1. Given the following:

   - Unit 1 is operating at 15% power when an electrical grid disturbance results in a reactor trip because of a loss of offsite power.
   - The operating crew completes performance of ES-0.1, "Reactor Trip Response."
   - Pressurizer Heater Banks C and D are energized.

   When ES-0.1 is completed, which ONE of the following identifies how the RCS...

   (1) temperature will stabilize

   and

   (2) pressure will be controlled?

	Temperature	Pressure
A.	Tavg at 557°F	By auxiliary spray
B.	Tavg at 557°F	By normal spray
C.	Tcold at 557°F	By auxiliary spray
D.	Tcold at 557°F	By normal spray

2. Given the following:

   - Unit 1 is operating at 100% power.

   - A leak equivalent to 1/2 inch in diameter has developed on the line connecting the pressurizer to the PORVs.

Which ONE of the following describes the (Long term) response of the pressurizer pressure control and level control systems?

	Pressurizer Pressure Controller 1-PIC-68-340A	Pressurizer Level Controller 1-LIC-68-339
A.	output will INCREASE	output will INCREASE
B.	output will INCREASE	output will DECREASE
C.	output will DECREASE	output will INCREASE
D.	output will DECREASE	output will DECREASE

3. Given the following plant conditions:

   - A 200 gpm RCS leak is in progress.
   - Containment pressure is stable at 3 psig.

   Which ONE of the following completes the statements below?

   Auxiliary Feedwater flow must be maintained greater than a specified setpoint until at least one S/G is above a minimum level of ___(1)___ .

   This level requirement ensures S/G ___(2)___.

	(1)	(2)
A.	29% NR	tubes are covered in order to promote reflux cooling.
B.	29% NR	inventory provides adequate secondary heat sink.
C.	39% NR	inventory provides adequate secondary heat sink.
D.	39% NR	tubes are covered in order to promote reflux cooling.

4. Which ONE of the following choices completes the statement below?

   During a large break LOCA, "Reflux boiling" is _____

   A. significant for heat removal during a Cold Leg break, ONLY.

   B. insignificant for heat removal during a Cold Leg break, ONLY.

   C. significant for heat removal during both a Hot or Cold Leg break.

   D. insignificant for heat removal during either a Hot or Cold Leg break.

5. Given the following:

   - Unit 1 is at 100% power at EOL.
   - An automatic makeup to the VCT is in progress.
   - Letdown flow is 75 gpm.
   - 1-FC-3-139, BA TO BLENDER FCV-62-140 CONTROL, is in AUTO with a Pot setting of 4%.
   - 1-HIC-3-142, PW TO BLENDER FCV-62-143 CONTROL, is in AUTO with a Pot setting of 35%.
   - 1-LT-62-129A, VCT Level Transmitter, fails high.

   In the absence of operator response, which ONE of the following describes the effect of the 1-LT-62-129A failure on the <u>actual</u> VCT level and subsequent results?

   The VCT level will ...

   A. start dropping until the running CCP loses suction.

   B. start dropping until the CCP suction transfers to the RWST.

   C. rise until make-up automatically terminates, then slowly drop until automatic makeup is restarted; then cycle between the upper and lower setpoints.

   D. rise until make-up automatically terminates, then start dropping and continue to drop until the CCP suction transfers to the RWST.

6. Given the following:

   - Unit 1 is at 220°F, with RHR Train A in service.
   - The following annunciators are in alarm:

     249-A - U1 SURGE TANK LEVEL HI/LO
     179-A - CCS HX A 1-RM-123 LIQ RAD HI

   - CCS Surge Tank level is 86% and increasing.
   - VCT level is decreasing at a rate of 3 gpm.
   - VCT pressure is 18 psig.

   Which ONE of the following identifies the heat exchangers that could be the source of the CCS in-leakage?

   1. CVCS Letdown heat exchanger
   2. RHR heat exchanger
   3. Thermal barrier heat exchanger
   4. Seal Water Return heat exchanger

   A. 1, 2, 3 and 4

   B. 1, 2, and 3 ONLY

   C. 1 and 2 ONLY

   D. 1 and 3 ONLY

7. If a manual Safety Injection is initiated, which ONE of the following identifies a component or components that will have the cooling water isolated and the reason for the isolation?

   A. Excess letdown heat exchanger as part of the required containment isolation.

   B. Excess letdown heat exchanger to ensure adequate cooling flow to SI required components.

   C. Containment Lower Compartment Coolers as part of the required containment isolation.

   D. Containment Lower Compartment Coolers to ensure adequate cooling flow to SI required components.

8. Given the following:

   - Unit 1 is operating at 100% power with all controls in automatic.
   - 1-XS-68-340D, PZR PRESS CONTROL CHANNEL SELECT, is selected to the PT-68-340 & 334 position.
   - A step-load reduction to 50% of full power occurs due to a turbine control malfunction.
   - During the load reduction 1-PT-68-334, Pressurizer Pressure Transmitter, fails LOW.

   Which ONE of the choices below completes the following two statements relative the the transient?

   In accordance with N3-68-4001, "Reactor Coolant System," the pressurizer pressure control equipment is designed to respond to the given conditions without ___(1)___.

   When 1-PT-68-334 failed, the pressurizer spray valves would ___(2)___.

	(1)	(2)
A.	a reactor trip	go closed.
B.	a reactor trip	continue to respond to pressure changes.
C.	opening a PORV	go closed.
D.	opening a PORV	continue to respond to pressure changes.

9. The plant has experienced an ATWS and boration is in progress per FR-S.1, "Nuclear Power Generation/ ATWS."

   Which ONE of the following identifies the two criteria that must be satisfied to verify the reactor is subcritical per FR-S.1?

   A. All reactor trip breakers OPEN and All rod bottom lights ON.

   B. All rod bottom lights ON and Intermediate Range SUR negative.

   C. Source Range detectors energized and Source Range SUR negative.

   D. Power Range detectors less than 5% and Intermediate Range SUR negative.

10. Given the following:

- A SGTR occurs on Unit 1.
- Following the termination of Safety Injection in E-3, "Steam Generator Tube Rupture," a loss of off-site power occurs.
- The crew is ready to maintain the RCS pressure at less than the ruptured steam generator pressure in accordance with E-3.
- Conditions require auxiliary spray to be used.
- 1-PIC-68-340B, LOOP 2 SPRAY CONTROL, is in MANUAL and at 50%.

Which ONE of the following completes the statement below?

To prevent exceeding the 'cyclic limit', the maximum allowed ΔT between the pressurizer and the charging flow is ___(1)___ and if 1-PIC-68-340B is adjusted to "0%" it will __(2)__ the potential for thermal shock of the presurizer spray nozzle when the auxiliary spray is opened.

	(1)	(2)
A.	100°F	increase
B.	100°F	decrease
C.	320°F	increase
D.	320°F	decrease

11. Given the following:

- Unit 1 is operating at 60% power.
- An AFW Feed line break in the South Valve Vault causes a Unit 1 trip.

Which ONE of the following identifies...

(1) the sequence of actions that occur when the unit trips,

and

(2) if resetting the Feed Water Isolation would require cycling the reactor trip breakers?

A. (1) The reactor will trip causing the turbine to trip.
(2) Would require cycling.

B. (1) The reactor will trip causing the turbine to trip.
(2) Would **NOT** require cycling.

C. (1) The turbine will trip causing the reactor to trip.
(2) Would require cycling.

D. (1) The turbine will trip causing the reactor to trip.
(2) Would **NOT** require cycling.

12. Given the following plant conditions:

    - The crew is in ECA-0.0, "Loss of Shutdown Power."
    - During the rapid depressurization of all intact SGs to reduce RCS pressure to 300 psig, an overshoot occurs.
    - RCS is reduced to 195 psig before the depressurization is stabilized.

    What is the potential implication that could result from this overshoot in SG depressurization?

    A. The RCP seals may be damaged.

    B. Natural circulation may be impeded.

    C. Unacceptable upper head voiding may occur.

    D. The integrity of the S/G U-tubes may be challenged.

13. Given the following time line:

0800 - Unit 1 Condensate Storage Tank (CST) is determined to be at the Tech Spec minimum level.

0800 - The WBN Hydro switchyard is completely de-energized due to an electrical storm which also causes a Unit 1 reactor trip.

1200 - The RCS is at normal 'No Load' temperature and pressure when the decision is made to cool the RCS down to Mode 5.

1300 - RCS Tavg is 532°F.

1400 - RCS Tavg is 507°F.

1500 - RCS Tavg is 482°F.

1600 - RCS Tavg is 457°F.

Which ONE of the following identifies...

(1) the volume of water in the Unit 1 CST at 0800

and

(2) if the CST will have sufficient water to allow the cooldown to RHR cut-in to be reached without additional makeup to the tank if the current cooldown rate is maintained?

	(1)	(2)
A.	210,000 gal.	The CST is designed to have sufficient water to reach RHR at the current cooldown rate.
B.	210,000 gal.	Additional makeup will be required to reach RHR at the current cooldown rate.
C.	200,000 gal.	The CST is designed to have sufficient water to reach RHR at the current cooldown rate.
D.	200,000 gal.	Additional makeup will be required to reach RHR at the current cooldown rate.

14. Given the following plant conditions:

- Unit 1 is at 100% power.
- Alarms received indicate that an electrical board has failed.
- All trip status lights are OFF on panel 1-XX-55-5 on 1-M-5.

Which ONE of the following identifies...

(1) which electrical board failed

and

(2) the reason that manipulation of controls in the Auxiliary Control Room (ACR) is required?

	(1)	(2)
A.	120 VAC Vital Instrument Power Board 1-I	ACR Auxiliary Feedwater Controllers for S/G 3 and 4 have swapped to MANUAL and require adjustment to ensure an operable heat sink is maintained.
B.	120 VAC Vital Instrument Power Board 1-II	ACR Auxiliary Feedwater Controllers for S/G 1 and 2 have swapped to MANUAL and require adjustment to ensure an operable heat sink is maintained.
C.	120 VAC Vital Instrument Power Board 1-I	CHARGING FLOW controllers, 1-HIC-62-93A and 1-HIC-62-89A cannot be controlled from MCR requiring control to be established in the AUX position.
D.	120 VAC Vital Instrument Power Board 1-II	CHARGING FLOW controllers, 1-HIC-62-93A and 1-HIC-62-89A cannot be controlled from MCR requiring control to be established in the AUX position.

15. Given the following:

- Unit 1 is at 100% power when the following annunciator windows alarm.

  196-A - DG CONTROL POWER FAILURE
  197-B - DG BATTERY ABNORMAL

- An AUO sent to check, reports that the following 2 breakers OPEN in the DG 1A-A 125V DC Battery Distribution Panel:

  1-BKR-82-A, DG 1A-A 125V DC SUPPLY FROM BATT 1A
  1-BKR-82-A/6, DG 1A-A 125V DC SUPPLY FROM BATT CHGR 1A

- The condition has **NOT** been corrected.

Which ONE of the following identifies how D/G 1A-A will respond to a loss of voltage on 6.9kV Shutdown Board 1A-A?

A. The DG will automatically start and connect to the shutdown board, but control from 0-M-26 will **NOT** be available.

B. The DG will automatically start but the generator field will **NOT** be flashed as the DG speed increases.

C. The DG will **NOT** automatically start but could be started manually from its Local Control Panel.

D. The DG will **NOT** automatically start and could **NOT** be started from its Local Control Panel.

16. Given the following:

- A LOCA outside Containment has occurred.
- The crew is performing ECA-1.2, "LOCA Outside Containment."

Which ONE of the following is:

(1) the first system to be addressed while performing the steps to identify and isolate the leak,

and

(2) the parameter directed to be monitored to determine if the leak has been isolated?

	(1) First System Isolated	(2) RCS Parameter Monitored
A.	Residual Heat Removal	subcooling
B.	Residual Heat Removal	pressure
C.	Safety Injection	subcooling
D.	Safety Injection	pressure

17. Given the following:

- RCS Bleed and Feed has been initiated on Unit 1 in accordance with FR-H.1, "Loss of Secondary Heat Sink."
- All SG WR levels are 21% and lowering.
- Phase B windows are LIT on both MASTER ISOL SIGNAL STATUS PNLs on 1-M-6.
- RCS Loop WR temperature is 551°F and rising.
- Core Exit TC temperatures are 554°F and rising.
- Conditions have been established to allow feed flow using the condensate system.
- 2 Hotwell pumps and 2 Condensate Booster pumps have been started.

Which ONE of the following identifies the strategy the crew should use to initially re-establish secondary flow?

Establish feed flow to ...

A. all SG's and feed at <100 gpm/SG until the respective SG WR level is > 25%.

B. a selected SG and feed at <100 gpm until WR level is > 25%.

C. all SG's and feed at the maximum rate.

D. a selected SG and feed at the maximum rate.

18. Given the following:

- Following a steam line break outside containment on Unit 1, the crew is performing ECA-2.1, "Uncontrolled Depressurization of All Steam Generators."

- The RCS temperature is at T-sat for the S/G pressure.

- The RCS pressure is 1490 psig and slowly dropping.

Which ONE of the following completes the statements below during the performance on ECA-2.1?

An overall goal of the action to "Control Feed Flow" is intended to ___(1)___.

The Reactor Coolant Pumps ___(2)___.

A. (1) minimize further cooldown of the Reactor Coolant System.
(2) should remain in service because the pressure drop is caused by the S/G depressurization.

B. (1) minimize further cooldown of the Reactor Coolant System.
(2) are required to be stopped to prevent core uncovery if the pumps were to trip later in the transient.

C. (1) maintain minimum FR-0, "Status Trees," requirement for heat sink.
(2) should remain in service because the pressure drop is caused by the S/G depressurization.

D. (1) maintain minimum FR-0,"Status Trees," requirement for heat sink.
(2) are required to be stopped to prevent core uncovery if the pumps were to trip later in the transient.

19. Given the following:

- Unit 1 is operating at 70% power.
- "D" Bank Group 2 Control Rod H8 is 14 steps lower than the rest of "D" bank.
- The rod has been misaligned for 90 minutes.
- The crew has been directed to realign the rod in accordance with AOI-2, "Malfunction of Reactor Control System."
- Annunciator 86-A, CONTROL ROD URGENT FAILURE, alarms when the rod realignment begins.

Which ONE of the following identifies which "D" bank lift coil disconnect switch(es) was/were opened in accordance with AOI-2 and the source of the 86-A alarm?

A. All except Rod H-8 were disconnected.
Group 1 is the source of the 86-A alarm.

B. All except Rod H-8 were disconnected.
Group 2 is the source of the 86-A alarm.

C. Only Rod H-8 was disconnected.
Group 1 is the source of the 86-A alarm.

D. Only Rod H-8 was disconnected.
Group 2 is the source of the 86-A alarm.

20. Given the following:

- Unit 1 is operating at 30% reactor power with Tavg and Tref matched.
- Rod Control is in MANUAL for system trouble shooting.
- The Tavg Auctioneering unit fails to a value of 571°F.

Which ONE of the following completes the statement below?

To restore pressurizer level to the program level for 30% power, the OAC will throttle 1-HIC-62-93A, CHARGING FLOW PZR LEVEL CONTROL in the ___(1)___ direction and the action to throttle the valve will cause RCP seal flow to ___(2)___.

	(1)	(2)
A.	OPEN	rise
B.	OPEN	drop
C.	CLOSE	rise
D.	CLOSE	drop

21. Given the following:

- Unit 1 startup in progress.
- Reactor is critical in the source range.
- Intermediate Range monitors read 2 X 10^{-5}% power.
- 120VAC Vital Instrument Power Board 1-II deenergizes.

Which ONE of the following describes effects associated with the loss of the instrument power board?

A. Reactor remains critical - Only one SRM is energized.

B. Reactor remains critical - Both SRMs remain energized.

C. Reactor trips - Only one SRM is energized.

D. Reactor trips - Both SRMs remain energized.

22. Given the following:

- Unit 1 is in Mode 2 with startup in progress in accordance with GO-2, "Reactor Startup," following a refueling outage.

- Due to damage to a source, only 1 source is installed in the core.

- During the past hour the 1-M-4 Control Board indicators for NI-135 and NI-136 (1-NI-92-135A & 1-XI-92-136A) have trended as follows:

Time	NI-135	NI-136
0915	2.0×10^{-2}	1.0×10^{-2}
0930	4.5×10^{-2}	8.0×10^{-2}
0945	4.8×10^{-2}	1.2×10^{-1}
1000	5.6×10^{-2}	1.4×10^{-1}

Which ONE of the following indicates the first time the intermediate range monitors would not be able to meet channel check requirements?

REFERENCE PROVIDED

A. 0915

B. 0930

C. 0945

D. 1000

23. Given the following:

- Unit 1 is operating at 100% power.
- Annunciator 184-B, SFP 0-RM-102/103 RAD HI, alarms.
- 0-RM-90-102, Spent Fuel Pit, has only the GREEN light LIT and indicates 4×10^{-1} mr/hr.
- 0-RM-90-103, Spent Fuel Pit, has the GREEN, AMBER, and RED indicating lights LIT and indicates 6.0×10^{2} mr/hr.

Which ONE of the following identifies the ABGTS fan that the operator would have to start <u>manually</u> and the reason the Annunciator Response Instruction directs the ABGTS fans to be started?

A. (1) Train A ABGTS fan.
(2) To limit dose rates at the site boundary to less than federal limits.

B. (1) Train A ABGTS fan.
(2) To ensure any ABSCE boundary release is monitored by a PAM qualified radiation monitor.

C. (1) Train B ABGTS fan.
(2) To limit dose rates at the site boundary to less than federal limits.

D. (1) Train B ABGTS fan.
(2) To ensure any ABSCE boundary release is monitored by a PAM qualified radiation monitor.

24. Given the following plant conditions:

    - The Unit is at 100% power.
    - AOI-30.1, "Plant Fires," is in progress due to the report of a fire on site.
    - An action required in the AOI is to check the status of both trains of Control Room Isolation (CRI) on the 1-M-6 Master Isolation Signal Status Panel.

    Which ONE of the following identifies the reason for checking the status of the CRI?

    A. To determine if Main Control Room abandonment is currently required due to the fire.

    B. To ensure that an isolation of the Main Contol Room has automatically occurred.

    C. To determine where to assemble the AUOs in preparation for an Appendix R fire being declared.

    D. To evaluate the need for aligning CREVS suction to the other side of the Control Building.

25. Given the following:

- A reactor trip from 100% power and loss of Offsite power occurred 1 hour ago.
- ES-0.3, "Natural Circulation Cooldown with Steam Void in Vessel (with RVLIS)," is in progress.
- Pressurizer pressure is 785 psig and being lowered by auxiliary spray.
- RVLIS - ICCM PLASMA DISPLAYs indicate:
  - Reactor vessel level at 81%.
  - Core exit TCs at 520°F.

Assuming NO additional operator action, which ONE of the following predicts the expected RVLIS and PZR level trends as the depressurization continues?

	RVLIS	PZR Level
A.	Increase	Increase
B.	Increase	Decrease
C.	Decrease	Decrease
D.	Decrease	Increase

26. Given the following plant conditions:

- Unit 1 is operating at 100% power with the TD AFW pump tagged.
- A reactor trip occurs.
- The crew has entered FR-H.2, "Steam Generator Overpressure," based on the Heat Sink CSF Status Tree.
- SG #2 pressure is 1230 psig, level is 32% NR and both are slowly rising.
- The pressure in the other 3 SGs is currently 1140 psig and stable.

Which ONE of the following is the status of SG #2 blowdown valves when FR-H.2 is entered and an action which will be initiated during the performance of FR-H.2?

A. Both of the blowdown valves would be open.
Isolate AFW flow to #2 SG until steam release path is established.

B. Both of the blowdown valves would be open.
Establish minimum AFW flow to #2 SG until steam release path is established.

C. Only one of the blowdown valves would be open.
Isolate AFW flow to #2 SG until steam release path is established.

D. Only one of the blowdown valves would be open.
Establish minimum AFW flow to #2 SG until steam release path is established.

27. Given the following:

- Following an accident on Unit 1, the operator is using ICS screen 4RM1, Gaseous Rad Monitoring, to check the status of 1-RM-90-273 and 1-RM-90-274, Lower Containment Post Accident Radiation Monitors.

- 1-RM-90-274 data is displayed in BLUE text with a BLACK background.

Which ONE of the following identifies...

(1) the status of 1-RM-90-274 data

and

(2) the containment condition that will result in the monitors temporarily displaying unreliable readings?

	(1)	(2)
A.	'BAD'	a rapid pressure change
B.	'BAD'	a rapid temperature change
C.	'SUSPECT'	a rapid pressure change
D.	'SUSPECT'	a rapid temperature change

28. Given the following:

- Unit 1 is at 100% power, steady state, operation.
- RCP seal injection flows are:

RCP #1	RCP #2	RCP #3	RCP #4
10.2 gpm	7.8 gpm	9.0 gpm	12.2 gpm

Which ONE of the following identifies how 1-HIC-62-89A, Charging Seal Water Flow Controller, should be adjusted to establish all RCP seal injections flows within the normal range per SOI-68.02, "Reactor Coolant Pumps?"

A. Raise output to throttle open 1-FCV-62-89 to raise flow on RCP #2.

B. Raise output to throttle close 1-FCV-62-89 to raise flow on RCP #2.

C. Lower output to throttle open 1-FCV-62-89 to lower flow on RCP #4.

D. Lower output to throttle close 1-FCV-62-89 to lower flow on RCP #4.

29. Given the following:

- While performing AOI-34, "Immediate Boration" the OAC places 1-HS-62-138A, EMER BORATE, to OPEN.

- The OAC releases the handswitch 2 seconds after the RED indicating light is LIT.

Which ONE of the following identifies...

(1) how the Emergency Borate Valve will respond

and

(2) the panel in the main control room where emergency boration flow can be verified?

A. (1) The valve will stop open travel when the control switch is released.
(2) on 1-M-5

B. (1) The valve will stop open travel when the control switch is released.
(2) on 1-M-6

C. (1) The valve will continue to travel until it reaches full open.
(2) on 1-M-5

D. (1) The valve will continue to travel until it reaches full open.
(2) on 1-M-6

30. Given the following:

- A Reactor trip occurs, subsequent to a loss of offsite power.
- ES-0.2, "Natural Circulation Cooldown," has been implemented.
- The operating crew has determined 1500 gallons of boric acid must be injected to meet Cold Shutdown RCS boron concentration (C_B) calculated using REACTINW.

Which ONE of the following identifies the requirement for RCS boration in accordance with ES-0.2?

A. The entire amount of boric acid must be injected prior to the initiation of the cooldown.

B. The entire amount of boric acid plus 15% must be injected prior to the initiation of the cooldown.

C. The cooldown can begin during the boron addition but the entire amount of boric acid is required to be injected prior to reaching Cold Shutdown.

D. The cooldown can begin during the boron addition but the entire amount of boric acid plus 15% is required to be injected prior to reaching Cold Shutdown.

31. Given the following plant conditions:

- Unit 1 is in Mode 5, solid water operation, with Train A RHR in service.
- RCS temperature is 180°F.
- RCS pressure is 320 psig.

Subsequently:

- RCS pressure begins increasing uncontrolled.

Which ONE of the following identifies...

(1) the pressure at which the RHR suction relief valve is set to open,

and,

(2) the first action directed by AOI-14, "Loss of RHR Shutdown Cooling?"

	Relief Opens	First Action
A.	370 psig	Stop RHR Pump
B.	370 psig	Stop Charging Pump
C.	450 psig	Stop RHR Pump
D.	450 psig	Stop Charging Pump

32. Given the following:

- Unit 1 is operating at 100% power when a LOCA occurs.
- The crew is performing ES-1.3, "Transfer to Containment Sump."
- 1-FCV-63-175, SI PMP B RECIRC TO RWST, cannot be closed from the MCR.

As the performance of ES-1.3 continues, which ONE of the following identifies how the valve failure affects the...

(1) isolation of Safety Injection Pump recirculation flow

and

(2) alignment of the RHR pump 1B-B to supply suction the SIPs?

A. (1) Can be isolated from the MCR.
(2) Can be aligned to supply suction to the SIPs with 1-FCV-63-175 open.

B. (1) Must be isolated locally.
(2) Can be aligned to supply suction to the SIPs with 1-FCV-63-175 open.

C. (1) Can be isolated from the MCR.
(2) Can **NOT** be aligned to supply suction to the SIPs until 1-FCV-63-175 is closed.

D. (1) Must be isolated locally.
(2) Can **NOT** be aligned to supply suction to the SIPs until 1-FCV-63-175 is closed.

33. Which ONE of the following identifies the pressure that the relief valve on the discharge of the RHR pumps will start relieving and the tank where the flow through the valve will be routed?

	Pressure	Tank
A.	550 psig	RCDT
B.	550 psig	PRT
C.	600 psig	RCDT
D.	600 psig	PRT

34. Given the following:

- Unit 1 RCS is at 320°F and 350 psig with plant heatup to normal RCS operating temperature and pressure in progress.
- CCS is in a normal alignment with CCS pumps 1A-A and C-S running.
- CCS 1A-A pump suffers a catastrophic shaft failure.

Which of the following completes the two statements below?

CCS pump 1B-B will _____(1)_____ to supply the Unit 1 Train A CCS supply header.

Tech Spec 3.7.7, Component Cooling System, LCO entry _____(2)_____.

A. (1) automatically start
(2) is currently required

B. (1) automatically start
(2) is **NOT** currently required

C. (1) be required to be manually aligned
(2) is currently required

D. (1) be required to be manually aligned
(2) is **NOT** currently required

35. Given the following plant conditions:

- The Unit 1 Component Cooling Water System (CCS) Surge Tank level is decreasing.

Which ONE of the choices below completes the following statement?

The normal make-up to the CCS surge tank is supplied from the _____(1)_____ and if the emergency makeup supply was needed to maintain a level in the surge tank, it would _____(2)_____.

	(1)	(2)
A.	Demineralized Water System	require local action to align the supply to the tank
B.	Demineralized Water System	open automatically as tank level drops
C.	Primary Water System	require local action to align the supply to the tank
D.	Primary Water System	open automatically as tank level drops

36. Given the following:

- Unit 1 is at 100% power with an RCS dilution in progress.
- Pressurizer pressure is 2235 psig with both spray valves closed.
- Annunciator 14-E "M-1 THRU M-6 MOTOR TRIPOUT" alarms.
- Operator notes RCS pressure slowly dropping.
- There are **NO** other annunciators in alarm.

Which ONE of the following identifies...

(1) the breaker trip that caused the motor tripout alarm

and

(2) the action, if taken, associated with 1-PIC-68-340A, "PZR PRESS MASTER CONTROL" that would restore RCS pressure in accordance with AOI-18, "Malfunction of Pressurizer Pressure Control System?"

A. (1) Centrifugal Charging Pump.
(2) Lower the controller output.

B. (1) Centrifugal Charging Pump.
(2) Raise the controller output.

C. (1) Pressurizer heater Control Group C.
(2) Lower the controller output.

D. (1) Pressurizer heater Control Group C.
(2) Raise the controller output.

37. Which ONE of the following identifies ...

(1) two parameters monitored to ensure compliance with the Tech Spec LCO 3.4.1, DNB Limits

and

(2) a reactor trip which provides protection against Departure from Nucleate Boiling (DNB)?

	(1)	(2)
A.	Thermal power and ΔI	Low RCS flow
B.	Thermal power and ΔI	NIS Flux High (Low setpoint)
C.	RCS temperature and pressure	Low RCS flow
D.	RCS temperature and pressure	NIS Flux High (Low setpoint)

38. Which ONE of the following reactor protection system trips is designed to ensure that the allowable heat generation rate (kw/ft) of the fuel is NOT exceeded?

A. Over Power ΔT

B. NIS Positive Rate

C. Over Temperature ΔT

D. Intermediate Range Hi Flux

39. Given the following:

- The operating crew has entered ES-1.1, "SI Termination."

- After depressing the SI RESET pushbuttons (1-HS-63-134A, SI RESET TR A and 1-HS-63-134B, SI RESET TR B) the following conditions exist on 1-XA-55-4A, BYPASS, INTERLOCK AND PERMISSIVE.
  - Window 70-A - SI ACTUATED is LIT.
  - Window 70-B - AUTO SI BLOCKED is LIT.

Which ONE of the following identifies...

(1) how the Integrated Computer System (ICS) will indicate which SSPS Train has failed to reset

and

(2) the <u>first</u> method the operator sent locally to the respective Train SSPS cabinets would take to reset the failed SSPS Train locally?

A. (1) The failed train will indicate 'ACT' in RED.
(2) OPEN both 48v breakers in the SSPS Train's R panel.

B. (1) The failed train will indicate 'ACT' in RED.
(2) Place Safeguards Test Cabinet RESET switch to RESET and RELEASE in the SSPS Train's R panel.

C. (1) The failed train will indicate 'ACT' in CYAN.
(2) OPEN both 48v breakers in the SSPS Train's R panel.

D. (1) The failed train will indicate 'ACT' in CYAN.
(2) Place Safeguards Test Cabinet RESET switch to RESET and RELEASE in the SSPS Train's R panel.

40. Which ONE of the following identifies the 120v AC Vital Instrument Power Board(s) that supply power to energize the input relays for the Train B SSPS?

A. 1-II, only

B. 1-IV, only

C. 1-II and 1-IV, only

D. 1-I, 1-II, 1-III, and 1-IV

41. Given the following:

- Unit 1 is Mode 3 following a shutdown.
- Containment Lower Compartment Cooler D-B is out of service for maintenance.
- Loss of an electrical board results in the loss of Containment Lower Compartment Coolers A-A and C-A.
- The following annunciators go into alarm:

  Window 102-A - CRDM COOLER FLOW LO
  Window 104-A - LWR CNTMT CLR FLOW LO
  Window 104-B - LWR CNTMT TEMP HI
  Window 144-A - ICE COND INLET DOOR OPEN

- Lower Containment temperature is 128°F and rising.
- Lower Containment pressure is +0.18 psid and rising slowly.

As containment temperature and pressure continue to rise, which ONE of the following is the first required action in accordance with Annunciator Response Instructions for the annunuciators listed above?

A. If Lower Containment pressure exceeds the Tech Spec limit for greater than 50 minutes, then start the Air Return Fan(s).

B. If Lower Containment pressure exceeds the Tech Spec limit for greater than 50 minutes, then start the Containment Spray Pump(s).

C. If Lower Containment Temperature exceeds 160°F and can **NOT** be reduced to less than the Tech Spec Limit within 50 minutes, then start the Air Return Fan(s).

D. If Lower Containment Temperature exceeds 160°F and can **NOT** be reduced to less than the Tech Spec Limit within 50 minutes, then start the Containment Spray Pump(s).

42. Given the following:

- Unit 1 operating at 100% power.

- The operating crew is in the process of establishing a containment purge in accordance with SOI-30.02, "Containment Purge System."

Which ONE of the following identifies...

(1) the Ice Condenser doors, opened due to pressure imbalances, will result in a MCR alarm

and

(2) the guidance provided in SOI-30.02 to prevent the occurrence?

A. (1) Lower Inlet Doors
(2) Establish a lower containment purge for 5-10 minutes, then shutdown and start an upper containment purge.

B. (1) Lower Inlet Doors
(2) Establish an upper containment purge for 5-10 minutes, then shutdown and start a lower containment purge.

C. (1) Intermediate Deck Doors
(2) Establish a lower containment purge for 5-10 minutes, then shutdown and start an upper containment purge.

D. (1) Intermediate Deck Doors
(2) Establish an upper containment purge for 5-10 minutes, then shutdown and start a lower containment purge.

43. Which ONE of the following identifies the power supply to 1-FCV-72-39, CNTMT SPRAY HDR A TO CNTMT?

A. Reactor MOV Board 1A1-A

B. C & A Vent Board 1A1-A

C. Reactor MOV Board 1A2-A

D. C & A Vent Board 1A2-A

44. Given the following:

- Unit 1 is at 100% power.
- A stable 8 gpd tube leak exists on SG #3.
- 1-RM-90-119, Vacuum Pump Exhaust, is reading 8 $X10^2$ cpm.
- 1-RM-90-423A, SG 3 DISCH, is reading 8.08E+0 mr/hr
- An automatic BOP turbine runback occurs dropping turbine load to 970 MWe.

Following the runback, which ONE of the following identifies...

(1) the monitor used as the primary indication of the steam generator tube leak rate

and

(2) how the indication will be affected as a result of the change in steam flow?

	(1)	(2)
A.	1-RM-90-119	Trends down
B.	1-RM-90-119	Trends up
C.	1-RM-90-423A	Trends down
D.	1-RM-90-423A	Trends up

45. Given the following:

- Unit 1 reactor power is stable at 90%.
- Turbine Impulse pressure transmitter 1-PT-1-72 fails LOW.

Which ONE of the following identifes the status of the white lights on 1-M-4 for ...

(1) 1-XI-1-103D, STM DUMPS ACT 'D' FSV'S ON

and

(2) 1-XI-1-103A/B, STM DUMPS ARMED?

	1-XI-1-103D	1-XI-1-103A/B
A.	DARK	DARK
B.	DARK	LIT
C.	LIT	DARK
D.	LIT	LIT

46. Given the following:

- Unit 1 operating at 25% power, with rod control in manual.

A condensate header ruptures resulting in the following:

- All Main Feedwater pumps tripped.
- 30 seconds later, SG NR levels are 23% and lowering.
- Reactor power remains at 25%.

Which ONE of the following describes the current status of...

(1) the Reactor Protection System

and

(2) the Auxiliary Feedwater (AFW) Pumps?

A. (1) A reactor trip setpoint has **NOT** been exceeded
(2) AFW Pumps are **NOT** running.

B. (1) A reactor trip setpoint has been exceeded
(2) AFW Pumps are running.

C. (1) A reactor trip setpoint has **NOT** been exceeded
(2) AFW Pumps are running.

D. (1) A reactor trip setpoint has been exceeded
(2)AFW Pumps are **NOT** running.

47. Given the following;

- Unit 1 experienced a Reactor trip from 100% power.
- The crew completed E-0, "Reactor Trip or Safety Injection," and has entered ES-0.1, "Reactor Trip Response."
- Pressurizer level is 25% and slowly decreasing.
- All Steam Generator NR levels are between 21% and 25% and slowly increasing.
- All Steam Generators pressures are approximately 1060 psig and slowly decreasing.
- RCS pressure is 2020 psig and slowly decreasing.
- Tavg is 554°F and slowly decreasing.
- Steam dumps and S/G PORVs are closed.

Which ONE of the following will be the next action by the crew in accordance with ES-0.1 to address the conditions?

A. Establish Immediate Boration.

B. Throttle Auxiliary Feedwater Flow.

C. Close MSIVs and bypass valves.

D. Initiate Safety Injection and Return to E-0.

48. Given the following:

- Unit 1 is operating at 30% power.
- Following maintenance, Unit 1 480v Unit Board 1A is ready to be restored to service.
- The MCR has instructed the AUOs to energize the board using the normal supply breaker.
- Annunciator 6-D, 480V UNIT BOARD 1A UV/FAILURE/ TRANSFER, clears.

Which ONE of the following identifies indications available for the MCR operating crew to verify that the alarm cleared due to the board being energized before receiving notification from the operators in the field?

1. Voltage indicating meter on 1-M-1.
2. Normal Feed Breaker RED indicating light LIT on 1-M-1.
3. GREEN light LIT on MCR handswitches for equipment fed from the board.

A. 2 ONLY

B. 1 and 2 ONLY

C. 2 and 3 ONLY

D. 1, 2, and 3

49. Given the following:

- Unit 1 is operating at 40% power.

- The 250v DC Turbine Building Distribution Board 1 breaker supplying the DC control power to 6.9 kV RCP Board 1A trips.

Which ONE of the following describes how the RCP #1 is affected?

A. The RCP will trip when the DC is lost resulting in an automatic reactor trip directly due to the RCP tripping.

B. The RCP will trip when the DC is lost but the reactor will not automaticaly trip directly due to the RCP tripping.

C. The RCP will continue to run but the operator will not be able to trip the pump from the 1-M-5 control switch until the control power supply is transferred to the alternate.

D. The RCP will continue to run and the operator will be able to trip the pump from the 1-M-5 control switch because the control power will automatically transfer to the alternate.

50. Which ONE of the following correctly completes the statement below relative to the the alternate power supply to 1A-A DG Battery Charger?

The alternate power supply is from a ____(1)____ which will ____(2)____ to supply the battery charger if the normal supply is lost.

	(1)	(2)
A.	Train A 480V Diesel Aux. Bd.	automatically transfer
B.	Train A 480V Diesel Aux. Bd.	have to be manually aligned
C.	Train B 480V Diesel Aux. Bd.	automatically transfer
D.	Train B 480V Diesel Aux. Bd.	have to be manually aligned

51. Which ONE of the following Process Radiation Monitors will cause an isolation of a release path when the radiation monitor fails?

A. 1-RE-90-400, Shield Building Vent Rad Monitor

B. 0-RE-90-212, Station Sump Discharge Monitor

C. 0-RE-90-132, Service Building Vent Radiation Monitor

D. 0-RE-90-122, Waste Disposal System Liquid Release Monitor

52. Given the following plant conditions:

- The plant is in MODE 4 with both trains of RHR in service.
- Spent Fuel Pool Cooling is aligned using the 'B' Spent Fuel Pool Cooling System pump and heat exchanger.
- Four ERCW pumps, (A-A, C-A, F-B, & H-B), are in service.
- All ERCW headers are at the same pressure.
- ERCW pump A-A trips.

Which ONE of the following describes the initial impact of the pump tripping on the listed parameters?

(Assume no operator action is taken.)

	CCS temperature on CCS Heat Exchanger 'C' outlet	Control and Station Air Compressor 'D' Oil Temperature
A.	Rises	Rises
B.	Rises	Remains constant
C.	Remains constant	Rises
D.	Remains constant	Remains constant

53. Plant conditions are as follows:

- The plant is operating at 100% steady state power when a loss of offsite power occurs.
- Control air pressure slowly dropped to 82 psig but is now recovering as a result of operator action to restart Control Air Compressors A and B.

Which ONE of the following correctly describes the condition of the Auxiliary Air Systems and the Service Air System relative to the Control Air System (CAS)?

	Auxiliary Air Systems	Service Air System
A.	Aux air compressors running	Isolated from the CAS
B.	Aux air compressors running	Still being supplied from the CAS
C.	Aux air supplied from CAS, only	Isolated from the CAS
D.	Aux air supplied from CAS, only	Still being supplied from the CAS

54. Given the following plant conditions:

- The plant is in Mode 1.
- The operating crew is preparing to "Place Containment Vent Air Cleanup Units (CVACUs) In Service" in accordance with SOI-30.03, "Containment HVAC and Pressure Control."
- While the CVACUs have been out of service the conditions in containment changed as follows:
  - Annulus/Vacuum ΔP increased from 5.7 psid to 6.1 psid.
  - Containment/Annulus ΔP increased from 0.07 psid to 0.11 psid.
  - Upper Containment Temperature increased from 96.3°F to 100.4°F.
  - Lower Containment Temperature increased from 107.8°F to 110.2°F.

Which ONE of the following identifies the containment parameter that is required to be lowered prior to placing a CVACU in service?

A. Annulus/Vacuum ΔP

B. Containment/Annulus ΔP

C. Upper Containment Temperature

D. Lower Containment Temperature

55. Given the following conditions:

- Unit 1 is operating at 100% power when an automatic Safety Injection occurs.
- ~~Current~~ After 2 minutes conditions are:
  - Tavg 540°F and dropping.
  - RCS pressure 1740 psig and dropping.
  - Steam Generator pressures are 950 psig and dropping.
  - Containment Pressure 2.6 psig and rising.
  - All automatic actions have occurred as required.
  - No manual operator actions have been taken.

Which ONE of the following identifies the current status of the <u>three</u> ESF actuations listed below?

Containment Phase A Isolation
Containment Phase B Isolation
Main Steam Line Isolation

A. ONLY Phase A is actuated.

B. ONLY Phase A and Phase B are actuated.

C. ONLY Phase A and Main Steam Line Isolation are actuated.

D. Phase A, Phase B, and Main Steam Line Isolation are actuated.

56. As Unit 1 reactor power is increased from 0% to 100%, which ONE of the following identifies how both the Reactor Coolant System (RCS) ΔT and the OTΔT reactor trip setpoint change?

	RCS ΔT	OTΔT Reactor Trip Setpoint
A.	Rises by approx 29°F	Increases as ΔT increases
B.	Rises by approx 29°F	Decreases as ΔT increases
C.	Rises by approx 62°F	Increases as ΔT increases
D.	Rises by approx 62°F	Decreases as ΔT increases

57. Given the following:

- A power ascension was in progress on Unit 1 with reactor power at 70%.
- Control Bank "D" (CBD) rods were at 185 steps when one CB "D" rod dropped into the core.
- The problem with the dropped rod has been corrected and the rod has subsequently been realigned.
- The OAC inadvertently manipulates 1-SUS, ROD CONTROL STARTUP instead of the 1-RCAR, ROD CONTROL ALARM RESET.

Which ONE of the following describes the indications or conditions that would exist due to manipulating 1-SUS, ROD CONTROL STARTUP?

A. ALL control bank step counters and ALL shutdown bank step counters would indicate 000 steps.

B. ALL control bank step counters would indicate 000 but ALL shutdown bank step counters would indicate fully withdrawn.

C. The ROD INSERTION LOW LIMIT and the ROD INSERTION LOW LOW LIMIT alarm would be prevented from alarming.

D. The ROD INSERTION LOW LIMIT and the ROD INSERTION LOW LOW LIMIT alarm would alarm but at a LOWER value than the actual Rod Insertion Limit.

58. Given the following:

- Unit 1 is operating steady state at 70% reactor power with rod control in manual.

Compare the effects of either one of the following RCS Loop 1 RTDs failing HIGH.

1. Thot RTD #1
2. Tcold RTD #1

Assuming NO operator action, which ONE of the following identifies the RCS RTD failure...

(1) having the larger effect on the pressurizer level control system

and

(2) how the pressurizer level would be affected?

	Largest effect	Level would...
A.	Thot failure	rise and be controlled at a level higher than the 70% power steady state level.
B.	Thot failure	rise but be restored to the 70% power steady state level by the control system.
C.	Tcold failure	rise and be controlled at a level higher than the 70% power steady state level.
D.	Tcold failure	rise but be restored to the 70% power steady state level by the control system.

59. Which ONE of the following identifies...

(1) the total number of core exit thermocouples in the Unit 1 reactor

and

(2) how the RVLIS ICTC map page would identify a thermocouple that was greater than the critical setpoint value?

	(1)	(2)
A.	58	The value would be displayed in reverse video.
B.	65	The value would be displayed in reverse video.
C.	58	The value would be displayed as 9999.
D.	65	The value would be displayed as 9999.

60. Which ONE of the following is the power supply to the Emergency Gas Treatment System (EGTS) Fan B?

A. C & A Vent Board 1B1-B

B. C & A Vent Board 2B1-B

C. Reactor Vent Board 1B-B

D. Reactor Vent Board 2B-B

61. Given the following:

- Unit 1 is operating at 100% power.
- Fuel shuffles are in progress in the Spent Fuel Pool (SFP) with the Spent Fuel Pit Gate installed.
- Due to a failure of the annunciator 128-A 'SFP LEVEL HI/LO,' the level lowers to El 748' 10" before the condition is identified.
- No leakage from the pit is identified.
- The Shift Manager has directed a makeup to the SFP in accordance with SOI-78.01, "Spent Fuel Pool Cooling And Cleaning System."

Which ONE of the following completes the two statements below?

SFP level is __(1)__ the minimum required by Technical Specifications to allow fuel movement.

Makeup to the SFP ___(2)___.

	(1)	(2)
A.	below	can be initiated immediately
B.	below	must be coordinated with Chemistry and Reactor Engineering
C.	above	can be initiated immediately
D.	above	must be coordinated with Chemistry and Reactor Engineering

62. Given the following:

- Unit 1 is in Mode 6 with core off-load in progress.
- 1-HS-90-410-A [back of 1-R-73] and 1-HS-90-415-B [back of 1-R-78] are in the REFUEL position.
- A fuel assembly being withdrawn into the Refueling Mast is dropped on to the lower core plate.
- The following annunciator goes into alarm:
  Window 174A - CNTMT PURGE EXH 1-RM-130/131 RAD HI
- Both MASTER ISOL SIGNAL STATUS PNLs, 1-XX-55-6C and 1-XX-55-6C, indicate CVI actuation has occurred.
- AOI-29, "Dropped Or Damaged Fuel or Refueling Cavity Seal Failure," is entered.

Which ONE of the following identifies...

(1) how the Fuel Handling Area Exhaust fans are affected

and

(2) the action required in AOI-29 relative to the upper and lower containment air locks?

A. (1) Fuel Handling Area Exhaust fans will be automatically stopped.
(2) Both doors must be closed in both Upper and Lower containment air locks.

B. (1) Fuel Handling Area Exhaust fans will be automatically stopped.
(2) At least one door must be closed in both the Upper and Lower containment air locks.

C. (1) Fuel Handling Area Exhaust fans will **NOT** automatically stop but will be required to be manually shutdown.
(2) Both doors must be closed in both Upper and Lower containment air locks.

D. (1) Fuel Handling Area Exhaust fans will **NOT** automatically stop but will be required to be manually shutdown.
(2) At least one door must be closed in both the Upper and Lower containment air locks.

63. Given the following:

- A safety valve fails open on S/G #1 resulting in a reactor trip and safety injection on Unit 1.

- When the MSIVs handswitches are placed to closed, the #1 MSIV failed to close.

Which ONE of the following identifies...

(1) the earliest an isolation of AFW flow to S/G #1 is allowed in accordance with TI-12.04, "User's Guide For Abnormal And Emergency Operating Instructions,"

and

(2) the status of the SG #1 MSIV indicating lights on 1-M-4 as the AUOs perform E-2,"Faulted Steam Generator Isolation," Attachment 1 in attempt to close S/G #1 MSIV?

A. (1) After the immediate operator actions of E-0 are complete.
(2) Lights will be available to indicate status both after the MSIV transfer control switch is placed to AUX and after the 125v control power fuses are removed.

B. (1) After the immediate operator actions of E-0 are complete.
(2) Lights will be available to indicate status after the MSIV transfer control switch is placed to AUX but will be lost when the 125v control power fuses are removed.

C. (1) After the steps of E-0 are complete through the verification of heat sink and minimum heat sink is ensured for the unaffected S/Gs.
(2) Lights will be available to indicate status both after the MSIV transfer control switch is placed to AUX and after the 125v control power fuses are removed.

D. (1) After the steps of E-0 are complete through the verification of heat sink and the minimum heat sink is ensured for the unaffected S/Gs.
(2) Lights will be available to indicate status after the MSIV transfer control switch is placed to AUX but will be lost when the 125v control power fuses are removed.

64. Which ONE of the choices below completes the following statement relating to operation of the Waste Gas Decay Tanks?

The in-service Waste Gas Decay Tank will automatically isolate when its pressure rises to __(1)____ and the tank aligned for standby will _____(2)_____.

	(1)	(2)
A.	100 psig	be placed in service manually
B.	135 psig	be placed in service manually
C.	100 psig	be automatically placed in service
D.	135 psig	be automatically placed in service

65. Given the following:

- Unit 1 is in Mode 3 following a manual reactor trip required due to a control air line break in the turbine building.

- The operating crew performed the applicable emergency instructions and has stabilized the plant.

- The crew has implemented AOI-10, "Loss of Control Air," to address the loss of air.

Assuming all systems respond as designed, which ONE of the following identifies a local action that could be required in Auxiliary Building during the performance of AOI-10 due to the loss of air?

A. Control Steam Generator PORVs using nitrogen bottles stationed on El 729' and El 737'.

B. Close Control-to-Aux Air header isolation valves using local controls on El 757'.

C. Stop the air pumps for containment radiation monitors using breakers on the front of the monitors on El 737'.

D. Adjust Reactor Coolant Pump seal injection flow using in-service seal water filter outlet valve on El 713'.

66. In accordance with OPDP-1, "Conduct of Operations," which ONE of the following identifies...

(1) the individual(s), other than shift operations personnel, that are allowed access to the MCR without first requesting permission

and

(2) an individual who controls access for entry into the horseshoe area on Unit 1?

	(1)	(2)
A.	NRC only	OAC
B.	NRC only	Shift Manager
C.	NRC and QA	OAC
D.	NRC and QA	Shift Manager

67. Given the following:

- While performing E-3, "Steam Generator Tube Rupture," the Unit Supervisor (US) determines that a transition to ECA-3.1, "SGTR and LOCA - Subcooled Recovery," is required.

- The US gets the crews attention and announces the procedure number and title.

Which ONE of the following identifies...

(1) the action required in accordance with TI-12.04, "User's Guide for Abnormal and Emergency Operating Instructions," that must be met prior to initiating steps in the procedure

and

(2) the OACs minimum requirement in accordance with OPDP-1, "Conduct of Operations," when the US reads a step directing the manipulation of a control switch?

A. (1) The US must conduct a crew briefing prior to implementing steps.
(2) Provide repeat back prior to taking the action, and report back after the operation is completed.

B. (1) The US must conduct a crew briefing prior to implementing steps.
(2) Provide repeat back and operate only after confirmation is received from the sender.

C. (1) The US must read the purpose for the procedure to the crew.
(2) Provide repeat back prior to taking the action, and report back after the operation is completed.

D. (1) The US must read the purpose for the procedure to the crew.
(2) Provide repeat back and operate only after confirmation is received from the sender.

68. Given the following:

- Unit 1 is in Mode 6 with the lift of the upper internals package in progress.
- Annunciator 81B - SOURCE RANGE HI FLUX AT SHUTDOWN alarms.
- OAC observes count rates rising on both source range monitors.

Which ONE of the following identifies the response of the containment evacuation alarm and required action in accordance with the ARI?

The containment evacuation alarm will _____.

A. **NOT** be automatically actuated but an announcement to evacuate containment is required.

B. **NOT** be automatically actuated and an announcement to evacuate containment is only required if both of the SRM count rates double.

C. be automatically actuated and action is required to ensure containment is evacuated.

D. be automatically actuated but if neither SRM count rate has doubled, the alarm is to be reset and announced as expected.

69. Given the following:

- MDAFWP 1B-B is tagged for work on the pump discharge check valve, 1-CKV-3-821.

- 1-PCV-3-132, MDAFWP 1B-B Discharge Pressure Control Valve, is to be used as a boundary isolation valve and has been closed.

In addition to the valve handwheel, which ONE of the following identifies the minimum local positioning and tag placement requirements for 1-PCV-3-132 in accordance with NPG-SPP-10.2, "Clearance Procedure to Safely Control Energy?"

A. The air supply valve verified to be open and then tagged in the open position.

B. The air supply valve closed and tagged, and air regulator depressurized.

C. A jacking device installed on the valve and tagged, along with the air supply valve tagged in the open position.

D. A jacking device installed on the valve and tagged, along with the air regulator depressurized, and the air supply valve closed and tagged.

70. Given the following:

- Unit 1 is in Mode 5.
- To support an alignment in the plant, the operating crew restored power to 1-FCV-74-9-B, RHR SYSTEM ISOL BYPASS, and places 1-HS-74-9 to CLOSE.
- 1 second after the handswitch was placed to close, one of the fuses in the MOV's control power circuit blew.

Using the print provided, which ONE of the choices below completes the two following statements?

The valve travel movement would be immediately stopped because the __(1)__

Both of the valve position indicating lights on the 1-M-6 would be __(2)__

REFERENCE PROVIDED

A. (1) breaker on the MOV board trips.
(2) LIT

B. (1) breaker on the MOV board trips.
(2) DARK

C. (1) contactor inside the breaker compartment opens.
(2) LIT

D. (1) contactor inside the breaker compartment opens.
(2) DARK

71. Which ONE of the following identifies the incore flux detector placement and tagging requirements listed in TI-12.07A, "Containment Access Modes 1 – 4," for an entry into lower containment or the annulus?

Required Incore Flux Detector Placement	Tagged with a...
A. Storage position or inserted to within 10 feet of the core	Hold Order
B. Storage position only	Hold Order
C. Storage position or inserted to within 10 feet of the core	Caution Order
D. Storage position only	Caution Order

72. Given the following:

- While releasing a clearance, a clearance card on a HPFP system valve inside the Auxiliary Building is to be removed and the valve is to be opened.

- Valve is located 8 feet above floor level requiring a portable ladder to access.

Which ONE of the following identifies...

(1) if any additional Radiation Protection support is needed to access the valve

and

(2) the required verification technique in accordance with NPG-SPP-10.3, "Verification Program?"

	(1)	(2)
A.	No additional support required	Concurrent Verification
B.	No additional support required	Independent Verification
C.	Additional support required	Concurrent Verification
D.	Additional support required	Independent Verification

73. Given the following:

- Unit 1 is operating at 100% power.
- AOI-42.01, "Security Events," Section 3.1.3, "INFORMATION of Potential Threat of Aircraft Attack," is entered.

In accordance with AOI-42.01, which ONE of the choices below completes both of the following statements?

AOI-42.01 will direct the MCR to be staffed by ___(1)___ .

When AOI-42.01 directs the Diesel Fire Pump to be started, ___(2)___ .

A. (1) one RO and one SRO
(2) an AUO must be sent to locally start the pump

B. (1) two ROs, two SROs, and the STA
(2) an AUO must be sent to locally start the pump

C. (1) two ROs, two SROs, and the STA
(2) the pump can be started from the Main Control Room

D. (1) one RO and one SRO
(2) the pump can be started from the Main Control Room

74. Which ONE of the following identifies...

(1) the Emergency Response Organization responsible for dispatching Emergency Response Teams during a plant emergency

and

(2) the lowest level emergency that will result in the emergency center being required to be staffed?

	(1)	(2)
A.	Technical Support Center	Alert
B.	Technical Support Center	NOUE
C.	Operations Support Center	Alert
D.	Operations Support Center	NOUE

75. Given the following:

- An ATWS has occurred on Unit 1.
- When the operator places 1-HS-47-24, TURBINE TRIP, to the TRIP position the turbine trip buses fail to actuate.

Which ONE of the following identifies...

(1) the indicating light that will be LIT on 1-HS-47-24

and

(2) the first action the operator is directed to take due to the turbine trip failure in accordance with FR-S.1, "Nuclear Power Generation/ ATWS?"

	(1)	(2)
A.	RED	Close MSIVs and Bypasses
B.	RED	Manually runback turbine
C.	GREEN	Close MSIVs and Bypasses
D.	GREEN	Manually runback turbine

76. Given the following conditions:

- Unit 1 is operating at 8% power.
- Annunciator window 100-D, RCP SEAL LEAK OFF FLOW HI, alarms.
- The OAC reports RCP #4 seal leakoff flow is off-scale high and the RCP lower bearing temperature is rising.
- In accordance with AOI-24, "RCP Malfunction During Pump Operation," Section 3.2, "RCP Tripped or Shutdown Required," the reactor is tripped.
- The crew enters E-0, "Reactor Trip or Safety Injection."

Which ONE of the following identifies...

(1) the required implementation of AOI-24 after the EOPs are entered in accordance with TI-12.04, "Users Guide for Abnormal and Emergency Operating Instructions,"

and

(2) the <u>maximum</u> time allowed by AOI-24 to close RCP #4 Seal Return Valve, 1-FCV-62-22 after the pump is stopped?

A. (1) Continued during the performance of E-0.
(2) 3 minutes

B. (1) Continued during the performance of E-0.
(2) 5 minutes

C. (1) Continued ONLY after a transition is made to ES-0.1, "Reactor Trip Response."
(2) 3 minutes

D. (1) Continued ONLY after a transition is made to ES-0.1, "Reactor Trip Response."
(2) 5 minutes

77. Given the following:

- Unit 1 is operating at 100% power when a Safety Injection occurs.
- The reactor did NOT trip and can NOT be tripped manually from the MCR.
- The crew has implemented FR-S.1, "Nuclear Power Generation/ATWS," and has completed performance of step 4 to borate the RCS.

Which ONE of the following identifies:

(1) the expected indication on 1-M-5 for 1-XI-62-1228A & B, VCT VENT OUTLET ISOL VALVE

and

(2) when E-0, "Reactor Trip or Safety Injection," Appendix A , "Equipment Verifications," will be first performed?

A. (1) RED indicating light LIT.
(2) ONLY after the transition is made to E-0.

B. (1) RED indicating light LIT.
(2) Time permitting, during the performance of FR-S.1.

C. (1) GREEN indicating light LIT.
(2) ONLY after the transition is made to E-0.

D. (1) GREEN indicating light LIT.
(2) Time permitting, during the performance of FR-S.1.

78. Given the following:

- A SGTR has occurred on Unit 1. The crew has initiated an RCS cooldown to the target temperature.
- The following annunciators are in alarm:

  90-B - PZR PRESS LO-DEVN BACKUP HTRS ON
  92-A - PZR LEVEL HI/LO
  92-C - PZR LEVEL LO-HTRS OFF & LTDN CLOSED

- Pressurizer level is 13% and rapidly dropping.
- Pressurizer pressure is 1470 psig and dropping.
- RCS subcooling is 54°F and rising.

Which ONE of the following describes ...

(1) the procedure required,

and

(2) the status of the Reactor Coolant Pumps?

A. (1) Remain in E-3, "Steam Generator Tube Rupture."
(2) RCPs will continue to run.

B. (1) Remain in E-3, "Steam Generator Tube Rupture."
(2) RCPs will be secured.

C. (1) Transition to ECA-3.1, "SGTR and LOCA - Subcooled Recovery."
(2) RCPs will continue to run.

D. (1) Transition to ECA-3.1, "SGTR and LOCA - Subcooled Recovery."
(2) RCPs will be secured.

79. Given the following:

- ECA-0.0, "Loss of All AC Power," is in effect with the depressurization of the intact S/Gs in progress.
- An RCS cooldown was established at a cooldown rate of 120°F/hr.
- During performance of the depressurization, Shutdown Board 1A-A is restored.
- When determining the applicable recovery instruction to implement the OAC reports the following parameters exist:
  - Containment pressure has risen to 0.4 psid.
  - RCS subcooling is 68°F.
  - Pressurizer level is off scale low.
  - RCS pressure is 470 psig and stable.

Which ONE of the following identifies...

(1) the basis for allowing the cooldown to exceed the normal maximum rate during the depressurization step

and

(2) the required recovery procedure to be implemented when transitioning from ECA-0.0?

A. (1) Protect the RCP seals.
(2) ECA-0.2, "Recovery from Loss of Shutdown Power With SI Required"

B. (1) Protect the RCP seals.
(2) ECA-0.1, "Recovery from Loss of Shutdown Power Without SI Required"

C. (1) Conserve secondary inventory.
(2) ECA-0.2, "Recovery from Loss of Shutdown Power With SI Required"

D. (1) Conserve secondary inventory.
(2) ECA-0.1, "Recovery from Loss of Shutdown Power Without SI Required"

80. Unit 1 Generator is operating at 90% reactor power steady state conditions due to maintenance on the generator hydrogen seal oil system:

- Megawatts 1100 MWe
- Generator Voltage 23.6 Kv
- Hydrogen Pressure 45 psig
- All 500kv switchyard lines are in service.
- Reactive load 0 Mvars
- System Frequency 60.00 Hertz

A disturbance on the 500kV electrical system results in the following:

- Megawatts 1100 MWe
- Generator Voltage 23.6 Kv
- Hydrogen Pressure 45 psig
- Generator voltage regulator tripped to MANUAL.
- An additional +240 Mvars of reactive load is being applied to the generator.
- System Frequency 60.10 Hertz

Attempts to contact the System Load Coordinator have failed.

Which ONE of the following identifies...

(1) the status of the Generator Capability Curve Limits

and

(2) the procedure required to be implemented? to restore the unit to within limits

REFERENCE PROVIDED

A. Capability Curve Limits are being violated.
GO-4, "Normal Power Operation," Section 5.5, "Frequency Variation Response"

B. Capability Curve Limits are being violated.
1-PI-OPS-1-MCR, "Main Control Room," Section 5.3, "Voltage Control Monitoring"

C. Capability Curve Limits are **NOT** being violated but administrative MVAR limits are being violated.
GO-4, "Normal Power Operation," Section 5.5, "Frequency Variation Response"

D. Capability Curve Limits are **NOT** being violated but administrative MVAR limits are being violated.
1-PI-OPS-1-MCR, "Main Control Room," Section 5.3, "Voltage Control Monitoring"

81. Given the following:

- A LOCA has occurred on Unit 1.
- ECA-1.1, "Loss of RHR Sump Recirculation," is in effect.
- Containment pressure rises and the Containment Critical Safety Function turns ORANGE.

Which ONE of the following identifies the proper procedure usage and operation of the Containment Spray Pumps?

A. Remain in ECA-1.1, and direct the operator to operate the Containment Spray Pumps as described in FR-Z.1, "High Containment Pressure."

B. Remain in ECA-1.1, and direct the operator to operate the Containment Spray Pumps as described by ECA-1.1.

C. Transition to FR-Z.1, "High Containment Pressure," and direct the operators to operate Containment Spray Pumps as described by FR-Z.1.

D. Transition to FR-Z.1, "High Containment Pressure," but direct the operators to operate Containment Spray Pumps as described by ECA-1.1.

82. Given the following:

- Unit 1 is operating at 42% power.
- Reactor core power conditions result in the operating crew suspecting a rod is partially dropped into the core.

In accordance with TR 3.3.9, Power Distribution Monitoring System (PDMS), which ONE of the following identifies...

(1) the minimum number of incore thermocouple required for the PDMS to be operable

and

(2) if the PDMS is required to be operable when being used to determine the position of a dropped rod?

A. (1) 8 total with 2 thermocouples in each quadrant
(2) is required to be operable

B. (1) 8 total with 2 thermocouples in each quadrant
(2) is **NOT** required to be operable

C. (1) 17 total with 2 thermocouples in each quadrant
(2) is required to be operable

D. (1) 17 total with 2 thermocouples in each quadrant
(2) is **NOT** required to be operable

83. Given the following:

- A reactor startup is in progress with the reactor critical at 2.0 $X10^{-5}$% power.

- Source Range Monitor, 1-NI-92-131, fails LOW.

Which of the following identifies...

(1) how the failure affects the plant start-up

and

(2) a Technical Specification basis for the source range instruments relative to the current mode of operation?

A. (1) Startup can **NOT** continue until the SRM is restored to an operable status.
(2) To ensure a high flux at shutdown alarm in reponse to a rod ejection event.

B. (1) Startup can continue provided power is raised to greater than P-6 within 2 hours.
(2) To ensure a high flux at shutdown alarm in reponse to a rod ejection event.

C. (1) Startup can **NOT** continue until the SRM is restored to an operable status.
(2) To ensure a high flux trip in response to boron dilution events.

D. (1) Startup can continue provided power is raised to greater than P-6 within 2 hours.
(2) To ensure a high flux trip in response to boron dilution events.

84. Given the following:

- During the RCS rapid cooldown in accordance with E-3, "Steam Generator Tube Rupture," the following conditions exist.
  - RCPs have been stopped.
  - Ruptured loop Tcold is 215°F.
  - Lowest Intact Loop Tcold is 403°F.
  - RCS pressure is 1250 psig.

Based on the above conditions, which ONE of the following identifies the status of the Pressurized Thermal Shock and the required procedure action?

REFERENCE PROVIDED

A. A RED path exists. Transition to FR-P.1, "Pressurized Thermal Shock," immediately.

B. A RED path exists. Remain in E-3 until the note prior to the step for determining if Containment Spray can be stopped.

C. An ORANGE path exists. Transition to FR-P.1, "Pressurized Thermal Shock," immediately.

D. An ORANGE path exists. Remain in E-3 until the note prior to the step for determining if Containment Spray can be stopped.

85. Given the following:

- A reactor trip occurred on Unit 1 as a result of the loss of control air which resulted in the MSIVs closing.
- The crew is currently performing FR-H.2, "Steam Generator Overpressure," with the following conditions existing.
  - RCS temperature is 570°F.

	SG#1	SG#2	SG#3	SG#4
- Pressure	1200 psig	1190 psig	1230 psig	1210 psig
- Level (NR)	43%	56%	90%	61%

Which ONE of the following is the proper procedure implementation?

A. Do **NOT** open SG#3 PORV and continue with FR-H.2.

B. Manually open SG#3 PORV and continue with FR-H.2.

C. Do **NOT** open SG#3 PORV and transition to FR-H.3, "Steam Generator High Level."

D. Manually open SG#3 PORV then transition to FR-H.3, "Steam Generator High Level."

86. Given the following:

- Unit 1 is operating at 12% power when a component failure causes the following three annunicator windows to alarm:

  93-F - EAGLE PROC PROT CH-IV RTD FAILURE

  110-F - PROT SET TROUBLE

  94-A - TAVG-TREF DEVIATION

- Status Panel window 79, PROT SET IV TROUBLE, is LIT.

- No other abnormal annunciators are LIT.

Which ONE of the following identifies...

(1) an impact of the failure that caused the alarms

and

(2) the procedure that will be implemented to mitigate and control the consequences of the failure?

A. (1) S/G LO-LO level reactor trip time delay interval will be changed.
(2) AOI-44, "Eagle 21 Malfunctions"

B. (1) S/G LO-LO level reactor trip time delay interval will be changed.
(2) AOI-2, "Malfunction of Reactor Control System"

C. (1) The Rack Test Sequence Processor (TSP) circuit has failed.
(2) AOI-44, "Eagle 21 Malfunctions"

D. (1) The Rack Test Sequence Processor (TSP) circuit has failed.
(2) AOI-2, "Malfunction of Reactor Control System"

87. Given the following:

- Unit 1 is in Mode 3 with the RCS at normal operating temperature and pressure.
- A loss of 120v AC Vital Instrument Power Board 1-III occurs.
- AOI-25.03, "Loss of 120V AC Vital Instrument Power Boards 1-III or 2-III," directs use of SOI-235.03, "120V AC Vital Power System 1-III," to restore the board.

Which ONE of the following identifies...

(1) how the Unit 1 SSPS Train A ESF relays are affected by the loss of the vital board

and

(2) the SOI-235.03 procedure section that if implemented to re-energize the board will allow Tech Spec LCO 3.8.9, "Distribution Systems - Operating" to be exited?

A. (1) ONLY the master relays could be energized.
(2) Section 8.3, "Transfer 120V AC Vital Instrument Power Board 1-III to Spare 120V AC Vital Inverter 0-III."

B. (1) ONLY the master relays could be energized.
(2) Section 8.1, "Transferring 480V AC Vital Transfer Switch III to Alternate 480V Power Supply."

C. (1) Both the master relays and the slave relays could be energized.
(2) Section 8.3, "Transfer 120V AC Vital Instrument Power Board 1-III to Spare 120V AC Vital Inverter 0-III."

D. (1) Both the master relays and the slave relays could be energized.
(2) Section 8.1, "Transferring 480V AC Vital Transfer Switch III to Alternate 480V Power Supply."

88. Given the following:

- Unit 1 is in Mode 4 with RCS heat up in progress following a refueling outage.

- 1-SI-3-902, "Turbine Driven Auxiliary Feedwater Pump 1A-S Quarterly Performance Test," is determined to be out of frequency and past the maximum late date.

Which ONE of the following identifies if the AFW condition allows entry into Mode 3 and the associated Tech Spec action required if heatup is to be continued?

Mode 3 entry is...

A. allowed and 1-SI-3-902 must be satisfactorily completed within 24 hours after SG pressure is $\geq$ 1092 psig.

B. allowed and 1-SI-3-902 must be satisfactorily completed within 48 hours after SG pressure is $\geq$ 1092 psig.

C. **NOT** allowed and 1-SI-3-902 must be satisfactorily performed within 24 hours or the TDAFW pump declared inoperable.

D. **NOT** allowed and 1-SI-3-902 must be satisfactorily performed within 48 hours or the TDAFW pump declared inoperable.

89. Given the following:

- Unit 1 is operating at 100% power.
- Transmission System Grid conditions result in the 161kV voltage slowly dropping.
- Annunciator window 501-B, "CSST C ABNORMAL" alarms.
- The crew determines the Train A 6.9kV Shutdown Board voltages to be:

1A-A	2A-A
6790v	7020v

- The SRO places the required CSST C tap changers to MANUAL and returns Shutdown board voltages to normal.

Which ONE of the following identifies...

(1) the status of 6.9kV Shutdown Board 1A-A prior to manual tap changer adjustment

and

(2) how placing the tap changer in MANUAL affects the status of offsite power?

A. (1) Operable
(2) Operability is **NOT** maintained

B. (1) Inoperable
(2) Operability is **NOT** maintained

C. (1) Operable
(2) Operability is maintained

D. (1) Inoperable
(2) Operability is maintained

90. Given the following:

0700 - Unit 1 is operating at 100% power.

0800 - ERCW Header 1B-B ruptures requiring the header to be crosstied to the ERCW 2A-A header.

0900 - A plant shutdown to Mode 3 is initiated.

Which ONE of the following identifies...

(1) the latest time allowed to make the initial required §50.72 report in accordance with NPG-SPP-03.5, "Regulatory Reporting Requirements,"

and

(2) the reason the report is required?

A. (1) 1200
(2) The plant is in an unanalyzed condition that degrades plant safety.

B. (1) 1300
(2) A shutdown was initiated that was required by plant Tech Specs.

C. (1) 1600
(2) The plant is in an unanalyzed condition that degrades plant safety.

D. (1) 1700
(2) A shutdown was initiated that was required by plant Tech Specs.

91. Given the following:

- Unit 1 operating at 100% power with Power Range Monitor NI-41 out of service.
- Power is reduced to 96% due to secondary equipment problems, the following conditions exist.
  - Control Bank D step counters indicate 194/193 steps.
  - Control Bank D CERPI indications are:

Group 1				Group 2				
M4	D4	M12	D12	H4	M8	H8	D8	H12
185	192	196	193	187	192	193	198	192

- QPTR is determined to be 1.04.

Which ONE of the following identifies if...

(1) LCO 3.1.5 Rod Group Alignment Limits is required to be entered

and

(2) the power level the unit must be lowered to due to QPTR?

A. (1) No
(2) 88%

B. (1) No
(2) 84%

C. (1) Yes
(2) 88%

D. (1) Yes
(2) 84%

92. Given the following:

- Reactor power is currently at 90% during a power reduction when the following occurs.
- Several annunciators alarm, simultaneously.
- Bank D control rods begin inserting and stop when the OAC places rod control in manual.
- Steam generator levels start dropping but are stabilized by the manual actions of the CRO.
- The CRO determines that one of the 120V AC Vital Instrument Power Boards has de-energized.
- OAC reports that Tavg is stabilized but is 4°F below Tref.

Which ONE of the following identifies...

(1) the procedure the Unit Supervisor would implement

and

(2) the required time allowed to restore the lost electrical board to operable status before being required to be in Mode 3 within the next 6 hours?

A. (1) AOI-25.02, "Loss of 120V AC Vital Instrument Power Boards 1-II or 2-II"
(2) 8 hours

B. (1) AOI-25.02, "Loss of 120V AC Vital Instrument Power Boards 1-II or 2-II"
(2) 2 hours

C. (1) AOI-25.04, "Loss of 120V AC Vital Instrument Power Boards 1-IV or 2-IV"
(2) 8 hours

D. (1) AOI-25.04, "Loss of 120V AC Vital Instrument Power Boards 1-IV or 2-IV"
(2) 2 hours

93. Given the following:

- Unit 1 is at 100% power.

- At the Wednesday day shift turnover meeting, Chemistry reports that the Daily Monitoring Worksheet for Waste Gas Analyzer, 0-XIC-43-450, had not been completed during performance of 0-SI-77-3, "WDS Waste Gas Oxygen Determination," for Monday and Tuesday.

- During the shift, inadequate cover gas results in oxygen intrusion into HUT 'B' as water is transferred to the Monitor Tank.

Which ONE of the following identifies...

(1) if the monitor can be considered operable at the beginning of the shift

and

(2) the lowest oxygen level detected that will result in implementation of SOI-77.02, "Waste Gas Disposal System," Section 8.7, "Response to Oxygen Intrusion?"

A. (1) No
(2) 2%

B. (1) No
(2) 4%

C. (1) Yes
(2) 2%

D. (1) Yes
(2) 4%

94. Given the following:

- Unit 1 is operating at 100% power.

- Chemistry reports the RCS Dissolved Oxygen concentration is above the TR-3.4.4, Reactor Coolant System, Chemistry 'Steady State Limit'.

Which ONE of the following identifies...

(1) the completion time allowed to restore the Dissolved Oxygen to within limits without further action being required

and

(2) the relationship of the 'Transient Limits' to the 'Steady State Limits' in TR-3.4.4?

A. (1) 6 hours
(2) The Transient Limits are 5 times the Steady State Limits.

B. (1) 6 hours
(2) The Transient Limits are 10 times the Steady State Limits.

C. (1) 24 hours
(2) The Transient Limits are 5 times the Steady State Limits.

D. (1) 24 hours
(2) The Transient Limits are 10 times the Steady State Limits.

95. Given the following:

- Unit 1 is operating at 100% power.
- The Shift Manager is temporarily filling the Unit 1 SRO position while the Unit SRO is performing a work observation in the Auxiliary Building and is three minutes away.
- The CRO has left the Main Control Room to assist an AUO in the Turbine Building.
- Other personnel in the Main Control Room are:
  - the Operator at the Controls (OAC),
  - a Work Control SRO with an inactive license, and
  - an extra Unit Operator with an RO license.
- A rapid drop in SG #4 level results in a Reactor Trip.
- After the transition to ES-0.1, "Reactor Trip Response," is made the 'Procedure Reader' announces that due to conflicting indications that a transition to ES-0.0, "Rediagnosis," is needed.

In accordance with TI-12.04, "User's Guide for Abnormal and Emergency Operating Instructions," which ONE of the following identifies...

(1) the preferred individual the Shift Manager will assign to be the procedure reader until the Unit 1 SRO returns

and

(2) if the transition to ES-0.0, "Rediagnosis" is allowed?

A. (1) The extra Unit Operator
(2) Transition to ES-0.0 is allowed.

B. (1) The extra Unit Operator
(2) Transition is **NOT** allowed, remain in ES-0.1.

C. (1) The Work Control SRO
(2) Transition to ES-0.0 is allowed.

D. (1) The Work Control SRO
(2) Transition is **NOT** allowed, remain in ES-0.1.

96. Given the following:

- Unit 1 is operating at 100% power with RHR pump 1B-B out of service and tagged.

  0750 - DG 1A-A is determined to be inoperable.

  0845 - 0-SI-82-2, "8 Hour Diesel Generator AC Power Source Operability Verification," is completed.

Which ONE of the following identifies the <u>latest</u> time allowed by Tech Specs...

(1) to declare RHR pump 1A-A inoperable.

and

(2) for the next completion of 0-SI-82-2?

A. (1) 1150
   (2) 1645

B. (1) 1150
   (2) 1845

C. (1) 0750 the following day
   (2) 1645

D. (1) 0750 the following day
   (2) 1845

97. Given the following:

- Unit 1 is in MODE 5 during a refueling outage.

- It is determined that SOI-63.01, "Safety Injection System," needs a "Minor/Editorial Change" revision prior to performance of Section 5.1, "Fill & Vent SI Pumps and Piping from RWST."

In accordance with NPG-SPP-01.2, "Administration of Site Procedures," Which ONE of the following statements identifies the requirements for a 50.59 Screening Review and/or an Independent Qualified Reviewer (IQR) for the proposed revision?

A. Both are required.

B. Neither is required.

C. Only the IQR is required.

D. Only the 50.59 Screening Review is required

98. Which one of the following choices completes the statement below?

With Unit 1 in Mode 1, compliance with Technical Specification 3.4.16, RCS Specific Activity, ensures that the 2-hour dose at the site boundary will not exceed a small fraction of __(1)__ limits following a ____(2)____ or a Main Steam Line Break.

	(1)	(2)
A.	10CFR100	Steam Generator Tube Rupture
B.	10CFR100	Loss of Coolant Accident
C.	10CFR20	Steam Generator Tube Rupture
D.	10CFR20	Loss of Coolant Accident

99. Which ONE of the following identifies...

(1) the minimum time required to allow the contents of a Gas Decay tank to decay prior to release,

and

(2) who can waive the minimum time in accordance with SOI-77.02, "Waste Gas Disposal System?"

	Decay Time	Who can waive
A.	60 days	Chemistry Duty Manager
B.	60 days	Radiation Protection Manager
C.	40 days	Chemistry Duty Manager
D.	40 days	Radiation Protection Manager

100. Given the following plant conditions:

- A Site Area Emergency has been declared.
- Emergency Centers have **NOT** been activated.

Which of the following identifies the limitations, if any, on the delegation of the Site Emergency Director responsibilities in accordance with the Radiological Emergency Plan Implementing Procedures?

	Emergency Classification escalation	Determination of Protective Action Recommendations
A.	Can **NOT** be delegated.	Can **NOT** be delegated.
B.	Can **NOT** be delegated.	Can be delegated.
C.	Can be delegated.	Can **NOT** be delegated.
D.	Can be delegated.	Can be delegated.

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1. Steam Tables
2. 1-SI-0-2B-02, 0700-1900 Shift and Daily Surveillance Log Mode Two (1 page)
3. 1-45W760-74-4 (1 sheet)
4. SOI-47.02, Turbo-Generator Startup Operation, Appendix E, Generator Capability Curve (1 page)
5. FR-0, Status Trees, Attachment 1, Monitoring Critical safety Functions "Limit A Curve" (1 page)