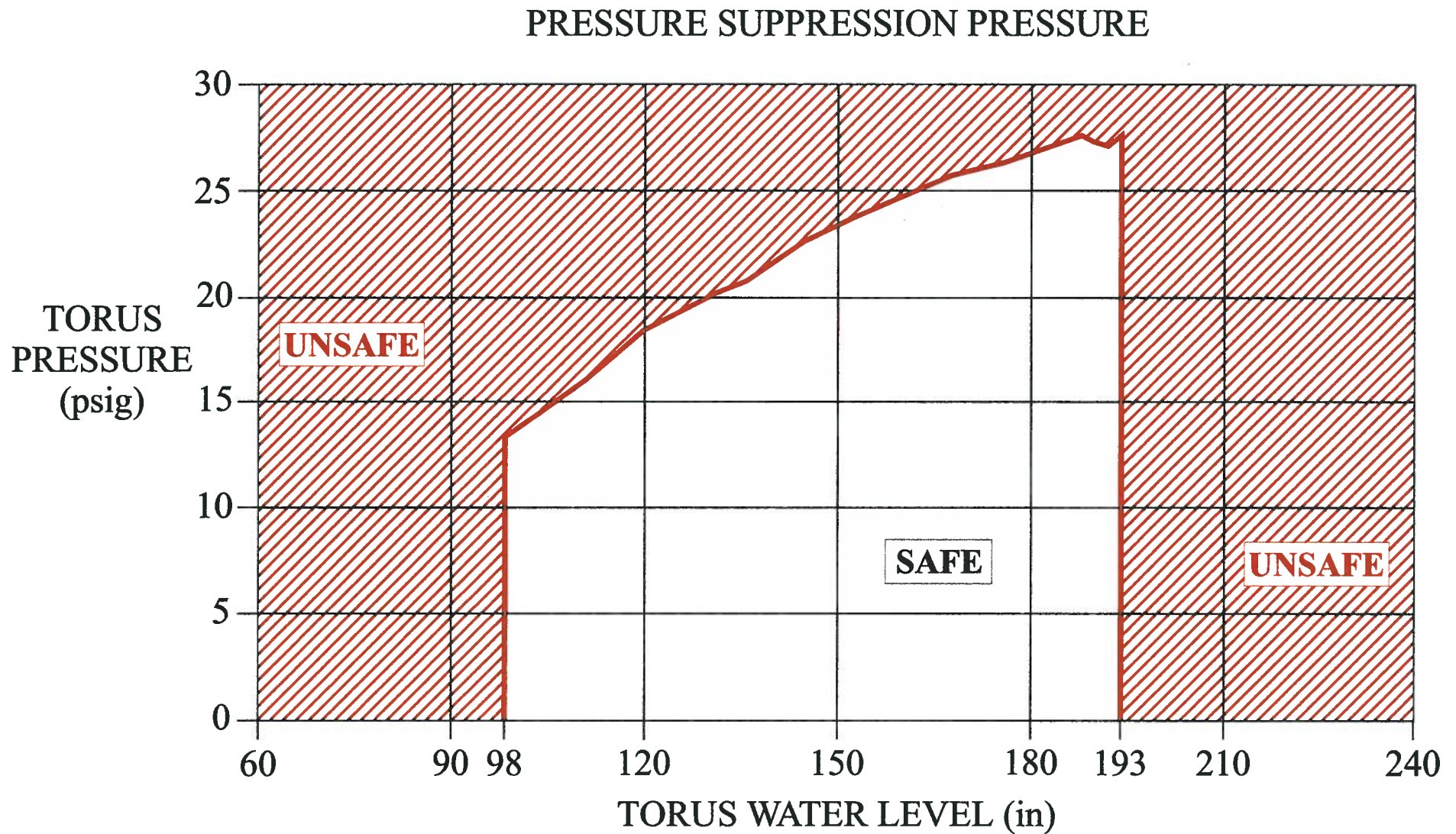
-----NOTE-----  
LCO 3.0.4.b is not applicable to HPCI.  
-----

| CONDITION   | REQUIRED ACTION   | COMPLETION TIME |
|---|---|-----------------|
| A. One low pressure ECCS injection/spray subsystem inoperable.            | A.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status. | 7 days          |
| B. Required Action and associated Completion Time of Condition A not met. | B.1 Be in MODE 3.   | 12 hours        |
|   | <u>AND</u><br>B.2 Be in MODE 4.   | 36 hours        |
| C. HPCI System inoperable.  | C.1 Verify by administrative means RCIC System is OPERABLE.                 | 1 hour          |
|   | <u>AND</u><br>C.2 Restore HPCI System to OPERABLE status.                   | 14 days         |

(continued)

ACTIONS (continued)

| CONDITION   | REQUIRED ACTION  | COMPLETION TIME                 |
|---|--|---------------------------------|
| <p>D. HPCI System inoperable.</p> <p><u>AND</u></p> <p>One low pressure ECCS injection/spray subsystem is inoperable.</p>                                 | <p>D.1 Restore HPCI System to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.</p> | <p>72 hours</p> <p>72 hours</p> |
| <p>E. Two or more ADS valves inoperable.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition C or D not met.</p>          | <p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Reduce reactor steam dome pressure to <math>\leq 150</math> psig.</p>                                | <p>12 hours</p> <p>36 hours</p> |
| <p>F. Two or more low pressure ECCS injection/spray subsystems inoperable.</p> <p><u>OR</u></p> <p>HPCI System and two or more ADS valves inoperable.</p> | <p>F.1 Enter LCO 3.0.3.</p>  | <p>Immediately</p>              |



NOTE: May use SPDS Emergency Displays in place of this Graph.

| AREA RADIATION MONITORS<br>on 1H11-P600, 1D21-P600 |     |      |
|--|-----|------|
| <b><u>REFUEL FLOOR AREA</u></b>                    |     |      |
| 1 Reactor head laydown area (1D21-K601A)           | 50  | 1000 |
| 2 Refueling Floor Stairway (1D21-K601B)            | 50  | 1000 |
| 3 Refueling Floor (1D21-K601D)                     | 50  | 1000 |
| 4 Drywell Shield Plug (1D21-K601E)                 | 50  | 1000 |
| 5 Spent Fuel Pool & New Fuel Storage (1D21-K601M)  | 50  | 1000 |
| <b><u>203' ELEVATION AREA</u></b>                  |     |      |
| 6 RB 203' Working Area (1D21-K601X)                | 50  | 1000 |
| <b><u>185' ELEVATION AREA</u></b>                  |     |      |
| 7 Spent Fuel Pool Demin. Equip (1D21-K601C)        | 150 | 1000 |
| 8 Fuel Pool Demin. Panel (1D21-K617)               | 50  | 100  |
| <b><u>158' ELEVATION AREA</u></b>                  |     |      |
| 9 RB 158' Working Area (1D21-K601K)                | 50  | 1000 |
| 10 Rx Wtr Sample Rack Area 158' (1D21-K601L)       | 50  | 1000 |
| <b><u>130' ELEVATION NORTH AREA</u></b>            |     |      |
| 11 TIP Area (1D21-K601F)                           | 50  | 1000 |
| 12 North CRD HCU (1D21-K601P)                      | 50  | 1000 |
| 13 TIP Probe Drives Area (1D21-K601U)              | 100 | 1000 |

### 3.7 PLANT SYSTEMS

#### 3.7.4 Main Control Room Environmental Control (MCREC) System

LCO 3.7.4 Two MCREC subsystems shall be OPERABLE.

NOTE

The main control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, and 3,  
During movement of irradiated fuel assemblies in the secondary  
containment,  
During CORE ALTERATIONS,  
During operations with a potential for draining the reactor vessel  
(OPDRVs).

#### ACTIONS

| CONDITION   | REQUIRED ACTION                                       | COMPLETION TIME |
|---|---|-----------------|
| A. One MCREC subsystem inoperable.  | A.1 Restore MCREC subsystem to OPERABLE status.       | 7 days          |
| B. Two MCREC subsystems inoperable due to inoperable control room boundary in MODE 1, 2, or 3.    | B.1 Restore control room boundary to OPERABLE status. | 24 hours        |
| C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3. | C.1 Be in MODE 3.                                     | 12 hours        |
|   | <u>AND</u><br>C.2 Be in MODE 4.                       | 36 hours        |

(continued)

ACTIONS (continued)




| CONDITION   | REQUIRED ACTION  | COMPLETION TIME |
|---|--|-----------------|
| D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs. | -----NOTE-----<br>LCO 3.0.3 is not applicable.                                     |                 |
|   | D.1 Place OPERABLE MCREC subsystem in pressurization mode.                         | Immediately     |
|   | <u>OR</u>  |                 |
|   | D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment. | Immediately     |
|   | <u>AND</u>   |                 |
|   | D.2.2 Suspend CORE ALTERATIONS.  | Immediately     |
|   | <u>AND</u>   |                 |
|   | D.2.3 Initiate action to suspend OPDRVs.   | Immediately     |
| E. Two MCREC subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.   | E.1 Enter LCO 3.0.3.   | Immediately     |

(continued)

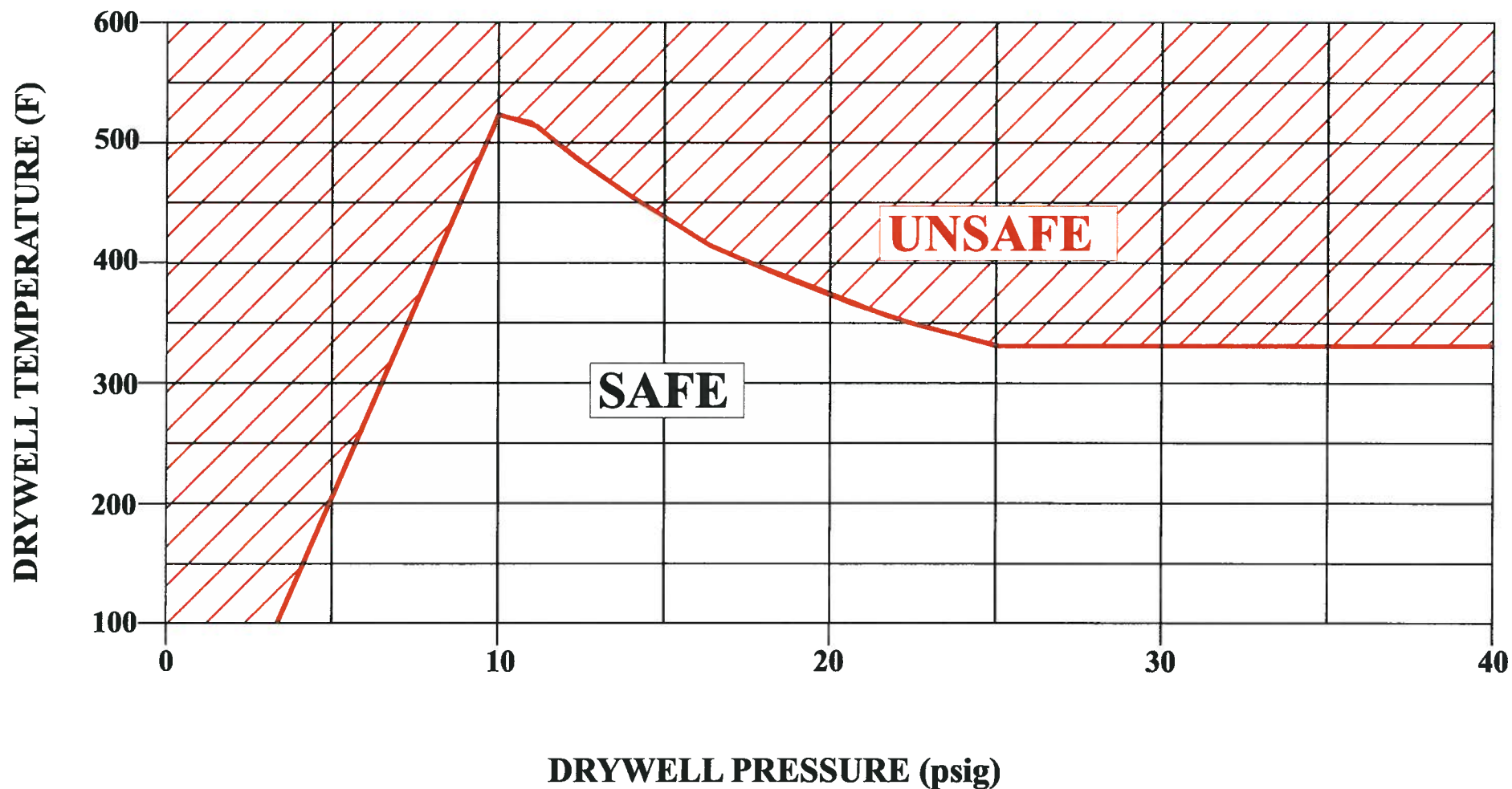
ACTIONS (continued)

| CONDITION   | REQUIRED ACTION   | COMPLETION TIME |
|---|---|-----------------|
| F. Two MCREC subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs. | <p>-----NOTE-----<br/>LCO 3.0.3 is not applicable.<br/>-----</p>  |                 |
|   | <p>F.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> | Immediately     |
|   | <p>F.2 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p>  | Immediately     |
|   | <p>F.3 Initiate action to suspend OPDRVs.</p>   | Immediately     |



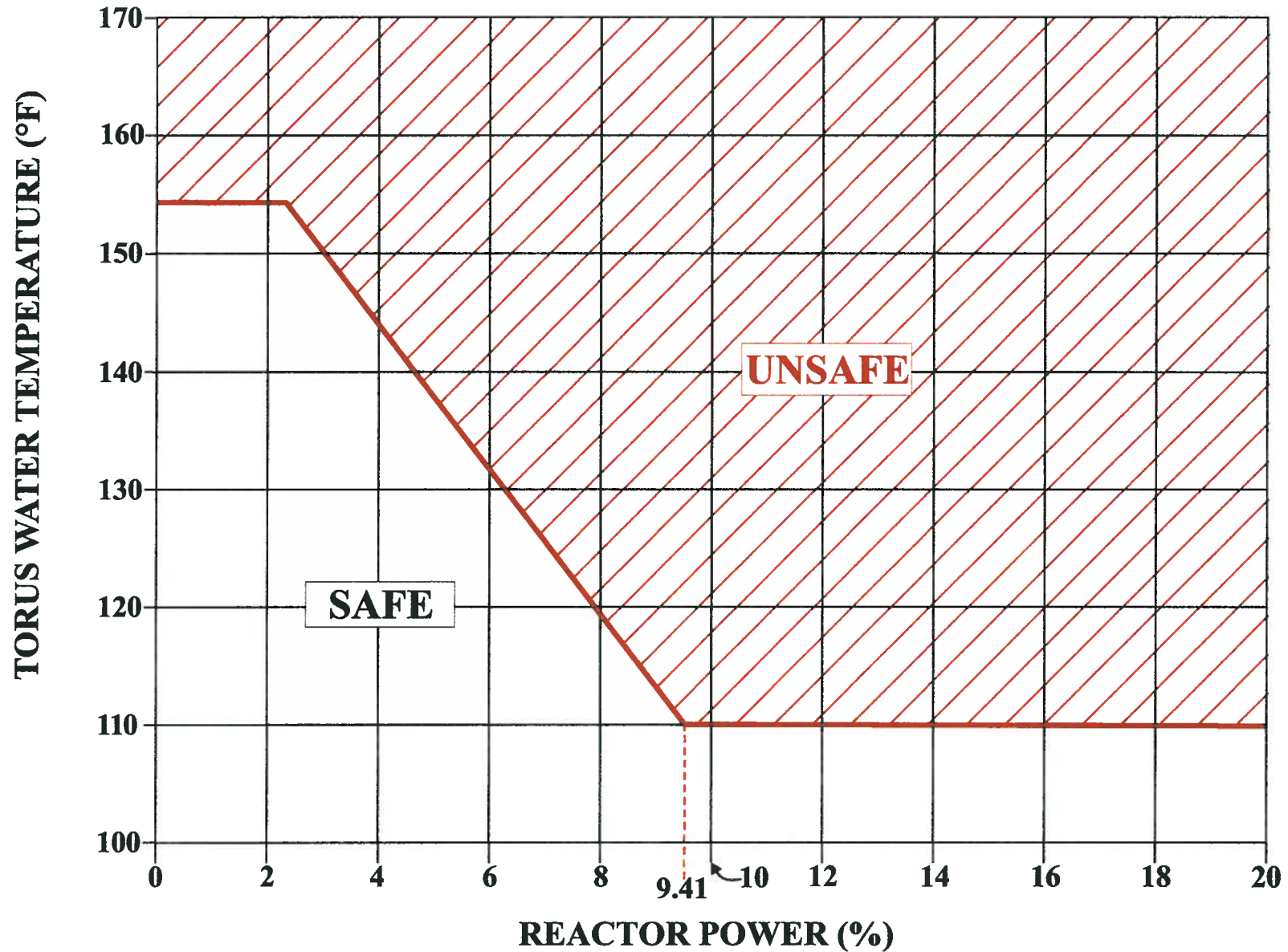
| RCS Barrier (Pg. 39)  |   |
|---|---|
| Loss  | Potential Loss  |
| <b>1. Drywell Pressure (Pg. 39)</b><br>Pressure greater than 1.85 PSIG  |   |
| <b>2. Reactor Vessel Water Level (Pg. 39)</b><br>Level less than -155 inches    |   |
| <b>3. RCS Leak Rate (Pg. 39)</b><br>Unisolable Main Steamline break as indicated by the failure of both MSIVs in any one line to close<br><b>AND</b><br>A. High MSL Flow<br><b>OR</b><br>B. High Steam Tunnel Temperature annunciators<br><b>OR</b><br>C. Turbine Building MSL leak annunciator<br><b>OR</b><br>D. Direct report of steam release | <b>3. RCS Leak Rate (Pg. 39)</b><br>RCS leakage GREATER THAN 50 gpm inside the drywell<br><b>OR</b><br>Unisolable primary system leakage outside drywell as indicated by Secondary Containment operating temperatures or radiation levels above Max. Normal Operating Values (SC - Secondary Containment Control Flowchart – Table 4 & Table 6)  |
| <b>4. Drywell Radiation Monitoring (Pg. 39)</b><br>DWRRM greater than 138 R/hr   |   |
| <b>5. Other Indications (Pg. 40)</b><br>Drywell Post LOCA Monitor 4.71E+04 cpm  |   |
| <b>6. Emergency Director Judgment (Pg. 40)</b><br>Judgment by the ED that the RCS Barrier is lost. Consider conditions not addressed and inability to determine the status of the RCS Barrier   | <b>6. Emergency Director Judgment (Pg. 40)</b><br>Judgment by the ED that the RCS Barrier is potentially lost. Consider conditions not addressed and inability to determine the status of the RCS Barrier.  |

## DRYWELL SPRAY INITIATION LIMIT



NOTE: May use SPDS Emergency Displays in place of this Graph.

## BORON INJECTION INITIATION TEMPERATURE



NOTE: May use SPDS Emergency displays in place of this Graph.

## AC/DC POWER

**SG1** - Prolonged Loss of All Offsite Power **AND**  
Prolonged Loss of All Onsite AC Power to Essential  
Busses (Pg. 44)

1. Loss of all AC power indicated by:
  - a. Loss of power to or from Startup Auxiliary Transformers (SAT) 1/2C and 1/2D resulting in loss of all off-site electrical power to 4160 VAC Emergency Buses 1/2E, 1/2F, and 1/2G for greater than 15 minutes

**AND**

- b. Failure of emergency diesel generators to supply power to emergency busses.

**AND EITHER**

2. Restoration of at least one 4160 VAC Emergency Bus, 1/2E, 1/2F, or 1/2G, within 4 hours of time of loss is **NOT** likely.

**OR**

3. Fuel Clad Barrier Evaluation indicates continuing degradation (Loss or Potential Loss) of core cooling

**SS1** - Loss of All Offsite Power **AND** Loss of All Onsite AC Power to Essential Busses (Pg. 48)

1. Loss of all AC power indicated by:
  - a. Loss of power to or from Startup Auxiliary Transformers (SAT) 1/2C and 1/2D resulting in loss of all off-site electrical power to 4160 VAC Emergency Buses 1/2E, 1/2F, and 1/2G for greater than 15 minutes  
**AND**
  - b. Failure of diesel generators to supply power to emergency busses.  
**AND**
  - c. Restoration of at least one 4160 VAC Emergency bus, 1/2E, 1/2F, or 1/2G, has **NOT** occurred within 15 minutes of time of loss of all AC power

**SS3** - Loss of All Vital DC Power (Pg. 51)

1. Loss of Vital DC power to 125/250 VDC Bus 1/2R22-S016 and 1/2R22-S017 indicated by bus voltage indications less than 105/210 VDC for greater than 15 minutes.

**SA5** - AC power capability to Essential Busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in STATION BLACKOUT. (Pg. 57)

1. a. AC power capability to 4160 VAC Emergency Buses 1/2E, 1/2F, and 1/2G reduced to a single power source for greater than 15 minutes

**AND**

b. ANY additional single failure will result in station blackout.

# HATCH 2013-301 ILT-08 SRO NRC EXAM

Answers

| #  | ID              | Points | 0 |
|----|-----------------|--------|---|
| 1  | 201003A2.09 1   | 1.00   | A |
| 2  | 203000K6.02 1   | 1.00   | C |
| 3  | 204000K1.15 1   | 1.00   | A |
| 4  | 205000K5.02 1   | 1.00   | A |
| 5  | 205000K5.03 1   | 1.00   | D |
| 6  | 206000A1.08 1   | 1.00   | B |
| 7  | 209001K3.01 1   | 1.00   | A |
| 8  | 209001K3.03 1   | 1.00   | B |
| 9  | 211000K2.02 1   | 1.00   | A |
| 10 | 212000A3.02 1   | 1.00   | B |
| 11 | 212000A4.15 1   | 1.00   | A |
| 12 | 215001A4.03 1   | 1.00   | A |
| 13 | 215002G2.4.4 1  | 1.00   | D |
| 14 | 215003K4.05 1   | 1.00   | B |
| 15 | 215004K1.02 1   | 1.00   | B |
| 16 | 215005A4.06 1   | 1.00   | D |
| 17 | 217000K5.06 1   | 1.00   | C |
| 18 | 218000K3.01 1   | 1.00   | B |
| 19 | 223001A3.05 1   | 1.00   | A |
| 20 | 223002A2.11 1   | 1.00   | C |
| 21 | 226001K6.04 1   | 1.00   | B |
| 22 | 233000K4.06 1   | 1.00   | A |
| 23 | 239001K5.05 1   | 1.00   | B |
| 24 | 239002K2.01 1   | 1.00   | A |
| 25 | 241000K3.03 1   | 1.00   | C |
| 26 | 245000K4.10 1   | 1.00   | C |
| 27 | 259002A4.08 1   | 1.00   | A |
| 28 | 261000A2.07 1   | 1.00   | A |
| 29 | 261000K1.03 1   | 1.00   | C |
| 30 | 262001K6.03 1   | 1.00   | D |
| 31 | 262002G2.4.4 1  | 1.00   | C |
| 32 | 263000A3.01 1   | 1.00   | C |
| 33 | 264000G2.2.42 1 | 1.00   | B |
| 34 | 268000A1.02 1   | 1.00   | B |
| 35 | 286000K2.02 1   | 1.00   | B |
| 36 | 295001AK2.06 1  | 1.00   | A |
| 37 | 295003AK1.02 1  | 1.00   | B |
| 38 | 295004G2.1.7 1  | 1.00   | B |
| 39 | 295005AK3.02 1  | 1.00   | D |
| 40 | 295006AA1.01 1  | 1.00   | B |
| 41 | 295009AK1.02 1  | 1.00   | C |
| 42 | 295010AA2.06 1  | 1.00   | B |
| 43 | 295012AK3.01 1  | 1.00   | D |
| 44 | 295013G2.4.18 1 | 1.00   | B |
| 45 | 295016AA2.07 1  | 1.00   | B |
| 46 | 295017AA1.05 1  | 1.00   | A |
| 47 | 295018AK3.06 1  | 1.00   | D |



Answers

| #  | ID              | Points | 0 |
|----|-----------------|--------|---|
| 48 | 295019AA2.02 1  | 1.00   | C |
| 49 | 295021G2.2.40 1 | 1.00   | D |
| 50 | 295023AA2.03 1  | 1.00   | C |
| 51 | 295024EA2.06 1  | 1.00   | A |
| 52 | 295025G2.1.27 1 | 1.00   | B |
| 53 | 295026EK3.04 1  | 1.00   | C |
| 54 | 295028EA1.03 1  | 1.00   | C |
| 55 | 295030EK1.02 1  | 1.00   | D |
| 56 | 295031EA1.05 1  | 1.00   | C |
| 57 | 295035EA1.01 1  | 1.00   | B |
| 58 | 295037EK2.12 1  | 1.00   | A |
| 59 | 295038EK1.01 1  | 1.00   | D |
| 60 | 300000A2.O1 1   | 1.00   | B |
| 61 | 300000K1.03 1   | 1.00   | B |
| 62 | 400000A1.01 1   | 1.00   | D |
| 63 | 500000EK2.07 1  | 1.00   | C |
| 64 | 600000AK1.01 1  | 1.00   | C |
| 65 | 700000AK2.03 1  | 1.00   | B |
| 66 | G2.1.1 1        | 1.00   | A |
| 67 | G2.1.8 1        | 1.00   | D |
| 68 | G2.1.20 1       | 1.00   | C |
| 69 | G2.2.21 1       | 1.00   | A |
| 70 | G2.2.22 1       | 1.00   | D |
| 71 | G2.2.36 1       | 1.00   | C |
| 72 | G2.3.11 1       | 1.00   | D |
| 73 | G2.3.13 1       | 1.00   | B |
| 74 | G2.4.16 1       | 1.00   | A |
| 75 | G2.4.5 1        | 1.00   | B |
| 76 | 201006A2.06 1   | 1.00   | B |
| 77 | 209001G2.4.49 1 | 1.00   | A |
| 78 | 215003A2.05 1   | 1.00   | A |
| 79 | 218000A2.05 1   | 1.00   | C |
| 80 | 261000A2.08 1   | 1.00   | A |
| 81 | 263000G2.4.8 1  | 1.00   | A |
| 82 | 290001A2.02 1   | 1.00   | A |
| 83 | 290003G2.4.4 1  | 1.00   | D |
| 84 | 295004AA2.02 1  | 1.00   | A |
| 85 | 295007AA2.01 1  | 1.00   | C |
| 86 | 295012G2.4.11 1 | 1.00   | D |
| 87 | 295016G2.2.37 1 | 1.00   | D |
| 88 | 295019G2.1.28 1 | 1.00   | D |
| 89 | 295023AA2.02 1  | 1.00   | B |
| 90 | 295024EA2.02 1  | 1.00   | C |
| 91 | 295032EA2.03 1  | 1.00   | D |
| 92 | 295037G2.4.49 1 | 1.00   | D |
| 93 | 700000AA2.07 1  | 1.00   | C |
| 94 | G2.1.3 1        | 1.00   | B |



Answers

| #                             | ID        | Points        | 0 |
|-------------------------------|-----------|---------------|---|
| 95                            | G2.1.36 1 | 1.00          | A |
| 96                            | G2.2.18 1 | 1.00          | B |
| 97                            | G2.2.39 1 | 1.00          | D |
| 98                            | G2.3.4 1  | 1.00          | B |
| 99                            | G2.4.38 1 | 1.00          | B |
| 100                           | G2.4.4 1  | 1.00          | B |
| <b>SECTION 1 ( 100 items)</b> |           | <b>100.00</b> |   |