U.S. Nuclear Regulatory Commission

Site-Specific RO Written Examination

Applicant Information	
Name:	
Date:	Facility/Unit: McGuire Nuclear Station
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. Examination papers will be collected 6 hours after the examination begins.

Applicant Certification

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

_____
Applicant's Signature

Results	
Examination Value	_____ Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent

1.	A	B	C	D	26.	A	B	C	D
2.	A	B	C	D	27.	A	B	C	D
3.	A	B	C	D	28.	A	B	C	D
4.	A	B	C	D	29.	A	B	C	D
5.	A	B	C	D	30.	A	B	C	D
6.	A	B	C	D	31.	A	B	C	D
7.	A	B	C	D	32.	A	B	C	D
8.	A	B	C	D	33.	A	B	C	D
9.	A	B	C	D	34.	A	B	C	D
10.	A	B	C	D	35.	A	B	C	D
11.	A	B	C	D	36.	A	B	C	D
12.	A	B	C	D	37.	A	B	C	D
13.	A	B	C	D	38.	A	B	C	D
14.	A	B	C	D	39.	A	B	C	D
15.	A	B	C	D	40.	A	B	C	D
16.	A	B	C	D	41.	A	B	C	D
17.	A	B	C	D	42.	A	B	C	D
18.	A	B	C	D	43.	A	B	C	D
19.	A	B	C	D	44.	A	B	C	D
20.	A	B	C	D	45.	A	B	C	D
21.	A	B	C	D	46.	A	B	C	D
22.	A	B	C	D	47.	A	B	C	D
23.	A	B	C	D	48.	A	B	C	D
24.	A	B	C	D	49.	A	B	C	D
25.	A	B	C	D	50.	A	B	C	D

51.	A	B	C	D
52.	A	B	C	D
53.	A	B	C	D
54.	A	B	C	D
55.	A	B	C	D
56.	A	B	C	D
57.	A	B	C	D
58.	A	B	C	D
59.	A	B	C	D
60.	A	B	C	D
61.	A	B	C	D
62.	A	B	C	D
63.	A	B	C	D
64.	A	B	C	D
65.	A	B	C	D
66.	A	B	C	D
67.	A	B	C	D
68.	A	B	C	D
69.	A	B	C	D
70.	A	B	C	D
71.	A	B	C	D
72.	A	B	C	D
73.	A	B	C	D
74.	A	B	C	D
75.	A	B	C	D

Question: 1

1 Pt Given the following:

- Due to an under-frequency relaying problem, all NCPs tripped causing a reactor trip
- The crew is performing the actions of ES-0.1 (Reactor Trip Response)
- NC System T-Hots are 575°F and slowly rising
- NC System T-Colds are 549°F and slowly lowering
- All S/G levels indicate 8% NR and rising slowly

Which ONE (1) of the following are action(s) required in accordance with ES-0.1 for this condition?

A. Throttle open steam dumps or raise CA flow until NC system T-Hots are stabilized.

B. Throttle open steam dumps or raise CA flow until NC system T-Ave is stable at or trending to 557°F.

C. Close steam dumps and throttle CA flow to minimize cooldown; maintain total feed flow greater than 450 GPM.

D. Close steam dumps and throttle CA flow as necessary to stabilize NC system T-Colds; no other restrictions apply.

Question: 2

1 Pt Given the following conditions on Unit 1:

- SI actuated due to a LOCA inside Containment
- "A" and "B" NI pumps are TRIPPED
- "A" and "B" NV pumps are TRIPPED
- NC system pressure is 250 PSIG
- All other equipment is running as designed
- Containment pressure is 8 PSIG
- E-0, Reactor Trip or Safety Injection has been implemented

Which ONE (1) of the following describes the required action and reason for the action with respect to the NC pumps?

A. Leave all NC pumps running to provide forced cooling flow of the NC system.

B. Leave all NC pumps running to prevent phase separation of NC system liquid.

C. Stop all NC pumps to prevent mechanical damage to the pump and motor.

D. Stop all NC pumps to minimize fluid mass loss out of the break.

Question: 3

1 Pt Given the following conditions:

- Unit 1 is operating at 100% RTP
- AP-008 (Malfunction of NC Pump) has been implemented due to a seal malfunction on 1B NC pump

Which ONE (1) of the following indicates that the failure is the 1B NC pump #2 Seal?

A.
- #1 Seal Leak off flow - GOING UP
- NC Pump number 2 Seal Standpipe HIGH level alarm - LIT

B.
- #1 Seal Leak off flow - GOING UP
- NC Pump number 2 Seal Standpipe LOW level alarm - LIT

C.
- #1 Seal Leak off flow - GOING DOWN
- NC Pump number 2 Seal Standpipe LOW level alarm - LIT

D.
- #1 Seal Leak off flow - GOING DOWN
- NC Pump number 2 Seal Standpipe HIGH level alarm - LIT

Question: 4

1 Pt Given the following:

- A startup is in progress on Unit 2 following refueling
- NC system is solid with one NC pump in service
- SU-8 (Heatup To 200°F) is in progress
- LTOP is in service
- NC system pressure is 360 PSIG

Which ONE (1) of the following describes how bulk non-condensable gases are removed from the NC system prior to forming a bubble in the Pressurizer?

A. Notify Primary Chemistry to add Hydrazine.

B. Cycle the Reactor Vessel Head vents.

C. Vent the Volume Control Tank.

D. Cycle Pressurizer PORVs.

Question: 5

1 Pt Given the following:

- Unit 2 is operating at 100% RTP
- Rod control in manual

Which ONE (1) of the following will cause the Channel 2 OTΔT trip setpoint to decrease?

A. N-42 upper detector fails high.

B. Auctioneered high T-ave fails high.

C. NC system wide range pressure channel fails low.

D. Power reduction to 50% with normal pressure and temperature.

Question: 6

1 Pt

Unit 1 operators are responding to a LOCA in E-0.

Given the following conditions:

- The OATC is performing supplementary action steps in E-0.
- The 2nd RO is busy manually controlling feedwater flow to the SGs.
- An alarm annunciates on the electrical relay back panel behind the main control boards (1AD11-E8, Transfer Trip System B Trouble).

What is the correct response by the RO who is the OATC in accordance with OMP 2-2?

A. The OATC can investigate the alarm because the surveillance area does not apply during EOPs.

B. The OATC can investigate the alarm because the electrical relay panel is within the OATC defined surveillance area.

C. The OATC must remain within the surveillance area. The alarm should not be investigated until another operator is available.

D. The OATC is allowed to momentarily leave the surveillance area to investigate the alarm in the event of an emergency affecting the safety of operations.

Question: 7

1 Pt

Given the following:

- Unit 1 was operating at 100% RTP
- S/G 1B steam line breaks inside Containment
- Containment pressure is currently 4.0 PSIG

Which ONE (1) of the following correctly describes CF system indications on the Main Control Board as a result of the above conditions?

A. A and B CF Pump Turbine Tripped annunciators - LIT
1CF-2 and 1CF-5 (CF Pump Discharge valves) indicate CLOSE

B. A and B CF Pump Turbine Tripped annunciators - LIT
1CF-2 and 1CF-5 (CF Pump Discharge valves) indicate OPEN

C. A and B CF Pump Turbine speed indications - 2800 RPM
1CF-2 and 1CF-5 (CF Pump Discharge valves) indicate CLOSE

D. A and B CF Pump Turbine speed indications - 2800 RPM
1CF-2 and 1CF-5 (CF Pump Discharge valves) indicate OPEN

Question: 8

1 Pt A Safety Injection due to a stuck open Pressurizer Safety valve has occurred.

Which ONE (1) of the following describes an indication which will be adversely affected by this accident condition and the reason the indication is affected?

A. Subcooling.
Voiding in the reactor vessel head causes inaccurate CET input to the subcooling monitor.

B. Pzr level.
Voiding in the reactor vessel head forces water out of the reactor vessel into the Pressurizer.

C. Subcooling.
Rapid vapor space depressurization causes inaccurate pressure input to the subcooling monitor.

D. Pzr level.
Rapid vapor space depressurization results in Pzr level reference leg flashing.

Question: 9

1 Pt

Unit 2 is responding to a LOCA and the operators have reached the step of ES-1.2 (Post LOCA Cooldown and Depressurization) which requires isolating cold leg accumulators.

Which ONE (1) of the following describes why the Cold Leg Accumulators are isolated at this step?

A. To prevent injecting the CLA nitrogen bubble into the reactor and creating a hard bubble in the Pressurizer.

B. Ensures that NC system pressure can be reduced to below ND pump shutoff head, and further Cold Leg Accumulator injection will not occur.

C. Ensures that the inventory contained in the CLA's is available should the need arise to recover core cooling later in the procedure.

D. To prevent CLA injection when the NC system depressurizes, resulting in thermal stress and PTS concerns from the cold water on the reactor vessel.

Question: 10

1 Pt Which of the following best describes the Priority Mode of Diesel Sequencer operation?

A. Actuated by a Blackout signal and begins sequencing if bus voltage ONLY is greater than minimum required.

B. Actuated by a Blackout signal and begins sequencing if bus voltage AND frequency are greater than minimum required.

C. Actuated by a Safety Injection signal and begins sequencing if bus voltage ONLY is greater than minimum required.

D. Actuated by a Safety Injection signal and begins sequencing if bus voltage AND frequency are greater than minimum required.

Question: 11

1 Pt Given the following conditions:

- The crew has entered FR-H.1 (Response to Loss of Secondary Heat Sink) due to a loss of inventory in the S/Gs and failure of the CA pumps to start

Time	1400	1410	1420	1430
S/G 1A WR [%]	43	37	30	26
S/G 1B WR [%]	41	32	25	20
S/G 1C WR [%]	42	34	29	25
S/G 1D WR [%]	40	33	26	21
Total feed flow [GPM]	0	0	0	0
Cont press [PSIG]	0.75	2.1	3.2	2.8

Which ONE (1) of the following is the EARLIEST time (if any) that the crew would be required to initiate NC system Feed and Bleed based on plant conditions?

A. Feed and Bleed is not required.

B. 1410

C. 1420

D. 1430

Question: 12

1 Pt Given the following plant conditions:

- A reactor trip has occurred on Unit 1 as a result of a Loss of Offsite Power (LOOP)
- 1B D/G has started and loaded normally
- 1A D/G did not start and attempts to start it have been unsuccessful
- The operating crew has entered ES-0.2 (Natural Circulation Cooldown)
- The crew is preparing to start a cooldown and depressurization using natural circulation

Based on the conditions above, the required SUBCOOLING MARGIN during the cooldown and depressurization is __(1)__ based on __(2)__.

A. (1) 50°F
(2) preventing void formation in the reactor vessel head.

B. (1) 50°F
(2) providing adequate thermal driving head for natural circulation.

C. (1) 100°F
(2) preventing void formation in the reactor vessel head.

D. (1) 100°F
(2) providing adequate thermal driving head for natural circulation.

Question: 13

1 Pt

Given the following:

- A BLACKOUT has occurred on 2ETB
- D/G 2B failed to start due to an 86N relay actuation
- Annunciator Panel 2AD-11-F4 (Battery EVCD Undervoltage) is in alarm

Per AP-15 (Loss of Vital or Aux Control Power) which ONE (1) of the following addresses the Battery EVCD undervoltage condition?

A. Cross tie EVDD to EVDB.

B. Align Battery Charger EVCS to Battery EVCD.

C. Swap Battery Charger Connection box to 1EMXB.

D. Swap Battery Charger Connection box to 1EMXH.

Question: 14

1 Pt Given the following on Unit 1:

- 1KC-132 (L/D HX Cooling Water Control Valve) has failed
- LD HX outlet temperature is 115°F and increasing

If LD Hx outlet temperature reaches __(1)__ 1NV-127A (LD Hx Outlet 3-Way Temp Cntrl) will AUTO divert letdown flow to the __(2)__.

A. (1) 138°F
(2) VCT to protect the demineralizer resin

B. (1) 138°F
(2) RHT to prevent a reactor power reduction

C. (1) 120°F
(2) VCT to protect the demineralizer resin

D. (1) 120°F
(2) RHT to prevent a reactor power reduction

Question: 15

1 Pt Given the following conditions on Unit 1:

- A small break LOCA occurred in Containment
- SI has actuated on both trains
- 1B NV pump tripped on overcurrent
- Containment pressure is 3.5 PSIG

Based on the above conditions, ALL cooling would be lost to the NC pump ...

A. seals ONLY.

B. motor bearings ONLY.

C. seals AND pump lower bearings.

D. motor bearings AND pump lower bearings.

Question: 16

1 Pt Given the following initial conditions:

- Unit 2 is operating at 100% RTP
- PZR Pressure Channel Select is in 1-2 position
- NC system pressure is 2235 PSIG

The following occurs:

- 2NC-27 (Pressurizer Spray Control) RED lamp is lit and the GREEN lamp is extinguished
- 2NC-29C (Pressurizer Spray Control) GREEN lamp is lit and the RED lamp is extinguished
- NC system pressure is decreasing
- Attempts to close 2NC-27 using its controller have been unsuccessful

Which ONE (1) of the following describes the actions required in accordance with AP-11 (Pressurizer Pressure Anomalies)?

A. Manually trip the reactor and stop 2A NC pump.

B. Ensure the PZR Channel Select is swapped to a non-affected channel.

C. Manually place the Pressurizer Spray Emergency Close switch to the close position.

D. Ensure the Pressurizer Backup heaters energize at 2210 PSIG to stop the pressure decrease.

Question: 17

1 Pt Given the following:

- Unit 1 is shutdown
- NC system temperature is 140°F
- 'A' Train components are in operation
- D/G 1B is tagged for maintenance
- The NC system WR level is 55 inches

Given the following events occur:

- The 1A RN pump trips on overcurrent
- The operating crew has completed the actions of AP-20 Case 1 (Loss of Operating RN Train)

What actions are required (if any) per Tech Spec 3.7.7 (Nuclear Service Water System)?

A. RN is not required to be Operable in Mode 5:
No action is required per this LCO.

B. Only ONE train of RN is required to be Operable:
No action is required per this LCO.

C. BOTH trains of RN are required to be Operable:
Enter the applicable action statement of TS 3.7.7.

D. Only ONE train of RN is required to be Operable but must have Emergency Power available :
Enter the applicable Action Statement of TS 3.7.7.

Question: 18

1 Pt Given the following conditions:

- A LOCA has occurred on Unit 1
- ECA 1.1 (Loss of Emergency Coolant Recirculation (ECR) has been implemented
- All ECCS pumps are taking suction from the FWST
- FWST level is 100 inches
- Containment sump level is 1.5 feet

Which ONE (1) of the following describes the mitigation strategies of ECA 1.1?

A. Attempts are made to locate and isolate the cause of the loss of inventory from containment and makeup is initiated to the FWST. NC system is cooled down and depressurized to allow the CLA's to inject.

B. Attempts are made to locate and isolate the cause of the loss of inventory from containment and makeup is initiated to the FWST. NC System is cooled down, depressurized and placed on RHR cooling.

C. Containment spray and Injection flow are minimized, makeup is initiated to the FWST, NC System conditions are maintained stable until FWST and containment sump inventories are recovered or ECR capability is restored.

D. Containment spray and Injection flow are minimized, attempts are made restore ECR, makeup is initiated to the FWST, and the NC System is cooled down, depressurized and placed on RHR cooling.

Question: 19

1 Pt Given the following:

- Unit 1 is shutdown in Mode 5
- A purge of the Containment atmosphere is in progress
- Personnel are preparing for refueling operations
- 1EMF-38(L) (Containment Particulate Low Range) experiences a loss of power

Which ONE (1) of the following lists the automatic action(s) that will occur?

A. VQ secured, VP secured, Containment Sump pumps 1A1, 1A2, 1B1, 1B2 and Incore Sump pump secured, Containment evacuation alarm sounded.

B. VQ secured, VP secured, Containment Sump pumps 1A1, 1A2, 1B1, 1B2 and Incore Sump pump secured ONLY.

C. VQ and VP secured ONLY.

D. VQ secured ONLY.

Question: 20

1 Pt Given the following:

- 1NV-241(Seal Water Injection Flow Control) failed closed and cannot be reopened
- Normal L/D has been isolated
- Excess L/D has been placed in service at a flow rate of 26 GPM
- Seal Injection is presently 7 GPM per NC pump
- Total NC pump seal leak off flow is 12 GPM
- PZR level is 44%

Assuming no further operator action is taken, how long will it take for the PZR Heater feeder breakers to trip open?

REFERENCE PROVIDED

A. 164 Minutes

B. 180 Minutes

C. 360 Minutes

D. 520 Minutes

Question: 21

1 Pt Which ONE (1) of the following describes the effect of an UNDER-COMPENSATED Intermediate Range Channel following a Reactor Trip?

A. Channel will indicate high, Source Ranges will correctly energize due 1/2 logic.

B. Channel will indicate low, prematurely energizing the Source Ranges due to 1/2 logic.

C. Channel will indicate high, preventing P-6 from energizing the Source Ranges due to not satisfying 2/2 logic.

D. Channel will indicate low, Source Ranges will not energize until P-6 is met from other Channel due to 2/2 logic.

Question: 22

1 Pt IAW Tech Spec 3.7.1 (Main Steam Safety Valves), the FIRST safety valve is set to open at _(1)_ PSIG and the LAST safety valve is set to open at _(2)_ PSIG.

A. (1) 1170
(2) 1220

B. (1) 1190
(2) 1220

C. (1) 1170
(2) 1225

D. (1) 1190
(2) 1225

Question: 23

1 Pt Which ONE (1) of the following is the basis for the minimum temperature of the FWST as it relates to a Containment Spray actuation?

A. Prevent soluble boron from coming out of solution which could result in clogging of the NS spray nozzles and reduced spray flow.

B. Prevent an excessive reduction in containment pressure, which could decrease the rate at which steam can be vented out the break and increases peak clad temperature.

C. Prevent exceeding the maximum external pressure load on the containment shell due to an internal vacuum caused by overcooling of the Post-Accident Containment atmosphere.

D. Prevent thermal shock of NS system piping specifically the NS spray nozzles which could be exposed to adverse containment conditions following a High Energy Line Break inside Containment.

Question: 24

1 Pt Given the following:

- Unit 1 is operating at 100% RTP
- The 1A D/G has just been declared inoperable due to an oil leak on the Woodward governor

Which ONE (1) of the following describes ALL checks which must be performed within 1 hour to ensure compliance with TS 3.8.1 (AC Sources – Operating)?

A. Flowpaths through which 1ETA AND 1ETB are being supplied by offsite power.

B. Flowpath through which 1ETA is being supplied by offsite power AND determine that 1ETA is being supplied independently from 1ETB.

C. Flowpath through which 1ETA OR 1ETB is being supplied by offsite power AND determine that 1ETA and 1ETB are being supplied independently.

D. Flowpaths through which 1ETA AND 1ETB are being supplied by offsite power AND determine that 1ETA and 1ETB are being supplied independently.

Question: 25

1 Pt Given the following conditions on Unit 1:

- Reactor power is 40%
- 1CM-843 (1A Main Condenser Vacuum Breaker) has failed in the intermediate position. Maintenance is attempting to close this valve
- EXH HOOD TEMP HI alarm is lit
- Condenser vacuum is 26 inches Hg and DEGRADING slowly
- (1ZJP5000) CSAE steam pressure is reading 100 PSIG

Which ONE (1) of the following actions is directed by AP-23 (Loss of Condenser Vacuum) and will be the MOST effective in mitigating this event?

A. Reduce turbine load

B. Start additional RC pumps

C. Open the Exhaust Hood Spray valves

D. Dispatch operator to restore CSAE steam pressure

Question: 26

1 Pt In the event of a fire which activates the fire protection system, which ONE (1) of the following sequence of events is the normal starting sequence for the fire pumps?

A. LEAD Jockey Pump starts at 43" level in the pressurizer tank
STBY Jockey Pump starts at 41" level in the pressurizer tank
"A" Fire Pump starts at 81 psig
"B" Fire Pump starts at 76 psig
"C" Fire Pump starts at 71 psig

B. LEAD Jockey Pump starts at 51" level in the pressurizer tank
STBY Jockey Pump starts at 45" level in the pressurizer tank
"A" Fire Pump starts at 81 psig
"B" Fire Pump starts at 76 psig
"C" Fire Pump starts at 71 psig

C. LEAD Jockey Pump starts at 43" level in the pressurizer tank
STBY Jockey Pump starts at 41" level in the pressurizer tank
"A" Fire Pump starts at 83 psig
"B" Fire Pump starts at 78 psig
"C" Fire Pump starts at 73 psig

D. LEAD Jockey Pump starts at 51" level in the pressurizer tank
STBY Jockey Pump starts at 45" level in the pressurizer tank
"A" Fire Pump starts at 83 psig
"B" Fire Pump starts at 78 psig
"C" Fire Pump starts at 73 psig

Question: 27

1 Pt Which ONE (1) of the following is supplied from DC Distribution Center SDSP?

A. FWPT 'A' Emergency Oil pump

B. 1SM-1AB, 1D Main Steam Isol

C. Turbine Emergency Bearing Oil pump

D. 1CA161C, RN Supply to Turbine Driven CA pump

Question: 28

1 Pt Which ONE (1) of the following describes the correct reason for ensuring that NC system pressure, is less than 2335 PSIG during implementation of FR-S.1 (Response to Nuclear Power Generation/ATWS)?

A. Minimize the potential for reactor vessel pressurized thermal shock.

B. Verifies or ensures a sufficient boron flow rate into the NCS.

C. Minimize the potential of the PRT rupture disc bursting.

D. Verifies that the pressurizer PORVs are closed.

Question: 29

1 Pt

Unit 2 is currently operating at 60% power with a load increase in progress. Given the following events and conditions:

- Pressurizer level control is in the "1-2" position (normal control)
- Pressurizer level is at program level and in "automatic"
- Pressurizer level Channel 1 fails at its current level

If the channel failure remains undiscovered, which ONE (1) of the following describes the system response as plant load is increased from 60% to 90%?

A. Charging flow decreases
Letdown isolates
Pressurizer heaters turn off

B. Charging flow increases
Pressurizer backup heaters energize
Pressurizer level stabilizes at ~ 52%

C. Charging flow increases
Pzr Low Level Control annunciator alarms
Pressurizer level increases to the trip setpoint

D. Charging flow decreases
Pzr Low Level Control annunciator alarms
Letdown isolates

Question: 30

1 Pt Given the following:

- A LOCA has occurred on Unit 1
- ES-1.2 (Post LOCA Cooldown and Depressurization) has been implemented

Which ONE (1) of the following describes major actions of ES-1.2?

A. (1) Establish a 100°F/hr cooldown rate
(2) Sequentially stop all but one NV pump

B. (1) Cooldown and depressurize at maximum rate
(2) Sequentially stop all but one NV pump

C. (1) Establish a 100°F/hr cooldown rate
(2) Secure all NC pumps

D. (1) Cooldown and depressurize at maximum rate
(2) Secure all NC pumps

Question: 31

1 Pt Given the following:

- Unit 2 is operating at 100% RTP
- A Loss of Offsite Power occurs on both Units 1 and 2

Which ONE (1) of the following provides the assured source of cooling water to maintain containment temperatures within Tech Spec limits?

A. BOTH '2A' AND '2B' RN pumps

B. RV pump selected in "Auto"

C. '2A' RN pump ONLY

D. '2B' RN pump ONLY

Question: 32

1 Pt

Unit 1 was operating at 100% when the following sequence of events occurred:

- A Loss-of-Offsite Power resulted in a Reactor Trip
- When the 1A D/G attempted to load 1ETA, a fault on the bus resulted in an 87G (Generator Differential) relay actuation
- The plant transient resulted in a LOCA inside containment and a safety injection
- Containment pressure is 3.0 PSIG and increasing

Which ONE (1) of the following describes the status of the VE (Annulus Ventilation) fans?

A. ONLY 1B VE fan is running.

B. 1A and 1B VE fans are running.

C. ONLY 1B VE fan will start after a 10 minute time delay.

D. 1A and 1B VE fans will start after a 10 minute time delay.

Question: 33

1 Pt Unit 1 & 2 are operating at 100% RTP:

- The TCC has notified the Control Room of impending grid frequency disturbances
- The crew is performing actions of AP-05 (Generator Voltage and Electric Grid Disturbances)
- Both Unit 1 & 2 have been operating with frequency less than 59.5 Hz for greater than 20 Minutes

Which ONE (1) of the following describes why Turbine First Stage Impulse pressure is reduced to less than 340 PSIG prior to opening the Switchyard PCB's in accordance with AP-05?

A. Opening the Switchyard PCB's prior to Turbine First Stage Impulse pressure decreasing below 340 PSIG will result in a Turbine Trip.

B. Turbine First Stage Impulse pressure <340 PSIG ensures that a Turbine Trip will occur once separated from the Grid but that a Reactor Trip will not occur.

C. Opening the Switchyard PCB's above 340 PSIG Turbine First Stage Impulse pressure will initiate a Complete Loss of Load transient and the Main Generator load will reduce to In-House loads.

D. Turbine First Stage Impulse pressure <340 PSIG ensures that the AMSAC circuit will not trip the Main Turbine during the resulting feedwater transient as the Turbine runs back to In-House loads.

Question: 34

1 Pt Given the following conditions:

- Unit 1 is responding to a LOCA
- All sources of feedwater have been lost, S/G NR levels are 17% and decreasing
- NC pumps are secured
- FR-C.1 (Response to Inadequate Core Cooling) has been implemented
- NI and NV pumps are unavailable
- Peak Containment pressure reached 2.5 PSIG
- S/G depressurization has failed to restore adequate core cooling
- Core Exit Thermocouples are currently indicating 1210°F
- NC pump support requirements can NOT be met

What is the major action(s) required by FR-C.1 under these conditions?

A. Do NOT restart NC pumps, open all PZR PORVs and head vents to depressurize the NC system.

B. Restart all NC pumps and restore secondary heat sink in FR-H.1 before proceeding in FR-C.1.

C. Restart NC pumps one at a time until CETs are less than 1200°F to force two phase flow through the core for core cooling.

D. Do NOT restart NC pumps, continue efforts to initiate feed and bleed of the NC system to restore core cooling.

Question: 35

1 Pt Unit 1 is shutdown with the following conditions:

- 1A and 1B ND trains are in service providing shutdown cooling IAW SO-9 (ND System Parallel Heat Exchanger Operation)
- The flow rate on each ND train is currently 1500 GPM
- NC system temperature is being maintained at 170°F
- The air line for 1ND-34 (1A & 1B ND Hx Byp Isol) breaks off

Which ONE (1) of the following describes the indications that will be observed by the Operators in the Main Control Room over the next 15 minutes?

	1A ND Train Total Flowrate	1B ND HX Inlet Temperature
A.	Increase	Increase
B.	Increase	Decrease
C.	Decrease	Increase
D.	Decrease	Decrease

Question: 36

1 Pt Given the following events and conditions on Unit 2:

- A large break LOCA occurred
- SI and Sequencers were reset
- Subsequently a Loss of Offsite Power occurs
- 2B D/G failed to start

Which ONE (1) of the following correctly describes the restoration process for the Train A NV, NI, ND, and CA pumps?

A. 2A NV and 2A CA pumps automatically restart
2A NI and 2A ND pumps must be restarted by operator action

B. 2A NV and 2A NI pumps automatically restart
2A ND and 2A CA pumps must be restarted by operator action

C. 2A ND and 2A CA pumps automatically restart
2A NV and 2A NI pumps must be restarted by operator action

D. 2A NI and 2A ND pumps automatically restart
2A NV and 2A CA pumps must be restarted by operator action

Question: 37

1 Pt Given the following conditions on Unit 1:

- Rod M-4 has dropped due to a blown fuse
- AP-14 (Rod Control Malfunction) has been implemented
- The fuse has been replaced and the dropped rod has been realigned with the rest of the rods in Control Bank D

Due to a miscommunication with I&E, the Pulse-to-Analog Converter was not reset to the correct bank step position.

The "Control Bank Lo-Lo Limit" annunciator will:

A. alarm SOONER than required because the RIL function of the OAC is calculating CB-D rods to be higher than actual.

B. alarm LATER than required because the RIL function of the OAC is calculating CB-D rods to be higher than actual.

C. alarm SOONER than required because the RIL function of the OAC is calculating CB-D rods to be lower than actual.

D. alarm LATER than required because the RIL function of the OAC is calculating CB-D rods to be lower than actual.

Question: 38

1Pt Given the following sequence of events:

- A Large Break LOCA occurs on Unit 1
- All ECCS systems are injecting from the FWST
- Safety Injection is reset
- FWST level is currently 200 inches

An Operator depresses the 'SS-RESET' pushbuttons on the 'CNTRL PERMISSIVE FOR RECIRC MODE 1NI-185A / 184B' switches.

Concerning the following valves:

- 1NI-185A (RB Sump to Train A ND & NS)
- 1NI-184B (RB Sump to Train B ND & NS)
- 1ND-19A (A ND Pump Suction from FWST or NC)
- 1ND-4B (B ND Pump Suction from FWST or NC)

Which ONE (1) of the following describes what the Operator observes with regards to the automatic operation of the ECCS valves listed above after the SS-RESET pushbuttons are depressed?

A. Immediately after depressing the SS-RESET pushbuttons, 1NI-185A/184B, OPEN AND 1ND-19A/4B CLOSE.

B. Immediately after depressing the SS-RESET pushbuttons, 1NI-185A/184B OPEN AND 1ND-19A/4B REMAIN OPEN.

C. When 2/3 FWST Lo Level Bistables are received, 1NI-185A/184B OPEN AND 1ND-19A/4B CLOSE.

D. When 2/3 FWST Lo Level Bistables are received, 1NI-185A/184B REMAIN CLOSED AND 1ND-19A/4B REMAIN OPEN.

Question: 39

1 Pt Given the following:

- AP-17 (Loss of Control Room) has been entered

Which ONE (1) of the following describes the reason why the operator at the reactor trip breakers SHALL NOT TRIP the reactor until directed to do so by the SRO at the ASP?

A. Ensures control is established at the Auxiliary Shutdown Panel before placing the plant in a transient.

B. A "fire" may have caused the Control Room evacuation and a coordinated effort is required for the SRO to isolate controls from the normal power source(s).

C. Emergency Boration must be initiated prior to tripping the Reactor and because the control room indications are no longer available, action has to be verified by the SRO at the ASP.

D. Reactivity manipulations must be performed or directed by a licensed operator; therefore the operator at the Reactor Trip breakers must be directed by the SRO at the ASP.

Question: 40

1 Pt Given the following:

- Unit 1 is operating at 100% RTP with all systems in normal
- Instrument Air (VI) is inadvertently lost to containment

Which ONE (1) of the following Main Control Board indications will occur as a result?

A. 1NV-24B (NC Loop To Excess Letdown Heat Exchanger Isolation) in the CLOSE position.

B. 1NV-35A (Variable Letdown Orifice Outlet Flow Control Isolation) in the CLOSE position.

C. 1NV-459 (Variable Letdown Orifice Outlet Flow Control) in the OPEN position.

D. 1NV-1A (NC Letdown Isolation Valve) in the OPEN position.

Question: 41

1 Pt

Unit 1 is operating at 100% power with the PZR level control system in a 1-2 lineup.

The following events occur in the order listed:

1) Letdown isolates and all pressurizer heaters de-energize
2) Pressurizer level increases
3) Charging flow decreases

What is the cause of these indications?

A. Pressurizer level channel I fails high.

B. Pressurizer level channel II fails low.

C. Pressurizer Level Master Controller output has failed low.

D. Auctioneered Hi-Tave input to the Pzr Control circuit fails low.

Question: 42

1 Pt During recovery from a Loss of all AC power, operators are performing actions in ECA-0.0 (Loss of All AC Power).

Which ONE (1) of the following describes the importance of locally ISOLATING the KC supply to the NC pump thermal barriers prior to restarting a KC pump?

A. To prevent damage to the NC pump thermal barriers due to thermal shock.

B. To prevent potential mechanical failure of the NC pump thermal barriers due to water hammer.

C. To prevent steam from forming and circulating in the KC system and ensures the KC system is available to cool equipment necessary for recovery.

D. To ensure elevated heat loads as a result of the loss of all AC power are within the design cooling capacity of the KC system prior to starting a KC pump.

Question: 43

1 Pt Given the following conditions on Unit 1:

- ES-1.2 (Post LOCA Cooldown and Depressurization) is being performed due to a LOCA inside Containment.
- 1A NV pump and 1A NI pump are running
- Containment pressure is 4 PSIG
- Pressurizer level is 33%
- BOTH subcooling monitors are INOPERABLE
- NC system CETs indicate 500°F
- NC system WR pressure indicates 750 PSIG

Which ONE (1) of the following describes the condition of the fluid in the NC system and the required actions (if any) based on these indications?

REFERENCE PROVIDED

A. Saturated; Manually initiate a Phase A Isolation.

B. Subcooled; Manually initiate a Phase A Isolation.

C. Saturated; Start 1B NI and 1B NV pumps.

D. Subcooled; Start 1B NI and 1B NV pumps.

Question: 44

1 Pt

Unit 1 is responding to a steam break inside containment from 100% RTP.

Given the following events and conditions:

- Narrow range S/G level is 15% for each intact S/G
- The NCPs were tripped
- FR-P.1 (*Response to Imminent Pressurized Thermal Shock Condition)* has been implemented
- NCS temperature is now stable
- NCS pressure is stable with only the control group of pressurizer heaters energized
- Letdown has been restored

The crew has determined that a 1 hour soak is required. Which ONE (1) of the following evolutions could be performed by the crew in the next hour while continuing on through the EP procedures?

A. Start 1D NCP.

B. Place auxiliary spray in service.

C. Energize Backup heaters.

D. Increase CA flow to one intact S/G to raise NR level to 50%.

Question: 45

1 Pt Given the following conditions on Unit 1:

- Unit is operating at 70% RTP
- The OATC determines that AUTO rod withdrawal is not functioning
- Further investigation reveals that manual rod withdrawal is functioning normally
- Control Bank 'D' rods are currently at 190 steps

Which ONE (1) of the following failures has caused this condition?

A. Turbine Impulse Pressure Channel II fails low.

B. Turbine Impulse Pressure Channel I fails low.

C. Loop 2 ΔT Channel fails high.

D. PR Channel N-41 fails high.

Question: 46

1 Pt Given the following conditions on Unit 2:

- The core has been off-loaded to the Spent Fuel Pool
- 2A KF Pump is running
- 2B KF Pump is off
- A Loss of Off-Site Power occurs
- 2A and 2B D/Gs start and load normally
- 30 minutes after the loss of power, a Spent Fuel Pool Hi Temperature alarm is received

Which ONE (1) of the following is the cause of this condition?

A. The 2A or 2B KF pump was not manually restarted (sequencer reset required).

B. The 2A or 2B KF pump was not manually restarted (sequencer reset NOT required).

C. The 2A KF pump ONLY did not automatically load on the Blackout sequence as designed.

D. The 2A and 2B KF pumps did not automatically load during the Blackout sequence as designed.

Question: 47

1 Pt Given the following conditions on Unit 1:

- NC system temperature is 250°F
- 2 NC pumps are in operation

Which ONE (1) of the following lists the Tech Spec 3.5.3 (ECCS - Shutdown) operability requirements based on the above conditions?

A. ONE Charging subsystem and ONE RHR subsystem must be OPERABLE.

B. BOTH Charging subsystems and BOTH RHR subsystems must be OPERABLE.

C. ONE Charging subsystem and BOTH RHR subsystems must be OPERABLE.

D. BOTH Charging subsystems and ONE RHR subsystem must be OPERABLE.

Question: 48

1 Pt A LOCA has occurred on Unit 2 inside Containment. The following conditions are observed:

- Containment pressure is 2.5 PSIG
- Containment sump level is 11 feet
- 1EMF51A (Reactor Building Activity) indicates 40 R/Hr
- Containment hydrogen concentration is 0.4%

Which ONE (1) of the following procedures should be implemented?

A. FR-Z.1 (Response to High Containment Pressure)

B. FR-Z.2 (Response to Containment Flooding)

C. FR-Z.3 (Response to High Containment Radiation Level)

D. FR-Z.4 (Response to High Containment Hydrogen)

Question: 49

1 Pt Given the following:

- Unit 1 is operating at 100% RTP
- Unit 2 is refueling
- Unit 1 is releasing a minimally decayed Waste Gas Decay Tank
- A significant packing leak starts on isolation valve 1WG-160, (WG Decay Tank Outlet to Unit Vent Control)

Which ONE (1) of the following correctly describes the automatic actions which will ensure that the leak is contained and filtered?

A. 0EMF-50 (Waste Gas Disch Hi Rad) automatically closes 1WG-160 AND 1EMF-41 (Aux Bldg Vent Hi Rad) automatically stops the Auxiliary Building ventilation unfiltered exhaust fans.

B. 1EMF-35 (Unit Vent Part Hi Rad) automatically stops the Auxiliary Building ventilation unfiltered exhaust fans AND 1EMF-41 (Aux Bldg Vent Hi Rad) automatically aligns the Auxiliary Building ventilation filter trains.

C. 1EMF-36 (Unit Vent Gas Hi Rad) automatically closes 1WG-160 AND 1EMF-35 (Unit Vent Part Hi Rad) automatically aligns the Auxiliary Building ventilation filter trains.

D. 1EMF-41 (Aux Bldg Vent Hi Rad) automatically stops the Auxiliary Building ventilation unfiltered exhaust fans AND 1EMF-36 (Unit Vent Gas Hi Rad) automatically closes 1WG-160.

Question: 50

1 Pt Which of the following plant evolutions does NOT require that a 1/M plot be performed in accordance with NSD 304 (Reactivity Management)?

A. Initial reactor startup via boron dilution

B. Primary plant cooldown prior to a refueling outage

C. Fuel Loading

D. Reactor startup following a trip from 50% power

Question: 51

1 Pt Which ONE (1) of the following lists the setpoints for the design feature of the ND system which functions to protect the system from overpressure?

A. Suction relief - 450 PSIG
Discharge relief - 650 PSIG

B. Suction relief - 400 PSIG
Discharge relief - 600 PSIG

C. Suction relief - 450 PSIG
Discharge relief - 600 PSIG

D. Suction relief - 400 PSIG
Discharge relief - 650 PSIG

Question: 52

1 Pt Given the following:

- A VI header rupture occurs causing the VI system to completely depressurize.

Which ONE (1) of the following describes how the VS system is prevented from depressurizing due to the break on the VI system?

A. The VI and VS headers are separated using a manual isolation valve. However, VS air compressor will start automatically to maintain VS header pressure.

B. The VI and VS headers are separated using a manual isolation valve. And, the VS air compressor must be manually started to maintain VS header pressure.

C. A valve will automatically close to separate the VI and VS headers. And, the VS air compressor will start automatically to maintain VS header pressure.

D. A valve will automatically close to separate the VI and VS headers. However, the VS air compressor must be manually started to maintain VS header pressure.

Question: 53

1 Pt Given the following conditions:

- Refueling is in progress on Unit 1
- Reactor vessel head is removed and the refueling cavity is full

Which ONE (1) of the following states the requirements for ND Loop operability in accordance with Tech Spec 3.9.5 (Residual Heat Removal (RHR) and Coolant Circulation — High Water Level) for the conditions above?

A. ONE ND Loop must be OPERABLE and in operation. An ND Loop consists of one ND pump, one heat exchanger, and a flow path from an NC system COLD leg to an NC system HOT leg.

B. TWO ND Loops must be OPERABLE with one ND Loop in operation. An ND Loop consists of one ND pump, one heat exchanger, and a flow path from an NC system COLD leg to an NC system HOT leg.

C. ONE ND Loop must be OPERABLE and in operation. An ND Loop consists of one ND pump, one heat exchanger, and a flow path from an NC system HOT leg to an NC system COLD leg.

D. TWO ND Loops must be OPERABLE with one ND Loop in operation. An ND Loop consists of one ND pump, one heat exchanger, and a flow path from an NC system HOT leg to an NC system COLD leg.

Question: 54

1 Pt Given the following conditions on Unit 1:

- A small break LOCA has occurred inside Containment
- E-1 (Loss of Reactor or Secondary Coolant) has been implemented
- 1ETA is de-energized
- The 1B NI pump has failed
- The 1B Hydrogen Recombiner is out of service
- Containment hydrogen concentration is 7%
- The TSC has recommended purging containment to reduce hydrogen concentration to 3.5% before energizing the igniters

Which ONE (1) of the following statements correctly describes the method for performing this evolution to control the off-site dose?

A. Containment air is exhausted to the Annulus where it is filtered prior to release to the unit vent stack.

B. Containment air is exhausted to the Auxiliary Building where it is filtered prior to release to the unit vent stack.

C. Containment air is exhausted through the Incore Instrument Ventilation system where it is filtered prior to release to the unit vent stack.

D. Containment air is exhausted through the Containment Air Release system where it is filtered prior to release to the unit vent stack.

Question: 55

1 Pt Given the following:

- Unit 2 is operating at 90% RTP after a start-up from a refueling outage
- A Pressurizer PORV is found to be leaking
- The leaking PORV's block valve has been shut

The PRT has been cooled down to the following current conditions:

- PRT level – 65 %
- PRT pressure – 9 PSIG
- PRT temperature – 100°F
- Lower Containment temperature – 118°F

What actions are required in accordance with OP/2/A/6150/004 (Pressurizer Relief Tank) to restore and maintain normal operating conditions in the PRT for the long term?

A. Vent the PRT to containment.

B. Vent the PRT to the waste gas system.

C. Continue to cool the PRT by initiating spray flow from the NCDT.

D. Continue to cool the PRT by initiating spray flow from the RMWST.

Question: 56

1 Pt Given the following initial conditions on Unit 2:

- A unit shutdown and cooldown was in progress
- All actions associated with NC system pressure going below P-11 were completed
- 'B' Train components are in service

The following sequence of events occurs:

1. 120VAC Vital panel board EKVD de-energizes due to an electrical fault
2. 'A' Main Steam line ruptures
3. Pressurizer pressure is 1840 PSIG and going down
4. Containment pressure is 1.2 PSIG and going up

Which ONE (1) of the following would get an automatic START signal? (Assume no operator actions have occurred.)

A. All ECCS equipment

B. None of the ECCS equipment

C. Only 'A' Train ECCS equipment

D. Only 'B' Train ECCS equipment

Question: 57

1 Pt Given the following:

- Unit 2 is operating at 100% RTP
- It has been determined that eight (8) Ice Condenser doors will not open due to floor buckling

Which ONE (1) of the following statements describes the Containment design pressure AND how peak Containment pressure during a Design Basis Accident is affected by the condition above?

A. Containment design pressure is 3 psig. Peak pressure will be reached LATER than normal.

B. Containment design pressure is 3 psig. Peak pressure will be reached SOONER than normal.

C. Containment design pressure is 15 psig. Peak pressure will be reached LATER than normal.

D. Containment design pressure is 15 psig. Peak pressure will be reached SOONER than normal.

Question: 58

1 Pt Given the following conditions:

- A power ascension to 100% RTP is in progress on Unit 1
- The power increase is currently on hold at 80% RTP
- Power Range Channel N-43 fails high

Narrow Range level for _____ increases to the 100% setpoint level.

Which ONE (1) of the following best completes the statement above?

A. all four S/Gs

B. S/G 'C' ONLY

C. S/G 'A' and S/G 'D' ONLY

D. S/G 'B' and S/G 'C' ONLY

Question: 59

1 Pt Given the following conditions on Unit 1:

- A loss of voltage has occurred on 1ETA
- Blackout loading is in progress
- A Safety Injection signal is received before Blackout loading is completed on 1ETA

Which of the following describes the events that occur from the time the Safety Injection signal is received?

A. The Blackout load sequence is completed, 1ETA is cleared of all non-SI loads, and the SI load sequence is actuated.

B. The Blackout load sequence stops, 1ETA is cleared of all non-SI loads, and the SI load sequence is actuated.

C. The Blackout load sequence is completed, 1ETA is cleared of all loads, and the SI load sequence is actuated.

D. The Blackout load sequence stops, 1ETA is cleared of all loads, and the SI load sequence is actuated.

Question: 60

1 Pt Given the following conditions on Unit 1:

- The unit is at 100% power.
- The following annunciator is received in the Control Room:
    - BATT EVCA GROUND

Which ONE (1) of the following describes the indication available if the ground is on the positive leg of battery EVCA, and the resulting operation of the DC Bus?

A. Ground indication light on the back of the Main Control Board will be extinguished. Equipment malfunctions are NOT expected with a ground on one side.

B. Ground indication light on the back of the Main Control Board will be brightly lit. Equipment malfunctions are expected with a ground on either the positive OR negative terminal.

C. Ground indication light on the back of the Main Control Board will be brightly lit. Equipment malfunctions are NOT expected with a ground on one side.

D. Ground indication light on the back of the Main Control Board will be extinguished. Equipment malfunctions are expected with a ground on either the positive OR negative terminal.

Question: 61

Given the following conditions:

- The unit is in Mode 5
- A loss of ND has occurred
- The crew is performing the actions of AP-19 (LOSS OF ND OR ND SYSTEM LEAKAGE)
- BOTH ND Pumps were tripped
- The crew is preparing to start "1A" ND Pump

Which ONE (1) of the following describes the required position of the 1A ND Heat Exchanger outlet isolation (1ND-29) and HX bypass isolation valve (1ND-34) in accordance with AP-19?

	1ND-29	**1ND-34**
A.	OPEN	OPEN
B.	CLOSED	OPEN
C.	OPEN	CLOSED
D.	CLOSED	CLOSED

Question: 62

1 Pt Which of the following will occur simultaneously with an automatic Containment Spray Actuation?

A. Phase A Isolation

B. Feedwater Isolation

C. Main Steam Isolation

D. Containment Ventilation Isolation

Question: 63

1 Pt Given the following:

- Unit 1 @ 100% RTP
- CETs currently indicate 615°F
- A malfunction of the Reference Junction Box temperature control causes the junction box temperature to INCREASE by 20°F

Assuming that ACTUAL core-exit temperature remains constant, which ONE (1) of the following lists the new indication for the non-safety related CETs?

A. 635°F

B. 625°F

C. 605°F

D. 595°F

Question: 64

1 Pt Given the following conditions:

- Unit 1 is in Mode 4
- ND system is providing core cooling
- AP-22 (Loss of VI) has been implemented
- ND system flow rate is being controlled by throttling:

  1NI-173A (1A ND to A & B Cold Legs Cont Outside Isol)
  1NI-178B (1B ND to C & D Cold Legs Cont Outside Isol)

Which ONE (1) of the following describes the requirements in AP-22 for operating the manual loaders for 1ND-14 and 1ND-29 (1B/1A ND Hx Outlet Isolation)?

A. Turn the manual loaders 5-6 times in the clockwise direction to ensure that the valves close when VI pressure is returned to normal.

B. Turn the manual loaders 5-6 times in the counter-clockwise direction to ensure that the valves close when VI pressure is returned to normal.

C. Turn the manual loaders 5-6 times in the clockwise direction to ensure that the valves remain open when VI pressure is returned to normal.

D. Turn the manual loaders 5-6 times in the counter-clockwise direction to ensure that the valves remain open when VI pressure is returned to normal.

Question: 65

1 Pt Which ONE (1) of the exposures would exceed a 10CFR20 annual exposure limit?

A. 45 REM to the thyroid

B. 17 REM to the lens of the eye

C. 45 REM to the leg below the knee

D. 17 REM to the skin

Question: 66

1 Pt Given the following:

- In preparation for a containment entry RP requested that a U-1 RO to align 1EMF 38, 39 & 40 to sample Upper Containment only
- Due to a miscommunication from RP the request is never made to realign this sample point to normal
- 1EMF 38, 39 & 40 sample point remains aligned to upper containment ONLY over the next 12 hours
- A VQ release in is in progress

Which ONE (1) of the following describes the effect on the 1EMF 38, 39 & 40 sample package's ability to monitor changing radiation levels associated with conditions inside U-1 Containment?

A. Due to the limited amount of communication between atmosphere in upper and lower containment, 1EMF-38 will not be able to detect a 1 GPM NC system leak within one hour.

B. Because air is released from upper containment, this will have no effect on the ability of the affected EMF's to auto terminate a VQ release should radiation levels increase.

C. Prolonged operation of this EMF sample package aligned to Upper Containment ONLY could result in damage to the associate sample pump resulting in a degraded sample flowrate.

D. Due to the normal mixing of containment atmosphere by the ventilation system, this does not significantly effect the ability of this sample package to sample the containment atmosphere.

Question: 67

1 Pt Given the following:

- Unit 2 is operating at 100% RTP
- 'B' Train is in service
- 2A RN train is in operation for testing
- The RN trains are split with 2RN-41B (Train B to Non-Ess Hdr Isol) closed
- 2B RN pump flow is reading approximately 2700 GPM

Subsequently, 2RN-190B (RN to B KC HX Control) is positioned to a value of 100%.

Which ONE (1) of the following correctly describes the component that will stabilize at a LOWER value?

A. Containment temperature

B. NC pump stator temperatures

C. NC pump bearing temperatures

D. Letdown Heat Exchanger temperature

Question: 68

1 Pt Unit 1 is operating at 100% RTP. Given the following events and conditions:

2100 Power is lost to all Control Room annunciators
2120 The OSM declares an Unusual Event
2125 The Emergency Notification form is completed, and the OSM directs an operator to make the notification to the state and counties
2130 A reactor trip occurs on Unit 1 and the OSM declares a Site Area Emergency
2135 The OSM completes a new Emergency Notification Form and directs the notification of state and counties

Which ONE (1) of the following indicates the time when the state and counties must be first notified of the events described above?

A. 2135

B. 2140

C. 2145

D. 2150

Question: 69

1 Pt

A worker needs to repack a valve in an area that has the following radiological characteristics:

- The worker's present exposure is 800 mREM for the year
- General area dose rate = 65 mREM/hr
- Airborne contamination concentration = 20 DAC

The job will take 4 hours with a mechanic wearing a full-face respirator. It will only take 2 hours if the mechanic does NOT wear the respirator.

Which of the following choices for completing this job would maintain the workers exposure within the Station ALARA requirements?

A. The worker should wear the respirator; otherwise he will exceed 25% of the DAC limit.

B. The worker should NOT wear the respirator because the total TEDE dose received will be greater if he wears one.

C. The worker should NOT wear the respirator because the airborne contamination is low enough that a respirator is not required.

D. The worker should wear the respirator because the total TEDE dose received will be less than if he does not wear one.

Question: 70

1 Pt The following conditions exist on Unit 1:

- Reactor Power is 50%
- A momentary loss of power occurs on EKVA causing the following instruments to fail low:
  - First Stage Turbine Impulse Pressure Channel 1
  - Power Range Channel N-41

Which ONE (1) of the following correctly completes the statement below?

Tref on the Tave / Tref recorder indicates...

A. 585°F but control rods do not move.

B. 557°F but the control rods do not move.

C. 585°F and the control rods step out at 72 steps per minute.

D. 557°F and the control rods step in at 72 steps per minute.

Question: 71

1 Pt Plant conditions:

- Both units are at 100% power
- Maintenance has requested an opportunity to do troubleshooting on Battery EVCA
- An Electronic Risk Assessment Tool (ORAM) assessment has resulted in a WHITE status on this activity

Which ONE (1) of the following identifies how this maintenance activity should be handled?

A. Allow the maintenance to be performed;
The risk assessment is minimal.

B. Allow the maintenance to be performed;
The risk assessment is acceptable.

C. Do NOT allow the maintenance to be performed;
The risk assessment is high.

D. Do NOT allow the maintenance to be performed;
ORAM cannot determine the risk level.

Question: 72

1 Pt

Unit 1 is being returned to full power following a refueling outage when the following annunciators are received in the Control Room:

- "S/G A FLOW MISMATCH LO STM FLOW" (1AD4-A1)
- "LOOP D/T DEV" (1AD6-E10)
- "A NC PUMP LO FLO ALERT" (1AD6-F1)
- The Safety breaker AND the Feeder breaker for 1A NC pump indicate CLOSED
- Reactor power remains at 55% RTP

Based on the above conditions, which ONE (1) of the following actions is required to be performed?

A. Reduce reactor power to less than 48% and trip 1A NC pump.

B. Manually trip the reactor and go to E-0, Reactor Trip or Safety Injection.

C. Select Delta-T defeat for the affected loop per the Annunciator Response Procedure.

D. Place the A S/G Feed Reg Valve in Manual and reduce feed flow.

Question: 73

1 Pt

The following conditions exist:

- Both units are operating at 100% RTP
- The following alarms are received on both units:
  - 1AD-11 C-5 (XFMR A URGENT ALARM)
  - 2AD-11 C-5 (XFMR A URGENT ALARM)
- Each alarm is the result of a loss of BOTH Cooling Groups to the respective transformer

Which ONE (1) of the following describes the difference in the Operator's response to these two annunciators?

A. The 1A Main Transformer cooling must be restored within 8 min 45 sec in order to prevent a turbine runback to <56%.

B. The 1A Main Transformer cooling must be restored within 28 min 45 sec in order to prevent a turbine runback to <56%.

C. The 2A Main Transformer cooling must be restored within 8 min 45 sec in order to prevent a turbine runback to <56%.

D The 2A Main Transformer cooling must be restored within 28 min 45 sec in order to prevent a turbine runback to <56%.

Question: 74

1 Pt Given the following conditions on Unit 1:

- A LOCA has occurred
- Safety Injection has been initiated

Which ONE (1) of the following describes the operation of the Containment Cooling system based on these conditions?

A. All VU units have started and RV containment isolation valves are open.

B. All VU units have started and RV containment isolation valves are closed.

C. All VU units have shunt tripped off and RV containment isolation valves are open.

D. All VU units have shunt tripped off and RV containment isolation valves are closed.

Question: 75

1 Pt

Unit 1 is operating at 100% RTP. Given the following events and conditions:

- In preparation for a Unit 1 TD CA pump performance test the following valves are positioned as indicated:
  - 1CA-64AB (TD CA Pump To 1A S/G) -- CLOSED
  - 1CA-52AB (TD CA Pump To 1B S/G) -- CLOSED
  - 1CA-48AB (TD CA Pump To 1C S/G) -- OPEN
  - 1CA-36AB (TD CA Pump To 1D S/G) -- OPEN
- An air line supplying 1SA-48ABC (SM FRM S/G 1C TO TD CA PUMP ISOL) ruptures resulting in a loss of air to the valve

Which ONE (1) of the following describes the impact to the Unit 1 CA system AND what actions are required by the operating crew, in accordance with OPS MANAGEMENT EXPECTATIONS, to mitigate the consequences of this event?

A. ALL flow control valves OPEN:
Crew should close all TD CA flow control valves as soon as practical.

B. ALL flow control valves OPEN:
Crew should delay closing all TD CA flow control valves until appropriate procedures have been implemented.

C. Flow control valves remain AS IS:
Crew should close all TD CA flow control valves as soon as practical.

D. Flow control valves remain AS IS:
Crew should delay closing all TD CA flow control valves until appropriate procedures have been implemented.

RO

McGuire Nuclear Station 2009 Written Examination Answer Key

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

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References

Table of Contents

The following references are provided:

- MNS U-1 Data Book Curve 7.38
- Copy of the Steam Tables
- U-1 Data Book Curve 1.10B

UNIT 1

OP/1/A/6100/22
ENCLOSURE 4.3
CURVE 7.38
PRESSURIZER
(VOLUME vs. TANK LEVEL)

UNIT 1

This data is also available on the OAC.

OP/1/A/6100/22
ENCLOSURE 4.3
CURVE 1.10B

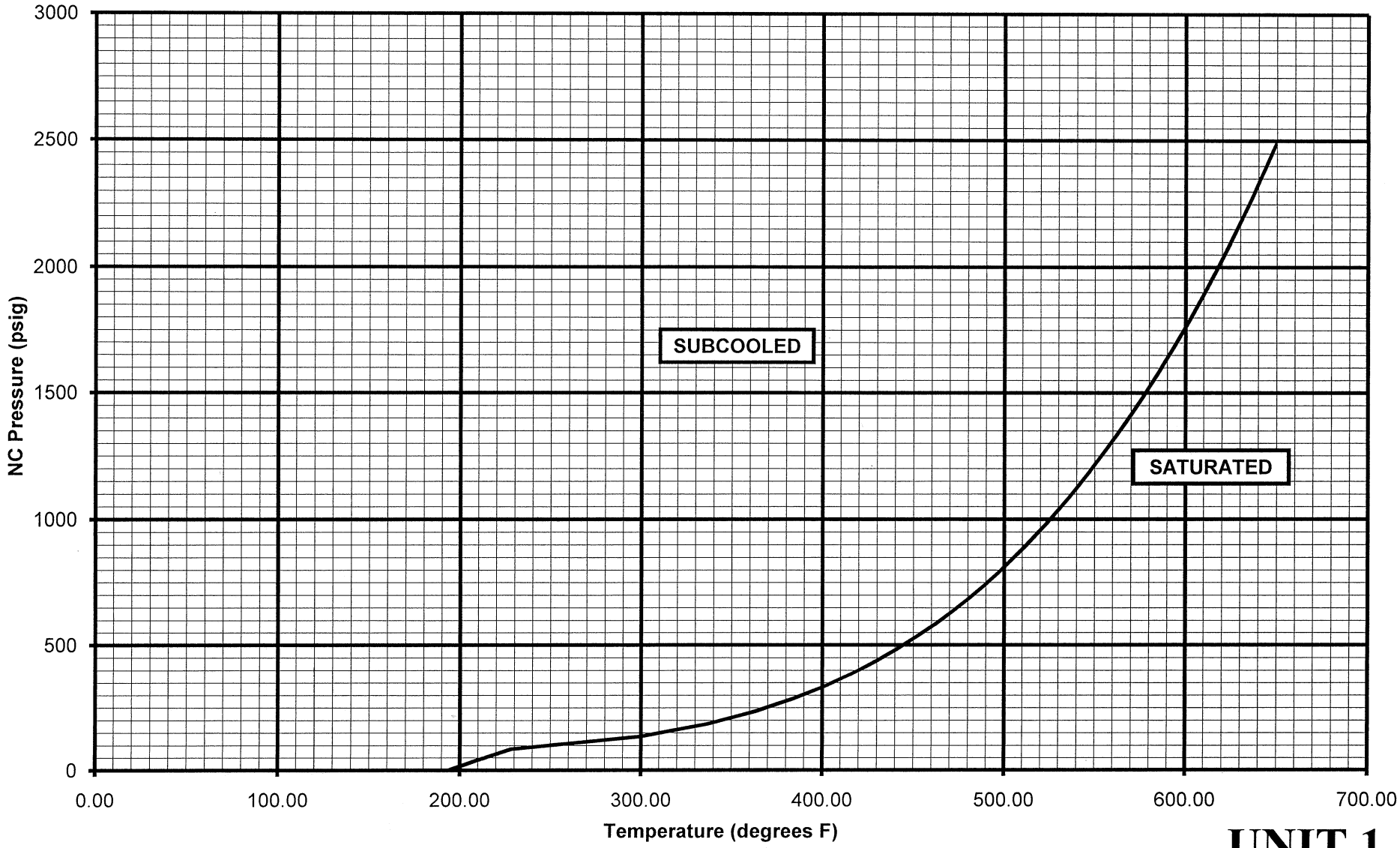
SATURATION CURVE ADJUSTED FOR INSTRUMENT ERROR
(WIDE RANGE NC PRESSURE SENSOR)

NC PRESSURE (psig)	SATURATION TEMP. ADJUSTED FOR INSTRUMENT ERROR (^{O}F)
0.0	193.90
35.3	207.84
85.3	228.15
135.3	299.73
185.3	336.80
235.3	363.07
285.3	383.81
335.3	401.13
385.3	416.09
435.3	429.35
485.3	441.28
535.3	452.17
585.3	462.20
635.3	471.53
685.3	480.25
735.3	488.45
785.3	496.21
885.3	510.56
985.3	523.66
1085.3	535.73
1185.3	546.93
1285.3	557.41
1385.3	567.26
1485.3	576.56
1585.3	585.37
1685.3	593.76
1785.3	601.75
1885.3	609.39
1985.3	616.71
2085.3	623.74
2185.3	630.50
2285.3	637.00
2385.3	643.27
2485.3	649.32

References:
1) Calculation File MCC-1552.08-00-0160, Instrument Uncertainties for ICCM and OAC Subcooling Margin, Rev. 1.
2) MCEI-0400-08, ICCM and OAC Error Adjusted Saturation Tables, Rev. 0.
3) IP/0/A/3000/18, ICCM-86 Programming and Operation, approved 12/3/91.

UNIT 1

OP/1/A/6100/22
ENCLOSURE 4.3 - CURVE 1.10B
SATURATION CURVE ADJUSTED FOR INSTRUMENT ERROR
(WIDE RANGE NC PRESSURE SENSOR)



UNIT 1