1. Given the following plant conditions:

   - The reactor has tripped due to a pressurizer steam space leak

   - Safety Injection has automatically initiated

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

   The **MINIMUM** values specified by EOP-E-0, REACTOR TRIP OR SAFETY INJECTION, to transition to EPP-7, SI TERMINATION, to terminate Safety Injection are RCS pressure greater than ___(1)___ PSIG and RCS subcooling based on core exit TCs greater than ___(2)___ degrees F.

   A. (1) 1650
      (2) 30

   B. (1) 1650
      (2) 35

   C. (1) 1715
      (2) 30

   D. (1) 1715
      (2) 35

2. Given the following plant conditions:

   Initial conditions:

   - Reactor Power is 100%
   - Pressurizer level control and letdown is in a normal automatic alignment
   - Only Charging pump “B” is running and its speed controller is in AUTO

   Current conditions:

   - Pressurizer Safety Valve RC-551A, fails 100% open
   - RCS pressure is 2075 PSIG and lowering slowly
   - Reactor will **NOT** trip

   Which ONE(1) of the following completes the statements below?

   RC-551A's lift set point is ___(1)___ psig.

   Based on current plant conditions, long term, LC-459G, MASTER PRESSURIZER LEVEL CONTROLLER, demand signal will ___(2)___ .

A. (1) 2335
   (2) lower

B. (1) 2335
   (2) rise

C. (1) 2485
   (2) lower

D. (1) 2485
   (2) rise

3. Given the following plant conditions:

   - The unit was initially at 100% power

   - A LOCA has occurred

   - RCS pressure is 1300 psig and lowering

   - Tave is 548 F

   - Containment pressure peaked at 4.2 psig

   - The crew is performing actions of EPP-8, Post LOCA Cooldown and Depressurization

   As directed by EPP-8 which one of the following identifies the method that will be used to initiate cooldown of the RCS?

   Initiate cooldown using the...

   A. steam dumps at the maximum achievable rate

   B. steam dumps at no greater than 100°F/hr in the last 60 minutes

   C. steam line PORVs at the maximum achievable rate

   D. steam line PORVs at no greater than 100°/hr in the last 60 minutes

4. Given the following plant conditions:

    - Unit 2 has suffered a LBLOCA

    - Restoration efforts are in progress with the following plant conditions:
        - Core Exit Thermocouples are currently reading 720^{O}F
        - Full Range RVLIS is 45%
        - CV Pressure is currently 11 psig
        - CV Sump Level is 350 inches and rising
        - CV Radiation Levels are > 5 R/hr
        - CV Spray Pumps "A" & "B" have tripped

    FRP-C.1, Response to Inadequate Core Cooling
    FRP-C.2, Response to Degraded Core Cooling
    FRP-J.1, Response to High Containment Pressure
    FRP-J.2, Response to Containment Flooding

    Which ONE(1) of the following completes the statements below?

    Based on the indications above, which Function Restoration Procedures(FRP's) have met entry criteria IAW Critical Safety Function Status Trees(CSFST's):

    A. FRP-C.1 and FRP-J.1

    B. FRP-C.1 and FRP-J.2

    C. FRP-C.2 and FRP-J.1

    D. FRP-C.2 and FRP-J.2

5. Given the following plant conditions:

   - The plant is at 100% power

   - At 0200 the Reactor Operator determined that Seal Injection flow was lost to RCP 'A'

   - The following RCP "A" conditions existed at that time 0205:

Pump Bearing Temperature	Shaft Vibrations	#1 Seal Leakoff Temperature
166ºF	15.2 Mils	148ºF

   - It is now 0215 and the following RCP "A" conditions exist:

Pump Bearing Temperature	Shaft Vibrations	#1 Seal Leakoff Temperature
231ºF	15.3 Mils	222ºF

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

   IAW AOP-018, REACTOR COOLANT PUMP ABNORMAL CONDITIONS, the RCP _____ .

   A. operation may continue. There are no parameters requiring immediate RCP shutdown.

   B. must be shut down due to pump bearing temperature exceeding operating limits.

   C. must be shut down due to pump shaft vibration exceeding operating limits.

   D. must be shut down due to #1 seal leakoff temperature exceeding operating limits.

6. Given the following plant conditions:

   - Shutdown with the RHR System aligned for core cooling

   - RCS level is at (-) 69 inches and stable as read on LI-403 and LI-404

   - Steam Generator Primary Manway removal in progress

   - The "A" RHR pump is running

   - RHR System total flow is oscillating from 2800 to 3500 gpm

   - "A" RHR pump discharge pressure is oscillating

   - RHR HX LO FLOW annunciator, APP-001-A7 alarming

   Based on the above conditions, with of the following identifies the **FIRST** correct action to mitigate the events as directed by AOP-020, LOSS OF RESIDUAL HEAT REMOVAL.

   A. Raise RCS Level

   B. Reduce RHR flow

   C. Stop the "A" RHR Pump

   D. Stop the "B" RHR Pump

7. Given the following plant conditions:

   The control room operating crew has entered FRP-C.2 “Response to Degraded Core Cooling” and the following plant conditions exist:

   - RCP "A" is running

   - RCP's "B" & "C" have been secured

   - CCW flow to RCP "A" motor has just been lost

   - RCP "A" upper thrust bearing temperature has risen to 205 °F

   Based on the above conditions, which one of the following choices:

   (1) describes whether RCP "A" is required to be immediately secured?

   (2) the reason for either securing RCP "A" or allowing it to run?

A. (1) RCP "A" is required to be immediately secured
   (2) bearing and motor damage could occur

B. (1) RCP "A" is required to be immediately secured
   (2) RCP "A" could be pumping two-phase flow through the core

C. (1) RCP "A" is **NOT** required to be immediately secured
   (2) PZR spray is being supplied by loop "A"

D. (1) RCP "A" is **NOT** required to be immediately secured
   (2) RCP "A" is providing single or two-phase flow through the core

8. Given the following plant conditions:

   - The plant is operating at 100% RTP

   - A failure of the pressurizer pressure Master Controller, PC-444J, results in actual pressure lowering to 2185 psig and continuing to lower

   Which ONE(1) of the following completes the statements below?

   If PC-444J is placed in manual per the IMMEDIATE ACTIONS of AOP-019, Malfunction of RCS Pressure Control, the controller's ___(1)_____ arrow would be initially depressed to regain pressure control.

   If spray valve PCV-455A would not close and the reactor was tripped due to lowering pressure, then the minimum RCP(s) required to be secured per EOP-E-0, Reactor Trip or Safety Injection, to stop spray flow is/are RCP ___(2)____.

   A. (1) down
      (2) "B" & "C"

   B. (1) down
      (2) "C"

   C. (1) up
      (2) "B" & "C"

   D. (1) up
      (2) "C"

9. Given the following plant conditions:

   A primary system pipe break with a failure of the reactor to trip (ATWS) has resulted in the following plant conditions:

   - Reactor Power is 12% and lowering

   - CV Pressure is 12 psig and rising

   Which ONE(1) of the following completes the statements below?

   For the above conditions, FRP-S.1 “Response to Nuclear Power Generation/ATWS” states that RCP’s ____(1)____ be tripped.

   Per FRP-S.1, if the Main Turbine is unable to be tripped, uncontrolled RCS cooldown is prevented by **FIRST** performing a ____(2)____ .

   A. (1) should
      (2) Turbine runback

   B. (1) should
      (2) closure of all MSIV's

   C. (1) should **NOT**
      (2) Turbine runback

   D. (1) should **NOT**
      (2) closure of all MSIV's

10. Given the following plant conditions:

    - The plant is at 100% RTP

    - The following Radiation Monitors go into alarm:

        - Condenser Air Ejector Gas Monitor, R-15

        - Condensate Polisher Waste Effluent Monitor, R-37

        - S/G Sample Radiation Monitor, R-19A

        - "A" Main Steam Line N-16 Detector, R-24A

    Which ONE(1) of the following describes the correct response to the above given conditions?

    A. Condensate Polishing Building Sump pumps TRIP.
       V1-31, Blowdown Isolation Valve to Catch Basin, CLOSES.

    B. FCV-1933A and B, S/G A Blowdown Sample Isolation Valves, CLOSE.
       Condensate Polishing Building Sump pumps TRIP.

    C. FCV-1933A and B, S/G A Blowdown Sample Isolation Valves, CLOSE.
       RCV-10549, Condensate Polisher Discharge to Storm Drains, CLOSES.

    D. V1-31, Blowdown Isolation Valve to Catch Basin, CLOSES.
       RCV-10549, Condensate Polisher Discharge to Storm Drains, CLOSES.

11. Given the following plant conditions:

    - All Steam Generators are faulted

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

    _____ is the basis for a minimum of 80 gpm indicated AFW flow to each Steam Generator per EPP-16, UNCONTROLLED DEPRESSURIZATION OF ALL STEAM GENERATORS.

    A. Preventing Steam Generator dryout

    B. Prevent water hammer in the feed rings

    C. Meeting minimum heat sink flow requirements

    D. Ensure the feed lines stay warm to prevent excessive thermal shock to the feed lines during recovery actions

12. Given the following plant conditions:

- The unit has entered EOP-E-0, REACTOR TRIP OR SAFETY INJECTION, due to a Safety Injection

- Steam generator narrow range levels following the reactor trip **lowered to and are currently**:

  - S/G "A" is 16% and stable

  - S/G "B" is 17% and stable

  - S/G "C" is 17% and stable

- Operators are currently performing the step in EOP-E-0 that says "Check AFW Pumps- RUNNING"

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

The SDAFW pump is __(1)__ . IAW with EOP-E-0, the crew will __(2)__ .

A. (1) OFF
   (2) manually start the SDAFW pump

B. (1) OFF
   (2) check AFW header section valves FULL OPEN

C. (1) ON
   (2) manually stop the SDAFW pump

D. (1) ON
   (2) check SDAFW pump discharge valves FULL OPEN

13. Given the following plant conditions:

- A cool down of <100°F/hr is in progress per EPP-1, Loss of All AC, using Steam Line PORVs

Which ONE(1) of the following completes the statements below?

IAW EPP-1, the crew will depressurize intact S/G's to ___(1)___ psig. During the depressurization, the crew will check RCS Cold Leg Temperatures greater than ___(2)___ °F.

A. (1) 140
   (2) 355

B. (1) 140
   (2) 290

C. (1) 240
   (2) 355

D. (1) 240
   (2) 290

14. Given the following plant conditions:

Initial Conditions:

- Unit 2 was at 100% power

- A Loss of all Offsite Power (LOOP) has occurred

- Operators entered EPP-5, NATURAL CIRCULATION COOLDOWN

Current Conditions:

- Emergency Diesel Generators continue to operate normally

- Operators have just completed the step in EPP-5 to check cool down rate required –GREATER THAN limits, and have determined that a transition to EPP-6, NATURAL CIRCULATION COOL DOWN WITH STEAM VOID IN VESSEL, is not required

- CRDM Cooling Fan HVH-5A is running

- CRDM Cooling Fan HVH-5B is NOT running

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

IAW EPP-5, the **MINIMUM** value for subcooling is __(1)__ ^{o}F and you must cool down less than __(2)__ ^{o}F/hr to preclude formation of a steam void in the vessel upper head.

A. (1) 55
   (2) 10

B. (1) 100
   (2) 10

C. (1) 55
   (2) 25

D. (1) 100
   (2) 25

15. Given the following plant conditions:

- Unit was at 100% power
- Loss of a Vital Instrument Bus occurred
- The control room crew has just completed the Immediate Actions of AOP-024, LOSS OF INSTRUMENT BUS

The Immediate Action, “Place the Main Turbine in Manual,” is procedurally directed to be performed for loss of ANY Instrument Bus, without taking time at that point to diagnose which bus was lost.

Which ONE(1) of the following completes the statements below?

The **BASIS** for the action is to mitigate the effects of a loss of Instrument Bus ___(1)___ .

This is because a continuous turbine Load Reference runback would occur if the turbine were in Automatic, making an automatic reactor trip unavoidable because all ___(2)___ .

A. (1) 1
   (2) Pressurizer spray valve control is lost

B. (1) 1
   (2) Feedwater Regulating Valve M/A stations are lost

C. (1) 4
   (2) Pressurizer spray valve control is lost

D. (1) 4
   (2) Feedwater Regulating Valve M/A stations are lost

16. Given the following plant conditions:

- Plant is at 35% RTP
- APP-002-E7 (INST AIR COMP D TRIP) in alarm
- APP-002-F7 (INST AIR HDR LO PRESS) in alarm
- AOP-017 (LOSS OF INSTRUMENT AIR) is in progress
    - Station Air and Instrument Air have been cross-connected
    - Transition has been made to AOP-017; Section A (Modes 1 AND 2)
    - Instrument Air pressure is 63 psig
    - "B" and "C" S/Gs Levels are at 41% and slowly lowering

Which ONE(1) of the following completes the statment below?

The operating crew is required to_____ while continuing in AOP-017.

A. dispatch operator(s) to cross-connect Station Air and Construction Air

B. trip the reactor and Go to EOP-E-0 (Reactor Trip Or Safety Injection)

C. trip the turbine and implement AOP-007 (Turbine Trip below P-8)

D. lower turbine load as necessary to maintain feed and steam flows matched

17. Which ONE(1) of the following completes the statements below?

In accordance with EPP-20, LOCA OUTSIDE CONTAINMENT:

The **FIRST** flowpath to be isolated from the RCS when attempting to isolate an RCS leak outside containment will be associated with ___(1)___ .

The RCS parameters to be monitored to confirm that the RCS leak has or has **NOT** been isolated is ___(2)___ .

A. (1) RHR
   (2) RCS Pressure

B. (1) RHR
   (2) PZR Level

C. (1) RCP Seal Return
   (2) RCS Pressure

D. (1) RCP Seal Return
   (2) PZR Level

18. Given the following plant conditions:

- A reactor trip has occurred due to a trip of both Main Feed Pumps

- The following conditions exist:

  - The crew has recently entered FRP-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK, after completion of immediate actions of EOP-E-0, REACTOR TRIP OR SAFETY INJECTION

  - The BOP operator notes the following annunciators are lit:

    - APP-007-F1, AFW PMP A LO DISCH PRESS/MTR TRIP
    - APP-007-F2, AFW PMP B LO DISCH PRESS/MTR TRIP
    - APP-007-F5, SDAFW PMP LO DISCH PRESS TRIP

  - SG wide range levels are: A: 8 % B: 15 % C: 16 %

  - All SG pressures are 1035 psig

  - RCS pressure is 2300 psig

  - CST level is 5% and lowering due to sabotage and is **INACCESSIBLE**

  - Condensate System is **AVAILABLE**

OP-402, AUXILIARY FEEDWATER SYSTEM
Attachment 2 of FRP-H.1, SW BACKUP TO MDAFW PUMPS

Which ONE(1) of the following completes the statements below?

In accordance with FRP-H.1, based on the CST concerns, Service Water backup supply is required to be aligned to both ___(1)___ .

After action has been taken to address the CST concerns, for the given conditions, the **NEXT** major action taken to restore heat sink IAW FRP-H.1 is to ___(2)___ .

A. (1) MDAFW pumps **AND** SDAFW pump IAW OP-402
   (2) initiate RCS Bleed and Feed

B. (1) MDAFW pumps **ONLY** IAW Attachment 2 of FRP-H.1
   (2) initiate RCS Bleed and Feed

C. (1) MDAFW pumps **AND** SDAFW pump IAW OP-402
   (2) attempt to establish Main Feedwater flow

D. (1) MDAFW pumps **ONLY** IAW Attachment 2 of FRP-H.1
   (2) attempt to establish Main Feedwater flow

19. The plant is at 100% power when the requirements of LCO 3.2.4, QPTR, are not satisfied.

    Which ONE(1) of the following completes the statements below?

    The maximum power level at which the LCO will no longer apply is ___(1)___ %. The reason for the power level stated in the LCO applicability statement is to ___(2)___ .

    A. (1) 15
       (2) prevent unanalyzed xenon effects on power distribution during subsequent power increases

    B. (1) 15
       (2) achieve a condition where the Quadrant Power Distribution is no longer a significant concern to safety analyses

    C. (1) 50
       (2) prevent unanalyzed xenon effects on power distribution during subsequent power increases

    D. (1) 50
       (2) achieve a condition where the Quadrant Power Distribution is no longer a significant concern to safety analyses

20. Given the following plant conditions:

- Turbine load was reduced from 95 to 90% to support scheduled maintenance.

- Control Bank D was inserted from 210 to 197 steps during the load reduction for axial flux control.

- At 90% power, the Reactor Operator immediately reports that two of the Control Bank D rods, D-8 and H-8, IRPI(s) remain at 210 steps and did not appear to move.

- APP-005-E2, ROD CONT SYSTEM URGENT FAILURE – NOT illuminated

- All Power Range NI's indicate 90%

Which ONE(1) of the following completes the statements below?

In accordance with AOP-001, Malfunction of Reactor Control System, **UNTIL** the problem is determined to be either an IRPI indicator(s) issue or actual stuck rods, Tave may be maintained on program using ___(1)___ .

SUBSEQUENTLY, I&C Maintenance and Reactor Engineering support determined that the problem with D-8 was an IRPI indication problem and only H-8 is misaligned.

All Lift Coil Disconnect Switches for Control Bank D rods except H-8 ___(2)___ be placed in the OFF position to support rod realignment per AOP-001, Section B.

A. (1) Turbine load adjustment
   (2) will

B. (1) Turbine load adjustment
   (2) will **NOT**

C. (1) Control Bank D
   (2) will

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

21. Given the following plant conditions:

Initial conditions:

- Unit 2 was at 100% power

- A manual reactor trip was unsuccessfully attempted due to a Feedwater Controller malfunction

- The crew has entered FRP-S.1, RESPONSE TO NUCLEAR POWER GENERATION/ATWS

Current Conditions:

- Operators have just reached the step in FRP-S.1 to initiate Emergency Boration

Which ONE(1) of the following completes the statements below?

To maximize borated water flow to the RCS, FRP-S.1 states that the HIC-121 potentiometer, “Charging Controller – DEMAND SIGNAL” is to be established at ____(1)____ %.

Per FRP-S.1, ____(2)____ is the preferred, highest Boration rate, Charging Pump supply source.

MOV-350, BA TO CHARGING PMP SUCT
CVC-358, RWST TO CHARGING PUMP SUCTION

A. (1) 0
   (2) MOV-350

B. (1) 0
   (2) CVC-358

C. (1) 100
   (2) MOV-350

D. (1) 100
   (2) CVC-358

22. Given the following plant conditions:

- The plant is operating at 100% RTP
- 'A' Charging Pump is in Auto and its speed is lowering
- Pressurizer Backup Group 'A' heaters are in AUTO and have energized
- Backup Group 'B' heaters are in ON

Which ONE(1) of the following completes the statements below?

Based on these indications, the reference leg for ___(1)___ is leaking. With no operator action, a letdown isolation signal will eventually occur. Following the isolation, Backup Group 'B' heaters will be ___(2)___ .

A. (1) LT-459
   (2) energized

B. (1) LT-460
   (2) energized

C. (1) LT-459
   (2) de-energized

D. (1) LT-460
   (2) de-energized

23. Given the following plant conditions:

- 0800 The reactor is shut down in Mode 6 and refueling of the core is in progress. All Source Range Nuclear Instrument channels and Post Accident Monitor Source Range channels are operable. Audio count rate is operable and selected to N-32.

- 0810 Source Range Nuclear Instrument channel N-31 power supply failure causes detector supply voltage to slowly lower by approximately 200 volts.

- 0820 N-31 power supply output is 0 volts and N-31 has been declared inoperable.

Which ONE(1) of the following completes the statements below?

At 0810 Control room indication of N-31 will be ___(1)___ as compared to N-32.

At 0825 the crew commences the required logging associated with PAM instrumentation.

At 0830 In accordance with Tech Spec 3.9.2, core alterations ___(2)___ continue.

A. (1) the same
   (2) may

B. (1) the same
   (2) may **NOT**

C. (1) lower
   (2) may

D. (1) lower
   (2) may **NOT**

24. Given the following plant conditions:

- Power ascension is in progress during a plant startup with the following power range nuclear instrument readings:
  - N-41 = 10.5%
  - N-42 = 10.5%
  - N-43 = 9.0%
  - N-44 = 9.5%
- Intermediate range nuclear instrument (N-35) has been declared inoperable due to a loss of its compensating voltage.
- Per APP-005, the CRS has directed you to bypass N-35 in accordance with OWP-001, NUCLEAR INSTRUMENTATION.
- You have just placed the intermediate range level trip switch for N-35 in the BYPASS position.

Given the above plant conditions, which one of the following describes the status of LCO 3.3.1, RPS ISNTRUMENTATION, for the Intermediate Range Neutron Flux Function **AND** the actions (if any) that are needed to comply with LCO 3.3.1?

A. 3.3.1 is **NOT** applicable because power is >P-10

B. 3.3.1 is **NOT** applicable because power is >P-6 but <P-10

C. 3.3.1 is applicable, power must be lowered <P-6

D. 3.3.1 is applicable, raise thermal power >P-10

25. Given the following plant conditions:

- Unit 2 is at 100% power

- Control Room Air Cleaning Fan, HVE-19A, is tagged out for scheduled motor inspection

- A valid high radiation alarm on R-1 occurs

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

Control room exhaust fan, HVE-16, is shutdown ___(1)___ and Aux Building Supply Fan, HVS-1 ___(2)___ required to be shutdown.

A. (1) automatically
(2) is

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

C. (1) manually
(2) is

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

26. Given the following plant conditions:

- Unit 2 is currently operating at 100% RTP

- A fire has been reported in a LHRA

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

IAW FP-001, FIRE EMERGENCY, prior to authorizing entry into this fire area, a Radiological Controls (RC) brief ____(1)____ required and an RC Technician ____(2)____ required to enter the area with the Fire Brigade.

A. (1) is still
(2) is

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

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

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

27. Given the following plant conditions:

- A loss of off-site power occurred 15 minutes ago

- The crew is performing EOP-ES-0.1, Reactor Trip Response

- The BOP is verifying Natural Circulation in accordance with ES-0.1 Attachment 1, Natural Circulation Verification:

  - RCS pressure is 1800 psig and stable

  - SG pressures are all 1000 lowering

  - RCS Thot is 586^{o}F and trending down

  - RCS Tcold is 547^{o}F and trending down

  - Core Exit Thermocouple temperature is 591^{o}F and trending down

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

The Natural Circulation criteria in Attachment 1 ___(1)___ met. Over the next 60 minutes, RCS Core Delta T will ___(2)___ .

A. (1) are
   (2) lower

B. (1) are
   (2) rise

C. (1) are **NOT**
   (2) lower

D. (1) are **NOT**
   (2) rise

28. Given the following plant conditions:

- Unit 2 was at 35% power, End of Life (EOL) following 300 days of continuous operation

- A bus fault has resulted in loss of 4kV Bus 4

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

Based on the current conditions, RCP B has tripped on ____(1)____ .

Two minutes following the loss of RCP B, SG B steam flow is ____(2)____ than SG's "A" and "C".

A. (1) under-frequency
   (2) higher

B. (1) under-frequency
   (2) lower

C. (1) under-voltage
   (2) higher

D. (1) under-voltage
   (2) lower

29. Given the following plant conditions:

- The following sequence of events has occurred on Unit 2:

  - 0900: CVC-381, “RCP Seal Return Isolation” is closed and cannot be re-opened

  - 0903: Receipt of annunciator APP-001-C1, “RCP THERM BAR COOL WTR HI FLOW”

  - 0904: Receipt of annunciator APP-001-D1, “RCP THERM BAR COOL WTR LO FLOW”

  - 0905: Unit 2 is at 70% RTP

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

Based on these conditions, a #1 seal return flow-path is still available to the ___(1)___ . AOP-014 ___(2)___ state that the RCP should be secured within 24 hours.

Reactor Coolant Drain Tank (RCDT)
Pressurizer Relief Tank (PRT)

A. (1) RCDT
   (2) is

B. (1) PRT
   (2) is

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

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

30. Given the following plant conditions:

- The plant is operating at 100% power with CVCS in its normal letdown alignment when the Letdown Temperature element (TE-144) fails upscale.

- Pressurizer Pressure Control is in MANUAL

- Rod Control is in MANUAL

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

Based on the conditions above, VCT/Demineralizer Diversion Valve (TCV-143, NON GEN HX OUTLET TEMP) will ___(1)___ and RCS temperature and pressure will ___(2)___.

A. (1) bypass the demineralizers
   (2) remain unchanged

B. (1) bypass the demineralizers
   (2) lower

C. (1) maintain its current position
   (2) rise

D. (1) maintain its current position
   (2) lower

31. Given the following plant conditions:

- A Large Break LOCA and Loss of Offsite Power have occurred
- EDG B tripped while starting
- RWST level is 9%
- Alignment to the CV Sump has been completed
- CV Pressure is currently 12 psig

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

SI-844A and B, CV Spray Pump Suction Isolation Valves, will be __(1)__. RHR Pump A __(2)__ **capable** of supplying suction to CV Spray Pump B.

A. (1) closed
   (2) IS

B. (1) closed
   (2) IS NOT

C. (1) open
   (2) IS

D. (1) open
   (2) IS NOT

32. Given the following plant conditions:

- Plant startup activities following a refueling outage are in progress
- The Pressurizer is solid
- RCP "A" is running
- PCV-145, LOW PRESSURE LETDOWN VALVE, has been placed in MANUAL
- GP-002, COLD SHUTDOWN TO HOT SUBCRITICAL AT NO LOAD TAVG, Section 8.2 (Instructions for Plant Heatup up to 199ºF) is in progress
- RCS temperature is 143º F and rising

HCV-758, RHR HX DISCH FLOW
FCV-605, RHR HX BYPASS VALVE

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

As the RCS heats up the operators will adjust PCV-145 by pushing the ___(1)___ button to control RCS pressure. The operators will throttle ___(2)___ to control RCS heat up rate.

A. (1) down
   (2) HCV-758

B. (1) down
   (2) FCV-605

C. (1) up
   (2) HCV-758

D. (1) up
   (2) FCV-605

33. Given the following plant conditions:

- The reactor is at 100% RTP

- A CV Vacuum release is in progress

- A Safety Injection signal is received

PCV-1922 A/B, CONTAINMENT ISOLATION VALVE SEAL WATER (IVSW)
RHR-744 A/B, LOOP DISCHARGE TO RCS ISOLATION VALVES
V12-12/13, VACUUM RELIEF VALVES
SI-867 A/B, BIT INJECTION TANK INLETS

Which of the following valves will **NOT** reposition automatically due the above conditions?

A. PCV-1922 A/B

B. V12-12/13

C. SI-867 A/B

D. RHR-744 A/B

34. Given the following plant conditions:

- The unit is at 100% power

- APP-003-B3, PRT HI TEMP, is in alarm

- The station is addressing a gradual rising PRT temperature and level due to seat leakage on a pressurizer safety valve as a mitigating action until the unit is removed from service for repairs.

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

In accordance with APP-003-B3, Pressurizer Relief Tank Control System, actions to drain the PRT and makeup with primary water ___(1)___ allowed to be performed simultaneously.

If the leaking pressurizer safety valve subsequently fails open, the PRT is protected from exceeding its design pressure by rupture disks that operate at the minimum pressure of ___(2)____ psig.

A. (1) are
(2) 100

B. (1) are
(2) 120

C. (1) are **NOT**
(2) 100

D. (1) are **NOT**
(2) 120

35. Given the following plant conditions:

- The plant is at 100% power, steady-state

- The controller for TCV-144, NON-REGEN HX OUTLET TEMP CONTROL VALVE, has just been placed in MANUAL due to erratic operation

Subsequently

- A 60 gpm orifice is placed in service, replacing the 45 gpm orifice that had been in service by itself

- No adjustments have been made to TCV-144

Which ONE(1) of the following completes the statements below?

Reactor Coolant System temperature will ___(1)___ due to reactivity effects. If letdown temperature continues to rise, TCV-143, VCT/DEMIN DIVERSION, will divert letdown flow to the VCT at ___(2)___ .

A. (1) rise
(2) 130º F

B. (1) rise
(2) 135º F

C. (1) lower
(2) 130º F

D. (1) lower
(2) 135º F

36. Given the following plant conditions:

- Unit is in Mode 2

- The crew is performing actions of AOP-014, Component Cooling Water System Malfunction, Section D, due to low CCW System flow and rising temperature

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

Any Reactor Coolant Pump whose ___(1)___ bearing temperature exceeds ___(2)___ must be stopped.

A. (1) motor
(2) 185º F

B. (1) pump
(2) 185º F

C. (1) motor
(2) 200º F

D. (1) pump
(2) 200º F

37. Given the following plant conditions:

- The plant is operating at 100% power
- Charging pump "A" is running in AUTO
- Charging pump "B" is running in MAN at 20% demand
- Pressurizer level control switch, LM-459 is selected to NORM
- Pressurizer Backup Heater "A" Switch is ON
- All other control systems are in AUTO

Subsequently:

- Pressurizer level transmitter, LT-460, fails downscale

Which ONE(1) of the following completes the statements below?

Charging Pump "A" speed will ___(1)___ and APP-003-B7, PZR PROT LO LEVEL ___(2)___ illuminate.

A. (1) rise
(2) will

B. (1) lower
(2) will

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

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

38. Given the following plant conditions:

- MST-021, “Reactor Protection Logic Train “B” at Power”, is currently in progress with the following configuration:
  - “A” Trip Breaker is racked in and closed
  - “A” Bypass Breaker is racked out
  - “B” Trip Breaker is racked in and open
  - “B” Bypass Breaker is racked in and closed
- The Unit CRS has determined that conditions requiring a Manual Trip have been met. Upon actuation of **BOTH** RTGB Manual Trip Pushbuttons by the OAC, the reactor has failed to trip.
- No AUTOMATIC trip setpoints have been reached

Which ONE(1) of the following completes the statements below?

Based on the above conditions, the “B” Bypass Breaker ____(1)____ could have contributed to the failure of the reactor to TRIP. The crew ____(2)____ required to enter EOP-E-0, “Reactor Trip or Safety Injection”.

A. (1) Shunt Trip Coil
   (2) is

B. (1) Under-voltage Coil
   (2) is

C. (1) Shunt Trip Coil
   (2) is **NOT**

D. (1) Under-voltage Coil
   (2) is **NOT**

39. Given the following plant conditions:

- Power is 100% RTP

- Annunciator APP-009-B8, “480V NORM BUS OVLD” is received

- Annunciator APP-009-E7, “480V GRD FAULT” is received

Subsequently:

- The Field AO reports that the following breakers have TRIPPED and are OPEN:

  - 52/15B, “MAIN BKR. 480V BUS 3”

  - 52/14A, “ ‘B’ ROD DRIVE MG”

- In addition, the Field AO reports that the 480V Bus 3 “GROUND FAULT RELAY FLAG” has actuated.

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

Based on the above conditions, receipt of annunciator APP-005-E6, “ROD CONT MG SETS TRIPPED” ____(1)____ expected. Upon the tripping of breaker 52/15B the ground fault condition cleared. With no further operator action APP-009-E7 will ____(2)____ extinguish.

A. (1) is
   (2) Automatically

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

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

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

40. Given the following plant conditions:

- The unit is operating at 100% power.

- PZR Pressure channel PT-455, PZR PRESSURE PROTECTION CHANNEL I, is failed, with all bistables in the TRIPPED condition.

- A subsequent electrical fault results in loss of Instrument Bus 3.

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

Which ONE (1) of the following describes the impact that the loss of Instrument Bus 3 has on the plant? A reactor trip occurs, _____.

A. but **NO** SI occurs

B. and an SI occurs, but **ONLY** Train 'A' Engineered Safeguards loads are automatically started by the sequencers

C. and an SI occurs, but **ONLY** Train 'B' Engineered Safeguards loads are automatically started by the sequencers

D. and an SI occurs, with **BOTH** trains of Engineered Safeguards loads automatically started by the sequencers

41. Given the following plant conditions:

0400:
- The unit is at 100% RTP

- Containment Air Recirculation Cooling units HVH-2, HVH-3, and HVH-4 are in operation

- Containment Air Recirculation Cooling unit HVH-1 has been stopped for breaker maintenance that will be performed on the next shift

0500:
- A large break LOCA has occurred

- SI has actuated

0510:
- The SI signal has been reset

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

At 0515, the normal air inlet damper for HVH-1 is __(1)__ and the status of HVH-2 fan is __(2)____.

A. (1) closed
(2) off

B. (1) closed
(2) on

C. (1) open
(2) off

D. (1) open
(2) on

42. Given the following plant conditions:

- The unit tripped from 100% power with the following conditions:

- The Crew is in EOP-E-1, LOSS OF REACTOR OR SECONDARY COOLANT, with a Safety Injection in progress due to a Large Break LOCA

- Containment pressure peaked at 15 psig and currently is 6 psig and lowering slowly

-The following annunciators are in alarm:

- APP-002-F2 SPRAY ADD TANK LO LEVEL

- APP-002-A3 RWST HI/LO LVL

-Spray additive tank level is 10% and lowering slowly

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

The operators will close CV spray additive tank discharge valves, SI-845A and SI-845B ___(1)____ and go to EPP-9, TRANSFER TO COLD LEG RECIRCULATION ___(2)___ .

A. (1) at this time
(2) when alarm APP-002-B3 RWST LO-LO LVL actuates

B. (1) at this time
(2) at this time

C. (1) when containment pressure is less than 4 psig
(2) when alarm APP-002-B3 RWST LO-LO LVL actuates

D. (1) when containment pressure is less than 4 psig
(2) at this time

43. Given the following plant conditions:

- A loss of offsite power and a reactor trip has occurred
- APP-007-F5, SD AFW PMP LO DISCH PRESS TRIP alarms and remains locked in
- Two minutes later the pump has been verified to be coasting down locally due to an overspeed trip

Which ONE(1) of the following completes the statements below?

SDAFW Pump Steam Shutoff Valves, V1-8A, V1-8B, and V1-8C should be ___(1)___ at this time. The BOP operator is required to ___(2)___ closure of SDAFW Pump Discharge Valves, V2-14A, V2-14B, and V2-14C.

A. (1) open
   (2) verify automatic

B. (1) open
   (2) perform manual

C. (1) closed
   (2) verify automatic

D. (1) closed
   (2) perform manual

44. Given the following plant conditions:

- Reactor power is at 62% RTP

- S/G "C" water level is stable at 52%

- FCV-498, “S/G ‘C’ FWRV” has been placed in local-handwheel control in accordance with OP-403, “FEEDWATER SYSTEM” for level control circuit maintenance

- Field personnel have reached OP-403 step 8.4.3.2.n, “INITIATE the required maintenance activities.”

Subsequently:

- I&C Maintenance reports that, locally, the FCV-498 Bailey Positioner has failed and is out-putting a max signal

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

Based on the above conditions, FCV-498 ____(1)____ reposition.

Should “MFP A” trip during the above conditions, AOP-010, “MAIN FEEDWATER/CONDENSATE MALFUNCTION” will direct Operators to ____(2)____ .

A. (1) will
(2) perform a Reactor Trip

B. (1) will
(2) stabilize reactor power <60%

C. (1) will **NOT**
(2) perform a Reactor Trip

D. (1) will **NOT**
(2) stabilize reactor power <60%

45. Given the following plant conditions:

- The CST has developed a leak

- The reactor is in Mode 1; Mode 3 preparations are currently in progress

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

OP-402, “AUXILIARY FEEDWATER SYSTEM” states that once CST level is below ___(1)___ %, the ___(2)___ Driven AFW pump(s) require(s) venting prior to use, if not already in operation.

A. (1) 10
(2) Motor

B. (1) 10
(2) Steam

C. (1) 34
(2) Motor

D. (1) 34
(2) Steam

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

Emergency Diesel Generator (EDG) amperage shall NOT exceed ___(1)___ amps, to prevent exceeding the current rating of the ___(2)___ .

A. (1) 3200
(2) EDG output breaker

B. (1) 3200
(2) generator stator windings

C. (1) 4000
(2) EDG output breaker

D. (1) 4000
(2) generator stator windings

47. Given the following plant conditions:

- The plant is at 100% power, steady-state

- A fault in the 230kV switchyard sends trip-open signals to generator output breakers 52/8 & 52/9

- Breaker 52/8 fails to open

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

Generator lockout relay(s) ___(1)___ will actuate **directly from 52/8 failure to open** (do not infer later signals that may actuate either or both lockout relays).

Following the Fast Bus Transfer, if the lockout relay(s) is/are reset with the 52/8 failure-to-open signal still present, ___(2)___ .

A. (1) 86P **AND** 86BU
(2) one or more 4kV bus supply or tie breakers will reposition

B. (1) 86P **AND** 86BU
(2) there will be no effect on 4kV bus alignment

C. (1) **ONLY** 86P
(2) one or more 4kV bus supply or tie breakers will reposition

D. (1) **ONLY** 86P
(2) there will be no effect on 4kV bus alignment

48. Given the following plant conditions:

- A Loss of Offsite Power has occurred

- BOTH EDGs have failed to auto start and cannot be manually started

- EPP-1, LOSS OF ALL AC POWER, has been implemented

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

In accordance with EPP-1, low priority loads __(1)___ required to be shed from Instrument Buses 2 and 3 to minimize the discharge rate of station batteries.

Assuming battery load remains constant, battery current will __(2)__ as terminal voltage lowers.

A. (1) are
(2) rise

B. (1) are
(2) lower

C. (1) are **NOT**
(2) rise

D. (1) are **NOT**
(2) lower

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

EDG “A” auto started and loaded due to a Loss of Offsite Power. The DG speed control ___(1)___ aligned with 0% percent droop.

Following the Blackout Sequencer loading, the 480 Emergency Bus E-1 frequency indicates 58.9 Hz. With no additional action, the speed of DG “A” ___(2)___ be adjusted from the Generator Control Panel using the EDG “A” Speed Control Switch in accordance with OP-604.

A. (1) is
(2) can

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

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

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

50. Given the following plant conditions:

- The unit has entered EPP-1, Loss of All AC Power
- EDG “A” is unavailable due to maintenance
- EDG “B” failed to start
- The Inside AO was dispatched to locally start the “B” EDG
- EDG “B” LOCAL-REMOTE switch was placed in the LOCAL position at the DG Engine Control Panel

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

When the AO depresses the Local Engine Start pushbutton, the engine ___(1)___ automatically prelube.

Assuming the EDG “B” is successfully started and the LOCAL-REMOTE switch remains in the LOCAL position, the EDG “B” output breaker 52/27B ___(2)___ be closed from the RTGB.

A. (1) will
(2) can

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

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

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

51. Given the following plant conditions:

    - The plant is operating at 100% RTP

    - A release of Waste Condensate Tank (WCT) "A" is in progress

    - APP-036-E7, RAD MONITOR TROUBLE, is received

    - BOP reports the FAIL light for R-18, LIQUID WASTE DISPOSAL EFFLUENT monitor, is ON

    Which ONE (1) of the following describes the status of RCV-018, LIQUID WASTE RELEASE ISOLATION VALVE?

    RCV-018 will...

    A. **NOT** automatically close. The release must be terminated manually

    B. automatically close when the monitor FAIL light is illuminated

    C. **NOT** automatically close, and CANNOT be closed from the Waste Disposal Panel

    D. automatically close, and must be reset by cycling the valve's pneumatic controller

52. Given the following plant conditions:

    - Operating at 100% power

    - EDG "B" is unavailable due to emergent maintenance

    - All other systems are in their normal at power configuration

    - The "SU TRANSF OVLD/ PHASE TRIP" alarm energizes due to an overload of breaker 52/17, Start-Up Transformer to 4KV Bus 3.

    Thirty seconds after the above alarm is received, which of the following CCW pumps can be manually started from the main control room?

    A. CCW "A" pump **only**

    B. CCW "B" pump **only**

    C. CCW "C" pump **only**

    D. CCW pumps "A" & "B"

53. Which one of the following completes the statements below regarding the design of the MSIV accumulators?

    MSIV accumulators are designed to maintain a minimum of 58 psig for at least ____(1)____ minutes. Nitrogen ____(2)____ be aligned as a backup motive force for the MSIV's.

    A. (1) 15
       (2) can **NOT**

    B. (1) 30
       (2) can **NOT**

    C. (1) 15
       (2) can

    D. (1) 30
       (2) can

54. Given the following plant conditions:

- The plant was operating at 100% power
- A catastrophic failure of Instrument Air header piping occurred
- IA header pressure is 5 psig and lowering
- APP-001-C1, “RCP THERM BAR COOL WTR HI FLOW,” is in alarm
- APP-001-D1, “RCP THERM BAR COOL WTR LO FLOW,” is in alarm
- Operators are concurrently executing AOP-017, LOSS OF INSTRUMENT AIR and EOP-E-0, REACTOR TRIP OR SAFETY INJECTION
- **ONLY** Charging pump "A" is running at minimum speed per AOP-017

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

LCV-115A, VCT/HI DP TK DIV, will fail to the ____(1)____.

Consider separately:

With the instrument air header depressurized, in order to raise RCP seal injection flow per Section B of AOP-017, you shall ____(2)____.

A. (1) CVCS Hold Up Tank
   (2) throttle closed charging flow valve (HCV-121) from the Main Control Room

B. (1) CVCS Hold Up Tank
   (2) locally throttle RCP seal water flow control valves

C. (1) VCT
   (2) throttle closed charging flow valve (HCV-121) from the Main Control Room

D. (1) VCT
   (2) locally throttle RCP seal water flow control valves

55. Which one of the following describes a correct configuration for the Containment Main Personnel Access Hatch doors and equalizing valves while the airlock is in use for entering/exiting Containment while the plant is in MODE 1?

A. Outer door **OPEN**
Outer door equalizing valve **OPEN**
Inner door **CLOSED**
Inner door equalizing valve **CLOSED**

B. Outer door **OPEN**
Outer door equalizing valve **OPEN**
Inner door **CLOSED**
Inner door equalizing valve **OPEN**

C. Outer door **CLOSED**
Outer door equalizing valve **OPEN**
Inner door **OPEN**
Inner door equalizing valve **CLOSED**

D. Outer door **CLOSED**
Outer door equalizing valve **CLOSED**
Inner door **OPEN**
Inner door equalizing valve **CLOSED**

56. Given the following plant conditions:

- A Reactor trip coincident with a Loss of Offsite Power has occurred

- RVLIS has lost indication

Which ONE(1) of the following completes the statements below?

IAW EPP-6, the crew will cool down from 500°F to 450°F at ___(1)___ °F/hr. During the **FIRST** depressurization, the crew will depressurize to ___(2)___ psig.

A. (1) 100
(2) 1600

B. (1) 50
(2) 1600

C. (1) 100
(2) 800

D. (1) 50
(2) 800

57. The Unit is commencing a Reactor Start Up and is pulling control groups “A” and “B” rods. At 25 steps on the “B” bank an IRPI module for a “B” group rod fails low.

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

Annunciator APP-005-F2 ROD BOTTOM, ROD DROP ___(1)___ be ILLUMINATED and an ERFIS printout for Rod Deviation ___(2)___ occur.

A. (1) will
(2) will

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

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

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

58. Given the following plant conditions:

A Loss of Coolant Accident (LOCA) has been in progress for the last two hours. You have been assigned to monitor plant parameters as indicated on the Main Control Room ICCM plasma displays.

Both Train 'A' and 'B' ICCM plasma displays contain the exact **SAME** indications.

- FULL RANGE RVLIS 100%
- SUBCOOL (T/C) 34°F
- AVG 5 HIGH 605°F
- SUBCOOL (RTD) 37°F
- HIGH RTD 607°F

Operators are **MANUALLY** monitoring the CSF-2, Core Cooling Critical Safety Function Status Tree and have reached the "RCS Subcooling" Decision Block.

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

In accordance with OMM-022, "EMERGENCY OPERATING PROCEDURES USER'S GUIDE" and based on the conditions above, CSFST parameter monitoring ____(1)____ be relaxed to 10-20 minutes.

When monitoring for the "RCS Subcooling" Decision Block, the ICCM plasma display value of ____(2)____ should be used per OMM-022.

A. (1) may
(2) SUBCOOL (T/C)

B. (1) may
(2) SUBCOOL (RTD)

C. (1) may **NOT**
(2) SUBCOOL (T/C)

D. (1) may **NOT**
(2) SUBCOOL (RTD)

59. Which ONE (1) of the following is the power supply for HVE-3, CV Air Iodine Removal Fan?

A. MCC-5

B. MCC-6

C. MCC-9

D. MCC-10

60. Given the following plant conditions:

- Containment particulate and gas monitors R-11 and R-12 are in service

- Containment Purge fan HVE-1A is running

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

If purge fan HVE-1A loses power ___(1)___.

Subsequently:

- R-11 alarmed and is now reading below the alarm setpoint

After resetting the R-11 alarm, manual operation of containment purge inlet and outlet valves ___(2)___ be performed.

A. (1) all containment purge inlet and outlet valves will automatically close
(2) can

B. (1) all containment purge inlet and outlet valves will automatically close
(2) can **NOT**

C. (1) containment purge fan HVE-1B will automatically start
(2) can

D. (1) containment purge fan HVE-1B will automatically start
(2) can **NOT**

61. Given the following plant conditions:

- Boron concentrations in the Spent Fuel Pit (SFP) have just been analyzed to be 1483 ppm.

- The Shift Manager determines that OP-910, SPENT FUEL PIT COOLING AND PURIFICATION SYSTEM, Section 8.4.6 will be used by conservatively applying the note in that procedure to raise boron concentration.

- "NOTE: Each 100 pound bag of granulated boric acid will raise SFP boron concentration by 6 ppm."

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

Based on the information above and the NOTE provided, the **MINIMUM** number of bags of granulated boric acid needed to raise the SFP boron concentration to the **MINIMUM** Tech Spec limit is ___(1)___ bags.

Based on the information above and the NOTE provided, the **MINIMUM** number of bags of granulated boric acid needed to raise the SFP boron concentration to the **MINIMUM** Administrative limit of OP-910 is ___(2)___ bags.

A. (1) 3
   (2) 95

B. (1) 78
   (2) 95

C. (1) 3
   (2) 153

D. (1) 78
   (2) 153

62. Given the following plant conditions:

- Unit 2 is in Mode 6 and refueling activities are in progress with the equipment hatch **REMOVED**

- R-14C, Plant Vent Low Range Noble Gas Monitor is out of service

- A fuel assembly has been visibly damaged during removal from the core

- AOP-013, "Fuel Handling Accident", is in progress

R-2, CV area rad monitor
R-12, CV Air & Plant Vent Radioactive Gas

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

Radiation Monitor ___(1)____ would provide the **FIRST** indications in the control room of a developing leak from the damaged fuel assembly. Once the Rad Monitor is in **ALARM,** IAW AOP-013, the containment purge system is verified ___(2)___ service.

A. (1) R-2
   (2) in

B. (1) R-2
   (2) **NOT** in

C. (1) R-12
   (2) in

D. (1) R-12
   (2) **NOT** in

63. Given the following plant conditions:

- A startup following a refueling outage is in progress with the reactor at 25% power and stable, holding for Chemistry with the following conditions:

- Rod control is in AUTO

- All other systems are in automatic

A 100 MWe load rejection occurs. Which one of the following describes the **OVERALL** response and final condition for Steam Generator water level?

With no operator action, NR S/G water levels will _____ .

A. lower, then return to original level

B. rise, then return to original level

C. rise, then stabilize at a level lower than the original level

D. lower, then stabilize at a level lower than the original level

64. Given the following plant conditions:

Which of the following correctly completes the following statements in accordance with OP-704, Spent Resin Storage Tank, for transferring spent resin from the Spent Resin Storage Tank (SRST) to a High Integrity Container (HIC)?

Which ONE (1) of the following completes the statements below to minimize radiation exposure to site personnel:

The method used to warn personnel of the radiological hazard is/are ___(1)___ .

A flush of the transfer lines__(2)___ required after resin transfer.

A. (1) gates with signs and alarms posted at all doors to the auxiliary building and radwaste building
   (2) is

B. (1) gates with signs and alarms posted at all doors to the auxiliary building and radwaste building
   (2) is **NOT**

C. (1) a PA announcement made to warn unnecessary personel to stay clear
   (2) is

D. (1) a PA announcement made to warn unnecessary personel to stay clear
   (2) is **NOT**

65. Given the following plant conditions:

- The plant is operating at 100% RTP
- The instrument air / station air cross connect bypass filter inlet and outlet valves are tagged out for filter replacement
- A loss of Instrument Air has occurred with pressure currently at 75 psig
- The crew is implementing AOP-017, LOSS OF INSTRUMENT AIR

SA-70, PRIMARY AIR COMP RECEIVER TO STATION AIR HEADER
SA-5, STATION AIR TO INST AIR CROSS CONNECT

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

As pressure lowered, at ___(1)___ psig Instrument Air header pressure, AOP-017 directed an operator to be dispatched to ___(2)___ .

A. (1) 85
(2) open SA-70

B. (1) 80
(2) open SA-70

C. (1) 85
(2) open SA-5

D. (1) 80
(2) open SA-5

66. Which ONE(1) of the following completes the statements below?

IAW OMM-001-2, SHIFT ROUTINES AND OPERATING PRACTICES, the **MINIMUM** number of personnel that are reserved for fire response is ___(1)___ .

The **MINIMUM** number of **SRO's** required for safe shutdown activities when implementing DSP-002, HOT SHUTDOWN USING THE DEDICATED/ALTERNATE SHUTDOWN SYSTEM,
is ___(2)___ .

A. (1) 7
(2) 1

B. (1) 7
(2) 2

C. (1) 5
(2) 1

D. (1) 5
(2) 2

67. Which one of the following includes acceptance criteria for the ECCS following a postulated Loss-of-Coolant Accident, as required by 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear reactors?"

The calculated maximum fuel element cladding temperature shall be maintained less than ___(1)___ degrees F and the maximum cladding oxidation less than ___(2)___ percent.

A. (1) 2200
(2) 1

B. (1) 2200
(2) 17

C. (1) 2500
(2) 1

D. (1) 2500
(2) 17

68. The operating crew is performing actions to place the plant in Mode 5 in accordance with GP-007, “PLANT COOLDOWN FROM HOT SHUTDOWN TO COLD SHUTDOWN” with the following sequence of events:

- 0830 MDAFW Pump "B" placed in service
- 1430 MDAFW Pump "B" secured
- 1432 RHR Pump "A" placed in service
- 1448 RHR Pump "A" secured due to a flow indication problem on FI-608
- 1458 RHR Pump "A" placed in service
- 1505 RHR Pump "A" secured due to a flow indication problem on FI-608
- 1509 RHR Pump "A" placed in service
- 1525 RHR Pump "A" secured due to a flow indication problem on FI-608

FI-608, RHR SYSTEM HEATUP LINE FLOW INDICATION

The time is currently **1530**

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

The maximum number of consecutive pump starts available for MDAFW Pump "B" in accordance with OP-402, AUXILIARY FEEDWATER SYSTEM is __(1)__ .

A 45 minute waiting period prior to restarting RHR Pump "A" __(2)__ required in accordance with OP-201, RESIDUAL HEAT REMOVAL SYSTEM.

A. (1) 2
   (2) is

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

C. (1) 3
   (2) is

D. (1) 3
   (2) is **NOT**

69. Given the following plant conditions:

- The plant is at 100% power

- A malfunction in LC-459G, PRESSURIZER LEVEL, has caused PZR level to increase to 64% over the last 10 minutes. The controller remains in AUTO, with no operator action

- Pressurizer heaters and sprays over-compensated for the rising pressure caused by rising level, and stabilized PZR pressure at 2225 psig by the lowest indicator

- All other RCS parameters are within their normal control bands

The Reactor Operator should notify the CRS that:

A. the reactor should be tripped because a trip setpoint will be reached within the next 2 minutes

B. an entry condition for ITS 3.4.9, Pressurizer, has been met

C. an entry condition for ITS 3.4.1, RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits, has been met

D. entry into AOP-025, RTGB Instrument Failure, is required

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

A release of a Waste Gas Decay Tank ___(1)___ allowed while simultaneously releasing the containment via a **continuous** CV purge.

A release of a Waste Gas Decay Tank is allowed while stack monitor R-14C is out of service ___(2)___ .

A. (1) is
(2) as long as R-14D is operable because the ranges overlap

B. (1) is **NOT**
(2) as long as R-14D is operable because the ranges overlap

C. (1) is
(2) as long as an independent sample of the tank to be released has been performed

D. (1) is **NOT**
(2) as long as an independent sample of the tank to be released has been performed

71. Given the following plant conditions:

- SBLOCA is in progress
- CV Ventilation Isolation valves did not close

EOP-E-0: REACTOR TRIP OR SAFETY INJECTION

Which ONE(1) of the following completes the statements below?

IAW EOP-E-0 Attachment 1, Auto Action Verification, the crew will depress the __(1)__ push button on R-11 or R-12 to initiate the automatic actions that should have occurred.

Once the automatic actions have occurred, the R-11/R-12 vacuum pump __(2)__ have to be secured.

A. (1) H.V. OFF
(2) will

B. (1) H.V. OFF
(2) will **NOT**

C. (1) Alarm/Reset
(2) will

D. (1) Alarm/Reset
(2) will **NOT**

72. Given the following conditions:

- While entering the plant to relieve the shift, you notice smoke coming from the Reactor Auxiliary Building.

- You have NOT logged onto any RWP or obtained proper dosimetry (EAD).

- Your assistance is required in the Auxiliary Building.

Which one of the following is allowed/required IAW FP-001, FIRE EMERGENCY for the stated conditions?

A. An exception to the requirement for an EAD **AND** RWP login is allowed for qualified members of the Fire Brigade (No RC Tech is required to invoke the exception).

B. An EAD must be obtained **AND** RWP login must be completed prior to Auxiliary Building entry.

C. An exception to the requirement for obtaining an EAD AND RWP login is allowed **ONLY IF** an RC Tech is present to monitor personnel entry/exit to the Auxiliary Building.

D. RWP login is **NOT** required, and emergency dosimetry (EAD) is obtained from the RCA entrance.

73. Given the following plant conditions:

- A reactor shutdown is in progress in accordance with GP-006-1, “NORMAL PLANT SHUTDOWN FROM POWER OPERATION”
- Reactor Power is 3%
- The Main Turbine has been shutdown
- The electric plant is in a normal shutdown alignment with buses supplied from the SUT

Subsequently:

- Operators have depressed both Reactor Trip pushbuttons in accordance with GP-006-1
- Reactor Trip breakers remain CLOSED
- Intermediate Range SUR indication is fluctuating between 0.1 and -0.1 DPM

EOP-E-0, REACTOR TRIP OR SAFETY INJECTION
FRP-S.1, RESPONSE TO NUCLEAR POWER GENERATION/ATWS

Which answer below describes the required crew response to the above conditions?

A. Enter EOP-E-0, do **NOT** enter FRP-S.1

B. Enter FRP-S.1, do **NOT** enter EOP-E-0

C. Enter EOP-E-0 **AND** FRP-S.1

D. Do **NOT** enter EOP-E-0 OR FRP-S.1

74. Given the following plant conditions:

- The plant is at 100% power

- Control Room receives APP-036-H5, ANNUN SYS DC PWR LOST

- The plant remains stable

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

As Balance of Plant Operator, you direct the Turbine Building Auxiliary Operator to check Breaker 10, Annunciator Panel (RTGB), on Distribution Panel ___(1)___ .

Per OP-603, Electrical Distribution, Precautions & Limitations, if there is no evidence of abnormality present, the breaker can be reset ___(2)___ .

A. (1) A
(2) one time

B. (1) B
(2) only after consultation with Engineering

C. (1) A
(2) only after consultation with Engineering

D. (1) B
(2) one time

75. Given the following plant conditions:

- The unit is operating at 100% power

- Grid frequency is beginning to lower

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

The highest frequency, below which entry into AOP-026 (Grid Instability) will be required, is ___(1)___ Hz.

The highest frequency, below which an automatic Reactor trip will occur, is ___(2)___ Hz.

A. (1) 59.8
   (2) 58.2

B. (1) 59.8
   (2) 58.4

C. (1) 59.0
   (2) 58.2

D. (1) 59.0
   (2) 58.4

You have completed the test!

ANSWER KEY REPORT

for ILC-14 RO NRC Exam Test Form: 0

#	ID	Points	Type	Answers 0
1	007 EA1.03 1	1.00	MCS	B
2	008 AK2.03 1	1.00	MCS	C
3	009 EK2.03 1	1.00	MCS	B
4	011 EG2.4.21 1	1.00	MCS	C
5	022 AA1.09 1	1.00	MCS	B
6	025 AA2.07 1	1.00	MCS	B
7	026 AK3.03 1	1.00	MCS	D
8	027 AG2.4.49 1	1.00	MCS	A
9	029 EG2.4.31 1	1.00	MCS	C
10	038 EA1.10 1	1.00	MCS	C
11	040 AK3.04 1	1.00	MCS	A
12	054 AA2.03 1	1.00	MCS	B
13	055 EK1.02 1	1.00	MCS	C
14	056 AK1.04 1	1.00	MCS	B
15	057 AK3.01 1	1.00	MCS	D
16	065 AA2.06 1	1.00	MCS	B
17	W/E 04 EK2.2 1	1.00	MCS	A
18	W/E 05 EK1.3 1	1.00	MCS	D
19	003 AK3.05 1	1.00	MCS	D
20	005 AG2.1.28 1	1.00	MCS	A
21	024 AA2.02 1	1.00	MCS	A
22	028 AA1.02 1	1.00	MCS	C
23	032 AK1.01 1	1.00	MCS	C
24	033 AA2.09 1	1.00	MCS	A
25	061 AA1.01 1	1.00	MCS	B
26	067 AK3.02 1	1.00	MCS	C
27	W/E 09 EK2.2 1	1.00	MCS	C
28	003 K5.04 1	1.00	MCS	D
29	003 K6.04 1	1.00	MCS	B
30	004 K3.06 1	1.00	MCS	C
31	005 K4.12 1	1.00	MCS	C
32	005 K5.05 1	1.00	MCS	A
33	006 A4.02 1	1.00	MCS	C
34	007 K5.02 1	1.00	MCS	C
35	008 A1.02 1	1.00	MCS	D
36	008 K3.03 1	1.00	MCS	C
37	010 K1.08 1	1.00	MCS	B
38	012 A2.03 1	1.00	MCS	B
39	012 A4.07 1	1.00	MCS	B
40	013 K2.01 1	1.00	MCS	B
41	022 A3.01 1	1.00	MCS	B
42	026 G2.1.31 1	1.00	MCS	D
43	039 A4.04 1	1.00	MCS	D
44	059 A2.12 1	1.00	MCS	D
45	061 K6.02 1	1.00	MCS	D
46	062 A1.01 1	1.00	MCS	C
47	062 K1.04 1	1.00	MCS	B

ANSWER KEY REPORT

for ILC-14 RO NRC Exam Test Form: 0

#	ID	Points	Type	Answers 0
48	063 A1.01 1	1.00	MCS	A
49	064 A3.13 1	1.00	MCS	A
50	064 G2.4.35 1	1.00	MCS	C
51	073 K4.01 1	1.00	MCS	A
52	076 K2.04 1	1.00	MCS	B
53	078 K1.05 1	1.00	MCS	B
54	078 K3.02 1	1.00	MCS	D
55	103 K4.04 1	1.00	MCS	A
56	002 K6.03 1	1.00	MCS	A
57	014 K3.02 1	1.00	MCS	C
58	017 A2.02 1	1.00	MCS	A
59	027 K2.01 1	1.00	MCS	A
60	029 K4.02 1	1.00	MCS	D
61	033 G2.1.25 1	1.00	MCS	A
62	034 A4.01 1	1.00	MCS	C
63	035 A3.01 1	1.00	MCS	D
64	068 K5.04 1	1.00	MCS	C
65	079 K1.01 1	1.00	MCS	D
66	G 2.1.1 1	1.00	MCS	C
67	G 2.1.27 1	1.00	MCS	B
68	G 2.2.2 1	1.00	MCS	D
69	G 2.2.42 1	1.00	MCS	B
70	G 2.3.11 1	1.00	MCS	C
71	G 2.3.5 1	1.00	MCS	A
72	G 2.3.7 1	1.00	MCS	B
73	G 2.4.1 1	1.00	MCS	C
74	G 2.4.32 1	1.00	MCS	D
75	G 2.4.4 1	1.00	MCS	A
SECTION 1 (75 items)		**75.00**		