U. S. Nuclear Regulatory Commission

Site-Specific SRO Written Examination

Applicant Information	
Name:	
Date:	Facility / Unit North Anna Power Station
Region: I ☐ II ☒ III ☐ IV ☐	Reactor Type: W ☒ CE ☐ BW ☐ GE ☐
Start Time:	Finish Time:

Instructions

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

Applicant Certification

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

_____
Applicant's Signature

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

SRO REFERENCE MATERIAL

TRM-3.4.5 Primary to Secondary Leakage Detection System
(pg. 1, 2 & 4)

TS-3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation
(pg. 1-5)

TS-3.7.8, Service Water (SW) System
(pg. 1-3)

TS-3.8.1, AC Sources-Operating
(pg. 1-7)

TS-3.8.4, DC Sources-Operating
(pg. 1 & 2)

Figure 3.6.4-1, Containment Air Partial Pressure Versus Service Water Temperature

OP-AP-300, Reactivity Management

0-AP-27, Attachment 7, Spent Fuel Pool Heat-Up-Rate Following Loss of Cooling

VPAP-2802, Notifications and Reports

NAPS Emergency Action Levels Matrix

PCS Printout

NORTH ANNA 2016-301 FINAL SRO WRITTEN EXAM

	Answers
ID	**0**
*01 - 007EA2.06 1	C
*02 - 008AK1.01 1	D
*03 - 009EG2.4.21 1	A
*04 - 011EA1.09 1	C
*05 - 022AA2.02 1	B
*06 - 025AK1.01 1	A
*07 - 027AK2.03 1	D
*08 - 029EK3.03 1	D
*09 - 038EK3.03 1	B
*10 - 040AK2.01 1	D
*11 - 054AG2.4.20 1	C
*12 - 055EA1.02 1	B
*13 - 056AK3.01 1	C
*14 - 057AA2.19 1	A
*15 - 058AG2.4.11 1	B
*16 - WE04EK1.1 1	C
*17 - WE05EA1.1 1	C
*18 - WE11EK2.2 1	B
*19 - 028AK1.01 1	D
*20 - 032AA2.04 1	B
*21 - 033AK3.01 1	C
*22 - 060AK2.01 1	D
*23 - 067AA1.05 1	A
*24 - 068AK3.17 1	A
*25 - 076AA2.03 1	C
*26 - WE08EA1.1 1	A
*27 - WE09EG2.4.31 1	B
*28 - 003K5.02 1	B
*29 - 003K6.14 1	A
*30 - 004A2.22 1	A
*31 - 005A1.02 1	D
*32 - 005A2.01 1	C
*33 - 006K5.07 1	A
*34 - 006K6.05 1	B
*35 - 007G2.1.20 1	C
*36 - 008K2.02 1	D
*37 - 010K6.02 1	B
*38 - 012K4.04 1	B
*39 - 013A4.01 1	C
*40 - 022K4.03 1	D
*41 - 026A1.06 1	D
*42 - 039K5.08 1	D
*43 - 059A3.02 1	C
*44 - 061K2.01 1	B
*45 - 062A2.11 1	B
*46 - 062G2.4.11 1	C
*47 - 063K3.01 1	C
*48 - 064A4.01 1	A
*49 - 064K3.03 1	D
*50 - 073K1.01 1	A

	Answers
ID	0
*51 - 076A3.02 1	D
*52 - 076A4.01 1	D
*53 - 078G2.1.31 1	B
*54 - 078K1.05 1	A
*55 - 103K1.03 1	C
*56 - 002K5.10 1	D
*57 - 011K4.05 1	D
*58 - 014A1.02 1	C
*59 - 017K6.01 1	B
*60 - 027K2.01 1	C
*61 - 029K1.05 1	A
*62 - 033G2.2.3 1	C
*63 - 035A4.02 1	C
*64 - 055K3.01 1	B
*65 - 068A3.01 1	A
*66 - G2.1.14 1	D
*67 - G2.1.36 1	C
*68 - G2.2.20 2	B
*69 - G2.2.40 1	A
*70 - G2.3.11 1	A
*71 - G2.3.12 1	D
*72 - G2.3.15 1	A
*73 - G2.4.14 1	B
*74 - G2.4.26 1	D
*75 - G2.4.39 1	B
076 - 008AG2.4.6 1	A
077 - 054AG2.1.19 1	A
078 - 055EA2.03 1	A
079 - 058AG2.1.20 1	D
080 - 077AA2.05 1	B
081 - WE05EA2.2 1	D
082 - 001AA2.04 1	C
083 - 060AG2.4.30 1	B
084 - 061AA2.03 1	A
085 - WE14EG2.4.21 1	B
086 - 012A2.05 1	C
087 - 013A2.04 1	D
088 - 039A2.03 1	D
089 - 076G2.1.25 1	B
090 - 103G2.2.38 1	C
091 - 015G2.2.25 1	C
092 - 028A2.02 1	C
093 - 071G2.4.21 1	B
094 - G2.1.40 1	D
095 - G2.2.14 1	B
096 - G2.2.21 1	C
097 - G2.3.14 1	B
098 - G2.3.15 1	D
099 - G2.4.27 1	A
100 - G2.4.30 1	C

1. Which of the following completes both statements in accordance with 1-ES-0.1, Reactor Trip Response, step 8?

   VERIFY ALL IRPIs - ___(1)___ STEPS OR LESS.

   The RNO for step 8 provides guidance to ___(2)___.

   A. (1) 10
      (2) open the rod drive MG set ouput breakers

   B. (1) 12
      (2) open the rod drive MG set ouput breakers

   C. (1) 10
      (2) emergency borate

   D. (1) 12
      (2) emergency borate

2. Unit 2 was operating at 100% power when a Reactor Trip occurred due to 2-RC-SV-2551B, B Przr Safety, failing open.

The following conditions exist:

- The crew is currently performing 2-E-1 and is at step 6 - CHECK IF SI CAN BE TERMINATED.
- Pressurizer pressure is 1020 psig.
- PRT pressure rises to 55 psig.

Which of the following completes the statements below?

2-RC-TI-2467, B Przr Safety Valve Line Temperature, will indicate approximately ___(1)___.

In SI termination step 6, pressurizer level is checked only after first verifying ___ (2)___.

A. (1) 546°
   (2) RCS Subcooling

B. (1) 546°
   (2) containment temperature

C. (1) 320°
   (2) containment temperature

D. (1) 320°
   (2) RCS Subcooling

3. Given the following conditions:

- Unit 1 tripped from 100% power
- CETCs indicate 618°F
- RCS pressure is 1035 psig
- RVLIS full range indicates 45%
- RCPs are off
- Containment pressure is 30 psia
- No Quench Spray Pumps are running

Which of the following identifies the highest priority Functional Restoration Procedure that is currently met in accordance with 1-F-0, Critical Safety Function Status Trees?

A. 1-FR-C.2, Response to Degraded Core Cooling (Orange path)

B. 1-FR-C.1, Response to Inadequate Core Cooling (Red path)

C. 1-FR-Z.1, Response to High Containment Pressure (Red path)

D. 1-FR-Z.1, Response to High Containment Pressure (Orange path)

4. Given the following:

   • Unit 1 was at 100% power when a LOCA occurred

   • 1-E-1, Loss of Reactor or Secondary Coolant, is in progress

   • The operating crew is currently performing step 22 - Check if SI Accumulators should be isolated.

   Which of the choices below completes the following statements in accordance with 1-E-1?

   ___(1)___ indication is used to determine if SI Accumulators will be isolated.

   If a SI accumulator isolation valve cannot be closed then the accumulator will be vented to the ___(2)___.

   A. (1) Accumulator Level
      (2) Process vents

   B. (1) Accumulator Level
      (2) Gas Stripper

   C. (1) RCS Hot leg temperature
      (2) Process vents

   D. (1) RCS Hot leg temperature
      (2) Gas Stripper

5. Unit 1 is at 100% with the A charging pump running
   - The B charging pump is available with its control switch in AUTO-AFTER-STOP
   - The C charging pump is available with its control switch in AFTER-STOP

   The following indications are noted:

   - Charging flow is erratic
   - Charging discharge header pressure is erratic
   - The A charging pump motor amps are erratic
   - The A charging pump trips
   - The B charging pump automatically starts
   - The same erratic indications are noted on the charging header and the B charging pump trips after 30 seconds

   Which of the following choices describes the required actions in accordance with 1-AP-49, Loss of Normal Charging?

   A. Go to 1-AP-48, Charging Pump Cross-Connect

   B. Perform 1-AP-49 Attachment 2, Venting Charging Pumps

   C. Immediately start the C charging pump

   D. Close discharge MOVs on the previously running charging pumps and then start the C charging pump

6. Given the following:

- Unit 1 is in Mode 4 with cooldown to Mode 5 in progress.
- RCS temperature is 250°F
- 1-RC-P-1C, C Reactor Coolant Pump, is running
- The C SG level is being maintained at 33%
- 1-RH-P-1A, A RHR Pump, is in service
- RHR return flow is aligned to the B loop through 1-RH-MOV-1720A, RHR Outlet Isol Valve Discharge To B Cold Leg
- 1-RH-FCV-1605, RHR Heat Exchanger Bypass Flow, is in automatic
- 1-RH-HCV-1758, RHR Heat Exchanger Outlet, is throttled open

The following occurs:

- Annunciator E-A6, RHR PP 1A AUTO TRIP, alarms
- Annunciator E-A8, RHR SYSTEM LOW FLOW, alarms

Which of the following completes both statements?

In accordance with 1-AP-11, Loss of RHR, the operator is required to close ___(1)___ prior to starting 1-RH-P-1B.

After starting 1-RH-P-1B,Tech Spec LCO 3.4.6, RCS Loops-MODE 4, ___(2)___ met.

A. (1) 1-RH-FCV-1605 and 1-RH-HCV-1758
   (2) is

B. (1) 1-RH-FCV-1605 and 1-RH-HCV-1758
   (2) is not

C. (1) 1-RH-MOV-1720A
   (2) is

D. (1) 1-RH-MOV-1720A
   (2) is not

7. Initial conditions:

   • Rx heatup is in progress following a refueling outage

   • All RCPs are running

   • RCS pressure = 1800 psig

   • The Przr PORVs and spray valves are in AUTO

   Current conditions:

   • The Pressurizer Master Pressure Controller, 1-RC-PCV-1444J, output fails high

   Which of the choices below completes the following statements?

   As a result of the failure, 1-RC-PCV-1455C, Przr PORV, ___(1)___ open.

   In accordance with 1-AP-44, Loss of Reactor Coolant System Pressure, if 1-RC-PCV-1455A, A Przr Spray valve, cannot be closed then the first RCP that will be secured is ___(2)___.

   A. (1) will
      (2) 1-RC-P-1A

   B. (1) will not
      (2) 1-RC-P-1A

   C. (1) will
      (2) 1-RC-P-1C

   D. (1) will not
      (2) 1-RC-P-1C

8. Unit 1 was at 100% power when a reactor trip signal occurred

   The reactor failed to trip automatically or manually.

   The crew is responding to an ATWS in accordance with 1-FR-S.1, Response to Nuclear Power Generation/ATWS.

   After initiating emergency boration flow, the crew determines that adequate negative reactivity insertion is NOT occurring due to control rods not inserting in AUTO or MANUAL.

   Which of the following identifies the required method for injecting the Boron Injection Tank (BIT) in accordance with 1-FR-S.1, Response to Nuclear Power Generation/ATWS, including the reason for this method?

   A. Initiate Safety Injection; Provides greater BIT flow rate

   B. Initiate Safety Injection; Prevents loss of heat sink

   C. Manually align the BIT; Provides greater BIT flow rate

   D. Manually align the BIT; Prevents loss of heat sink

9. Given the following conditions:

- Unit 1 is at 100% power
- High capacity steam generator blowdown is in service
- A large tube leak occurs on the A Steam Generator
- 1-SS-RM-125, High Capacity SG Blowdown Radiation Monitor receives a High-High radiation alarm

Which of the following automatic actions occur due to the radiation alarm?

A. Closes 1-BD-LCV-101, SG Blowdown Flash Tank Drain Cooler outlet

B. Closes 1-BD-FCV-102A,B & C, SG High Capacity Blowdown flow control valves

C. Closes 1-BD-TV-100A - F, SG Blowdown Containment Isolation trip valves

D. Opens 1-BD-PCV-101, SG Blowdown flash Tank Outlet to Condenser

10. Unit 2 is currently heating up following a refueling outage

• RCS Tavg = 520°F

• A Steam line break occurs on the B SG one foot downstream of the steam flow venturi.

Which of the following completes both statements?

The signal that should auto-close the Main Steam Trip Valves (MSTVs) is ___(1)___.

In acccordance with 2-E-2, Faulted Steam Generator Isolation, if the MSTVs can not be manually closed then the crew is required to close ___(2)___ SG Non-Return Valve(s).

A. (1) High Steam flow coincident with Lo-Lo Tavg
(2) only the faulted

B. (1) High Steam flow coincident with Lo-Lo Tavg
(2) all

C. (1) Intermediate Hi-Hi Containment pressure
(2) only the faulted

D. (1) Intermediate Hi-Hi Containment pressure
(2) all

11. Unit 1 is at 65%

- A and B Main Feed pumps are running
- C Main Feed pump is tagged out
- The B Main Feed pump trips
- Main Feedwater Pump suction pressure is 290 psig and stable
- The crew is performing 1-AP-31, Loss of Main Feedwater

Which of the choices below completes the following statements in accordance with 1-AP-31?

An additional Condensate Pump ___(1)___ required to be started.

Turbine ramp rates must be limited to ___(2)___ %/minute or less.

A. (1) is
   (2) 2

B. (1) is not
   (2) 2

C. (1) is
   (2) 5

D. (1) is not
   (2) 5

12. Given the following:

- A station blackout event has occurred.
- The crew is performing 1-ECA-0.0, Loss of All AC Power, Attachment 5, Attempting To Restore Power To 1H(1J) Emergency Bus.
- The operator has just pushed the Emer Gen 1H Alarm & Shutdown Reset button

Which of the following completes both statements in accordance with Attachment #5 of 1-ECA-0.0?

Verify that the 1H Shutdown Relay Status Light ___(1)___ lit.

The operator ___(2)___ required to wait 1 minute after resetting the Shutdown Relay prior to starting the 1H EDG.

A. (1) is
   (2) is not

B. (1) is
   (2) is

C. (1) is not
   (2) is not

D. (1) is not
   (2) is

13. Given the following:

Unit 1 was in MODE 5 when a Loss of Offsite Power occurred

All Emergency Diesel Generators start and re-energize the emergency busses.

Which of the choices below completes the following statement?

When power is restored following the undervoltage condition, the Stub Bus breaker will automatically re-close after a ___(1)___ second time delay in order to ___(2)___.

A. (1) 20
   (2) prevent overloading of the emergency diesel generator

B. (1) 20
   (2) to ensure service water flow is promptly restored

C. (1) 15
   (2) prevent overloading of the emergency diesel generator

D. (1) 15
   (2) to ensure service water flow is promptly restored

14. Unit 1 is in Mode 5

- RHR is in service
- 1-RC-P-1C is running

A loss of the 1-I Vital AC Bus occurs.

Which of the following completes both statements?

The C RCP must be secured due to loss of ___(1)___ cooling.

In accordance with 1-AP-11, Loss of RHR, Attachment 12, Local Operation of 1-CC-TV-103A and 1-CC-103B, the trip valves will be opened by ___(2)___.

A. (1) motor
   (2) connecting a nitrogen bottle to the actuator

B. (1) seal
   (2) connecting a nitrogen bottle to the actuator

C. (1) motor
   (2) connecting an electrical jumper to the air supply SOV

D. (1) seal
   (2) connecting an electrical jumper to the air supply SOV

15. Unit 1 is at 100% power

• The Vital DC Bus 1-III is lost

Which of the following completes both statements in accordance with 0-AP-10, Attachment 15, Loss of DC Bus 1-III?

If 15H7, C Charging pump normal supply breaker, was closed prior to a loss of 1J bus control power, then 1-CH-P-1C will ___(1)___.

The crew is required to feed the steam generators with ___(2)___.

A. (1) continue to run
   (2) Bypass Feed Regulating Valves

B. (1) continue to run
   (2) Auxiliary Feedwater

C. (1) trip off
   (2) Bypass Feed Regulating Valves

D. (1) trip off
   (2) Auxiliary Feedwater

16. At 0835, Unit 1 experienced a LOCA outside of containment

The crew has transitioned to 1-ECA-1.1, Loss of Emergency Coolant Recirculation, and is at the RNO step "Establish minimum SI flow to remove decay heat."

The current time is 0950

Which of the following completes both statements in accordance with 1-ECA-1.1?

The minimum amount of SI flow required to remove decay heat is ___(1)___.

The Safety Injection pumps must be stopped when RWST level reaches ___(2)___.

Reference Provided

A. (1) 290 gpm
   (2) 3%

B. (1) 265 gpm
   (2) 3%

C. (1) 290 gpm
   (2) 8%

D. (1) 265 gpm
   (2) 8%

17. Unit 1 was at 100% power when a loss of all Main and Auxilliary Feedwater flow has occurred

    1-FR-H.1, Response to Loss of Secondary Heat Sink, is in progress.

    The crew is currently depressurizing Steam Generators (SG) to restore feedwater flow from the Condensate System

    The following indications are observed:

    Feed flows:

    - 0.3×10^6 lbm/hr to A SG
    - 0.4×10^6 lbm/hr to B SG
    - 0.2×10^6 lbm/hr to C SG.

    SG Wide range levels are:

    - A = 38% and lowering
    - B = 32% and lowering
    - C = 12% and lowering

    - SG pressures = 530 psig

    In accordance with 1-FR-H.1, which of the following statements is correct?

    A. Secondary heat sink is restored.

    B. Continue SG depressurization until either SG wide range levels rising <u>OR</u> Core Exit TCs lowering

    C. Continue SG depressurization until Feed flow to at least one SG is $>0.7 \times 10^6$ lbm/hr

    D. Bleed and Feed criteria are met

18. Given the following conditions:

- A LOCA has occurred on Unit 1
- The crew is performing 1-ECA-1.1, Loss of Emergency Coolant Recirculation
- RWST level is 7% and slowly lowering
- Containment pressure is 19 psia
- The crew is at step 34 - Depressurize all intact SGs to inject SI accumulators as necessary

Which of the choices below completes the following statement?

The ___(1)___ will be used to dump steam as required to maintain ___(2)___ level indication.

A. (1) SG PORVs
   (2) Pressurizer

B. (1) SG PORVs
   (2) RVLIS

C. (1) Main steam dumps
   (2) Pressurizer

D. (1) Main steam dumps
   (2) RVLIS

19. Unit 1 is operating at 100%

Pressurizer level control is in automatic and the level channel defeat switch is selected to the 459/460 position

A small leak develops on the reference leg of 1-RC-LT-1459, Channel III Pressurizer level transmitter.

The crew enters 1-AP-3, Loss of Vital Instrumentation.

Which of the following identifies the required operator action in accordance with 1-AP-3?

The operator will place controller ___(1)___ in manual and depress the output ___(2)___ button to restore actual pressurizer level to program.

A. (1) 1-RC-LCV-1459G
   (2) Lower

B. (1) 1-RC-LCV-1459G
   (2) Raise

C. (1) 1-CH-FCV-1122
   (2) Lower

D. (1) 1-CH-FCV-1122
   (2) Raise

20. Unit 1 is in MODE 2 with a reactor start up in progress in accordance with 1-OP-1.5, Unit Startup From MODE 3 To MODE 2

The RO is performing Step 2 of Attachment 4, Deenergizing Source Range NI Detectors, to verify proper overlap between Source range and Intermediate range NIs

Source range and Intermediate range NIs are indicating as follows:

•N-31 = $6x10^4$ CPS

•N-32 = $1x10^4$ CPS

•N-35 = $2x10^{-10}$ amps

•N-36 = $1.5x10^{-10}$ amps

Which of the following completes both statements?

In accordance with 1-OP-1.5, overlap between source range and intermediate range detectors ___(1)___ adequate.

If N-32 failed high at this time, the reactor ___(2)___ trip.

A. (1) is
(2) will not

B. (1) is
(2) will

C. (1) is not
(2) will not

D. (1) is not
(2) will

21. Unit 2 is in MODE 2 starting up in accordance with 2-OP-1.5, Unit Startup From MODE 3 To MODE 2

Intermediate Range NIs are reading $3x10^{-11}$ amps

Annunciator 2A-B5, NIS IR CH II LOSS OF COMP VOLT, alarms

Which of the following completes both statements?

N-36 will indicate ___(1)___ than actual.

2-AP-4.2, Malfunction of Nuclear Instrumentation (Intermediate Range), ___(2)___ allow the crew to raise power above P-6

A. (1) higher
   (2) does

B. (1) lower
   (2) does

C. (1) higher
   (2) does not

D. (1) lower
   (2) does not

22. Both Units are at 100% power.

In accordance with 0-OP-23.2, WGDT and Waste Gas Diaphragm Commpressors, nitrogen is being added to the "A" Waste Gas Decay Tank (WGDT) due to high oxygen level

Due to a distraction, the WGDT is overpressurized causing the rupture disc to rupture and the relief valve to open

The following annunciators are received on Unit 2:

- 2B-A5 - PROCESS VENT VNT STACK A&B LOW RAD MON ALERT/RAD
- 2B-B5 - PROCESS VENT VNT STACK A&B HI HI RADIATION

Which the following completes both statements?

The radiation monitor that alarmed due to this event is ___(1)___.

In accordance with 0-AP-5.2, MGP Radiation Monitoring System, once the release has been stopped and radiation levels returned to normal, the MGP system is returned to normal range monitoring by ___(2)___.

A. (1) 1-RM-RMS-179, Vent Stack A Rad Monitor
   (2) Operations

B. (1) 1-RM-RMS-179, Vent Stack A Rad Monitor
   (2) the Instrument department

C. (1) 1-RM-RMS-180, Vent Stack B Rad Monitor
   (2) Operations

D. (1) 1-RM-RMS-180, Vent Stack B Rad Monitor
   (2) the Instrument department

23. A fire has occurred in the Main Control Room requiring evacuation.
The crew is performing 0-FCA-1, Control Room Fire.
Operators have been dispatched to perform Attachment 6, Establish Auxiliary Building Ventilation

Which of the choices below completes the following statement on how the Appendix R flexible duct is routed in accordance with 0-FCA-1?

The flexible duct is routed from the ___(1)___ to the ___(2)___ of the running charging pump on each unit.

A. (1) Appendix R ventilation locker on the 2nd floor
(2) ladder way

B. (1) ventilation duct between the CC heat exchangers on the 3rd floor
(2) ladder way

C. (1) Appendix R ventilation locker on the 2nd floor
(2) ventilation duct

D. (1) ventilation duct between the CC heat exchangers on the 3rd floor
(2) ventilation duct

24. Unit 2 was operating at 100% power

The crew was forced to evacuate the main control room.

The crew is performing 2-AP-20, Operation From The Auxiliary Shutdown Panel, and is at step 12 – Check If Emergency Boration Is Required

Which of the following completes both statements?

Emergency boration is required if ___(1)___ IRPI(s) indicate(s) greater than 10 steps.

2-CH-MOV-2350, Emergency Boration Valve, ___(2)___ be operated from the Auxiliary Shutdown Panel.

A. (1) at least 2 or more
   (2) can not

B. (1) any
   (2) can not

C. (1) at least 2 or more
   (2) can

D. (1) any
   (2) can

25. Unit 2 is at 100%

Annunciator K-D2, RAD MONITOR SYSTEM HI, alarms due to 2-CH-RM-228, Letdown Radiation Monitor

The crew is performing 2-AP-5, Unit 2 Radiation Monitoring System, Attachment 8, Reactor Coolant Letdown Radiation Monitor

Which of the choices below completes the following statement?

In accordance with Attachment 8 Step 3, the operator is required to check the Letdown Radiation Monitor reading by selecting screen display Channel _____.

A. A FuelFail%

B. B Vol Act µci/cc

C. C ProcDose mrem/h

D. D BG Hx Rm mrem/h

26. Unit 1 was at 100% power when a Steam Generator steam leak occurred inside containment

During performance of EOPs, Red Path criteria was met for 1-FR-P.1, Response to Imminent Pressurized Thermal Shock.

The crew is currently implementing 1-FR-P.1 step 26, Determine If RCS Temperature Soak Is Required.

Which of the following completes both statements in accordance with step 26?

A RCS temperature soak is required if the cooldown rate in the ___(1)___ is greater than ___(2)___°F in any 60 minute period.

A. (1) Cold legs only
   (2) 100

B. (1) Cold legs only
   (2) 50

C. (1) Cold legs or Hot legs
   (2) 100

D. (1) Cold legs or Hot legs
   (2) 50

27. Unit 1 was at 100% power when a loss of all offsite power occurred.

The crew is responding in accordance with 1-ES-0.1, Reactor Trip Response, and has initiated Attachment 2, Natural Circulation Verification.

Which of the following is an indication of INADEQUATE natural circulation flow in accordance with Attachment 2?

(Consider each choice separately)

A. RCS T_{HOT} is 551 °F and stable

B. RCS T_{COLD} is 554 °F with Steam Generator pressure at 1035 psig

C. Core exit TCs are 560 °F and stable

D. Steam Generator pressure is 1050 psig and stable

28. Given the following conditions:

- Unit 1 is at 4% power and performing a startup in accordnce with 1-OP-1.5, Unit Startup From Mode 3 To Mode 2.
- The B RCP trips.

Which of the following identifies how the Departure from Nucleate Boiling Ratio (DNBR) is affected and the minimum required action?

A. DNBR has decreased; insert Control Bank D rods to less than 5 steps then trip the reactor.

B. DNBR has decreased; immediately trip the reactor

C. DNBR has increased; insert Control Bank D rods to less than 5 steps then trip the reactor.

D. DNBR has increased; immediately trip the reactor

29. Unit 2 is in MODE 5 following a refueling outage

The C RCP is running with the C loop stop valves open

The crew is preparing to start the A RCP in accordance with 2-OP-5.2, Reactor Coolant Startup and Shutdown.

Which of the following conditions prevents starting the A RCP?

A. A RCP Bearing oil lift pressure = 300 psig

B. Cold leg loop stop valve full closed, Hot leg loop stop valve full closed and the loop bypass valve full open

C. The A Cold leg wide range temperature is 10°F lower than B cold leg wide range temperature

D. RCS pressure less than 325 psig

30. Unit 2 is at 50% power with an unidentified leak in progress

- Pressurizer level is 46% and stable
- 2-CH-FCV-2122, Charging Flow Control Valve, is in auto
- Charging flow is 74 gpm
- Letdown flow is 79 gpm
- Seal injection flows are:
  - A = 8.1 gpm, B = 7.9 gpm, C = 8.2 gpm
- RCP Seal leak off flows are:
  - A = 2.4 gpm, B = 2.2 gpm, C = 2.6 gpm

Which of the choices below completes both statements?

VCT automatic make up will first occur at ___(1)___%.

In accordance with 2-AP-16, Increasing Primary Plant Leakage, step 5, Identify And Isolate System Leakage, letdown ___(2)___ required to be isolated.

A. (1) 21.5
   (2) is not

B. (1) 21.5
   (2) is

C. (1) 15
   (2) is not

D. (1) 15
   (2) is

31. Unit 1 is in Mode 6 with core offload in progress

In accordance with Tech Spec 3.9.5, Residual Heat Removal (RHR) and Coolant Circulation—High Water Level, which of the choices below completes both statements?

Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ ___(1)___ gpm.

The required RHR loop may be removed from operation for ≤ 1 hour per ___(2)___ hour period.

A. (1) 2000
   (2) 24

B. (1) 2000
   (2) 8

C. (1) 3000
   (2) 24

D. (1) 3000
   (2) 8

32. Unit 1 is in mode 5

- RHR is in service
- 1-RH-FCV-1605, RHR Heat Exchanger Bypass Flow, is controlling in automatic
- An instrument technician inadvertently isolates and vents the low pressure side of 1-RH-FT-1605, RHR Header Flow Transmitter.

Which of the choices below completes both statements?

Prior to any operator actions, actual flow through the RHR heat exchangers will ___(1)___.

The operator will have to take manual control of 1-RH-FCV-1605 and depress the ___(2)___ button to return the controller to the previous output.

A. (1) lower
   (2) Raise

B. (1) lower
   (2) Lower

C. (1) rise
   (2) Raise

D. (1) rise
   (2) Lower

33. 1-E-3, Steam Generator Tube Rupture, is being performed.

The RCPs are secured.

Which of the following completes both statements?

In accordance with 1-E-3, cooldown and depressurization may give a false ___(1)___ leg temperature indication on the ruptured loop.

This is due to ___(2)___.

A. (1) cold
(2) SI flow

B. (1) cold
(2) backflow from the ruptured SG

C. (1) hot
(2) SI flow

D. (1) hot
(2) backflow from the ruptured SG

34. Which of the following are affected by a loss of service water?

A. Low Head SI pumps

B. High Head SI pumps

C. Casing Cooling pumps

D. Quench Spray pumps

35. Unit 1 is operating at 100% power.

Which of the following completes both statements in accordance with 1-OP-5.7, Operation of the PRT?

In accordance with section 5.1, Draining The PRT, the content of the PRT is first directed to the ___(1)___.

The minimum pressure that the PRT should be maintained at during normal operations is ___(2)___ psig.

A. (1) Gas stripper
   (2) 8

B. (1) Gas stripper
   (2) 12

C. (1) Primary Drain Transfer Tank (PDTT)
   (2) 8

D. (1) Primary Drain Transfer Tank (PDTT)
   (2) 12

36. Both units are at 100%

1-CC-P-1A and 2-CC-P-1A are running

1-CC-P-1B and 2-CC-P-1B are in Auto after Stop

The C Reserve Station Service Transformer (RSST) deenergizes due to a fault in the transformer

Which of the choices below lists the CC pumps that will be running ONE (1) minute after the loss of the C RSST?

A. 1-CC-P-1B and 2-CC-P-1A ONLY

B. 1-CC-P-1A, 1-CC-P-1B and 2-CC-P-1A ONLY

C. 1-CC-P-1A, 2-CC-P-1A and 2-CC-P-1B ONLY

D. All 4 CC pumps

37. Unit 2 is in MODE 3

An event occurs that causes Pressurizer level to lower.

Which of the following completes both statements?

Pressurizer heaters will deenergize when Pressurizer level goes below a setpoint of ___(1)___ %.

The ___(2)___ group heaters require operator action to re-energize when level is restored.

A. (1) 15
   (2) backup

B. (1) 15
   (2) control

C. (1) 5
   (2) backup

D. (1) 5
   (2) control

38. Unit 2 is at 100% power

The crew is performing 2-PT 36.1A, Train A Reactor Protection And ESF Logic Actuation Logic Test

Annunciator D-A4. TURBINE TRIPPED RX TRIP, is received

The Reactor trip and bypass breaker positions indicate as follows:

Reactor Trip Breaker A (RTA) - GREEN light lit.
Reactor Trip Breaker B (RTB) - RED light lit

Bypass Trip Breaker A (BYA) - RED light lit
Bypass Trip Breaker B (BYB) - GREEN light lit

Which of the choices below completes the following statements?

The Reactor ___(1)___ tripped.

The train "A" P-4 Reactor Trip signal ___(2)___ satisfied.

A. (1) is
   (2) is

B. (1) is not
   (2) is not

C. (1) is
   (2) is not

D. (1) is not
   (2) is

39. Given the following conditions:

- Unit 1 was at 100% power when a large break LOCA occured.
- Annunciator J-A2, RWST LO LEVEL, alarm is lit
- 1-SI-MOV-1885C, LHSI Pump A Recirc Valve, breaker trips and the valve fails to automatically reposition

Which of the following completes both statements?

The highest RWST level which will cause an automatic Swapover to Recirc Mode is ___(1)___%.

___(2)___ Low Head Safety Injection pump(s) will automatically align to containment suction.

A. (1) 23
   (2) Both

B. (1) 23
   (2) Only the B

C. (1) 16
   (2) Both

D. (1) 16
   (2) Only the B

40. Which of the following completes both statements?

The ___(1)___ system can be aligned to the Containment Air Recirc Fans (CARF) for backup cooling.

The containment isolation valves for cooling water to the CARFs are closed by a ___(2)___ isolation signal.

A. (1) Component Cooling

   (2) Phase A

B. (1) Component Cooling

   (2) Phase B

C. (1) Service Water

   (2) Phase A

D. (1) Service Water

   (2) Phase B

41. Unit 2 is at 100% power when a large break LOCA occurs inside containment.

Which of the following completes both statements?

When the CDA signal occurs, the Casing Cooling pumps start ___(1)___.

2-RS-MOV-200A, Casing Cooling Pump Discharge Valve, will receive an auto close signal when the casing cooling tank level lowers to the setpoint of ___(2)___%.

A. (1) at 60% RWST level
(2) 3

B. (1) at 60% RWST level
(2) 10

C. (1) immediately
(2) 3

D. (1) immediately
(2) 10

42. Given the following plant conditions:

- A Unit startup is in progress following a 10 day mid-cycle outage
- Reactor power is stable while critical data is being taken
- The Bypass MFRVs are in manual
- 1-MS-PCV-101A ("A" SG PORV) fails fully open

Which of the following completes both statements?

The A SG level will initially ___(1)___ after the SG PORV opens.

With no operator action, the final Reactor power will be ___(2)___ the Point of Adding Heat.

A. (1) lower
   (2) at

B. (1) lower
   (2) above

C. (1) rise
   (2) at

D. (1) rise
   (2) above

43. Given the following conditions:

- Unit 1 is at 100%
- Rod control is in MANUAL
- Steam generator level control is in AUTO
- All Steam generator level control inputs are selected to channel III
- 1-MS-PT-1446, Turbine First Stage Pressure, fails to 10%

With NO OPERATOR ACTION, which of the following predicts how SG level is affected?

A. Main Feed Regulating Valves (MFRVs) will control SG level at 33% level.

B. SG level will reach the Lo-Lo Reactor trip set point.

C. MFRVs will control SG level at 38% level.

D. SG level will remain at its current 100% normal value.

44. Given the following conditions:

- Unit 2 is at 100%
- A loss of all offsite power occurs
- The 2J EDG fails to start

Which of the choices below completes the following statement?

One minute after the loss of offsite power, there will be NO Auxiliary Feedwater (AFW) flow to the ___(1)___ SG and AFW flow to the A SG ___(2)___ be throttled from the control room.

A. (1) B
   (2) can

B. (1) B
   (2) can not

C. (1) C
   (2) can

D. (1) C
   (2) can not

45. Unit 1 is at 100% power

- 1-CH-P-1C is running on the H emergency bus
- 1-CH-P-1A and 1-CH-P-1B are in AUTO AFTER STOP
- The H emergency bus de-energizes due to the normal feeder breaker tripping open

Which of the following completes both statements?

After the H EDG re-energizes the H emergency bus, the ___(1)___ charging pumps will be running.

In accordance with 0-AP-10, Attachment 21, Unit 1 EDG Load Configuration To Prevent Overloading, the ___(2)___ charging pump will be left running.

REFERENCE PROVIDED

A. (1) A and B
   (2) C

B. (1) B and C
   (2) C

C. (1) A and B
   (2) A

D. (1) B and C
   (2) A

46. A loss of all AC has occurred on unit 1

- 1-ECA-0.0 Attachment 5, Attempting To Restore Power To 1H(1J) Emergency Bus, step 2 is being performed
- The highest RCP Seal Water Outlet Temperature is 225°F

Which of the following completes both statements in accordance with attachment 5?

RCP Seal Water Outlet temperature is monitored by using indications on the ___(1)___.

Placing the charging pumps in Pull-To-Lock ___(2)___ required prior to restoring power to an emergency bus.

A. (1) PCS
   (2) is

B. (1) Vertical Board
   (2) is

C. (1) PCS
   (2) is not

D. (1) Vertical Board
   (2) is not

47. A lightning strike has occurred resulting in a loss of the North Anna Switchyard.

- 125 Vital DC Bus 1-III is lost.

Which of the following completes both statements?

The 1J EDG ___(1)___ automatically start.

Breaker 15J2, 4160V Emer Bus 1J Emer Gen Supply, ___(2)___ be closed from the control room.

A. (1) will
(2) can

B. (1) will not
(2) can

C. (1) will
(2) can not

D. (1) will not
(2) can not

48. 2-OP-6.1, Operation of 2H Emergency Diesel Generator From Control Room, is being performed to start the 2H EDG.

Which of the following completes both statements?

The 2H EDG Mode Selector Switch must be in the ___(1)___ position to manually start the 2H EDG from the control room.

The 2H EDG will start ___(2)___ after the Normal Start pushbutton is depressed.

A. (1) Manual Remote
(2) two minutes

B. (1) Manual Remote
(2) immediately

C. (1) Manual Local
(2) two minutes

D. (1) Manual Local
(2) immediately

49. A loss of all AC has occurred on Unit 1

The crew is preparing to reenergize the 1H bus with the SBO diesel in accordance with 0-OP-6.4, Operation Of The SBO Diesel (SBO Event)

Which of the following completes both statements?

Bus 0L1 __(1)__ be used to re-energize the 1H bus.

In accordance with 0-OP-6.4, the reason that it is preferred to re-energize the 1H Bus is for __(2)__.

A. (1) will
(2) DC bus battery chargers

B. (1) will
(2) instrument air compressors

C. (1) will not
(2) DC bus battery chargers

D. (1) will not
(2) instrument air compressors

50. Unit 1 was at 100% power when a LOCA occurs inside containment

Which of the following completes both statements concerning the Recirculation Spray Heat Exchanger service water return radiation monitor sample pumps?

The Recirculation Spray Heat Exchanger service water return radiation monitor sample pumps (1-SW-P-5, 6, 7 and 8) will automatically start ___(1)___ seconds after a Phase B signal.

The RECIRC SPRAY HEAT EXCHANGER 1A-1B-1C-1D RM PP LO FLOW annunciator will alarm if flow is not detected for ___(2)___ seconds after the sample pump starts.

A. (1) 120
   (2) 30

B. (1) 30
   (2) 30

C. (1) 30
   (2) 120

D. (1) 120
   (2) 120

51. Given the following conditions:

- Unit 1 was at 100% power when an accident occurred.
- Containment pressure trend is as follows:

Time	Containment Pressure
1000	20 psia
1100	30 psia

Which of the following completes both statements?

Of the two times listed above, the EARLIEST time that the Service Water supply and return valves MOVs for the Recirc Spray Heat Exchangers will open is ___(1)___.

At that time, the recirc spray heat exchanger service water supply valves (1-SW-MOV-103A/B/C/D) will indicate ___(2)___ on the safeguards panel.

A. (1) 1000
   (2) full open.

B. (1) 1100
   (2) mid-position

C. (1) 1000
   (2) mid-position

D. (1) 1100
   (2) full open.

52. Given the following conditions:

- Both units at 100%
- 1-SW-P-1A and 2-SW-P-1A pumps are running
- A Large Break LOCA inside containment on Unit 1
- The B train of SI fails to actuate automatically or manually
- No other operator actions have been performed

Which of the following describes the status of 1-SW-P-1B and 2-SW-P-1B?

	1-SW-P-1B	2-SW-P-1B
A.	Not Running	Not Running
B.	Not Running	Running
C.	Running	Running
D.	Running	Not Running

53. The Instrument Air compressors are being swapped for equipment rotation.

- 2-IA-C-1 is taken from AUTO to HAND.
- 1-IA-C-1 is taken from HAND to AUTO.

Which of the following completes both statements concerning operation of the IA compressors?

1-IA-C-1 will ___(1)___.

The 2-IA-C-1 load and unload setpoints are ___(2)___ psig respectively.

A. (1) unload and stop after a 4 second time delay
(2) 103 and 109

B. (1) run unloaded for 20 minutes, then stop
(2) 103 and 109

C. (1) unload and stop after a 4 second time delay
(2) 98 and 106

D. (1) run unloaded for 20 minutes, then stop
(2) 98 and 106

54. Which of the following completes both statements?

The solenoid operated valves (SOV) that provide instrument air to the main steam trip valves (MSTV) ___(1)___ to vent air from the MSTVs.

If one MSTV closes while the unit is at 100% power, the ___(2)___ SI signal will actuate.

A. (1) energize
(2) High steam flow coincident with low steam pressure

B. (1) de-energize
(2) High steam flow coincident with low steam pressure

C. (1) energize
(2) High steam line differential pressure

D. (1) de-energize
(2) High steam line differential pressure

55. Which of the choices below completes the following statement?

The Unit 1 Containment Vacuum pumps will trip as a result of a Hi Radiation alarm on the _____ radiation monitor.

A. 1-RM-RMS-159, Containment Gaseous

B. 1-RM-RMS-160, Containment Particulate

C. 1-RM-GW-178, Process Vent

D. 1-RM-VG-179, Vent Stack A

56. Unit 1 is at 100% power.

RCS Tavg and Tref are matched

Which of the choices below completes the following statements?

The RCS Over Power Delta Temperature trip setpoint is ___(1)___%.

If 1-ES-MOV-101A, 1A Feedwater Heater Extraction Steam Isolation, closes then actual Delta T will ___(2)___.

A. (1) 126.4
   (2) lower

B. (1) 126.4
   (2) rise

C. (1) 107.9
   (2) lower

D. (1) 107.9
   (2) rise

57. Given the following conditions:

- Unit 1 is at 7% power
- 1-RC-LT-1460, Przr level channel II, failed and was placed in trip
- Pressurizer level control is in automatic and controlling on program
- 1-RC-LT-1459, Przr level channel I, fails high

Which of the following completes both statements?

The setpoint for Przr High Level reactor trip is ___(1)___%.

The reactor ___(2)___ trip when the failed channel output reaches the setpoint.

A. (1) 90
   (2) will

B. (1) 90
   (2) will not

C. (1) 92
   (2) will

D. (1) 92
   (2) will not

58. Which of the choices below completes the following statement?

Control Rod Insertion Limits are automatically monitored by comparing the rod position from the ___(1)___ with the limit that is derived from ___(2)___.

A. (1) pulse-to-analog converter
(2) Tave

B. (1) individual rod position detector coils
(2) Tave

C. (1) pulse-to-analog converter
(2) Delta T

D. (1) individual rod position detector coils
(2) Delta T

59. Given the following conditions:

- 2 Core Exit Thermocouples (CETC) for the Train A subcooling monitor are failed due to open circuits.

Which of the choices below completes the following statement?

The signals sent to the Train A Subcooling Monitor from these 2 failed CETCs are failed ___(1)___ and the Train A indicated subcooling value will be ___(2)___.

A. (1) low
   (2) higher than actual

B. (1) low
   (2) unaffected

C. (1) high
   (2) lower than actual

D. (1) high
   (2) unaffected

60. Which of the choices below completes the following?

The Containment Iodine Filtration Fans are located on the ___(1)___ foot elevation of containment and are powered from ___(2)___ busses.

A. (1) 216
   (2) Emergency

B. (1) 291
   (2) Emergency

C. (1) 216
   (2) Station Service

D. (1) 291
   (2) Station Service

61. Which of the choices below completes the following statement?

The containment purge blowers draw suction from containment via the ___(1)___ suction lines and discharge to the ___(2)___ discharge line.

A. (1) hydrogen recombiner
(2) Unit 2 containment vacuum pump

B. (1) hydrogen recombiner
(2) hydrogen recombiner

C. (1) containment vacuum pump
(2) Unit 2 containment vacuum pump

D. (1) containment vacuum pump
(2) hydrogen recombiner

62. Which of the following completes both statements concerning Spent Fuel Pit (SFP) indications and control?

Annunciator E-C5, SFP HI/HI-HI TEMP, is located on the Unit ___(1)___ panel.

1-FC-P-1B, B Spent Fuel Cooling Pump, can be started from Unit ___(2)___ vertical board.

A. (1) 1
(2) 1

B. (1) 2
(2) 2

C. (1) 1
(2) 2

D. (1) 2
(2) 1

63. Which of the following completes both statements in accordance with 1-FR-H.1, Response to loss of Secondary Heat Sink, if ALL steam generators (SG) are Hot/Dry?

IF required to feed hot/dry SG(s), THEN ___(1)___ should receive feed flow.

IF Core Exit TCs are ___(2)___, THEN limit feed flow to any hot/dry SG(s) to 100 gpm.

A. (1) only ONE SG
(2) increasing

B. (1) at least TWO SGs
(2) increasing

C. (1) only ONE SG
(2) decreasing

D. (1) at least TWO SGs
(2) decreasing

64. Given the following conditions:

The B waterbox is being removed from service in accordance with 1-MOP-48.31, Main Condenser - B Waterbox.

The operator inadvertently closes 1-VP-3, Condenser To CN Air Ejector VP Isol Valve, for the A waterbox.

1-VP-4, Condenser To CN Air Ejector VP Isol Valve, for the B waterbox, remains open.

CW flow through the B waterbox is subsequently isolated per the MOP.

Which of the following completes both statements?

Steam will fill the ___(1)___ air ejector suction line.

The first annunciator that will alarm due to degrading condenser vacuum is ___(2)___.

A. (1) A
(2) G-F3, TURBINE LO VACUUM PRE-TRIP

B. (1) A
(2) A-G1, CNDSR LO VAC C-9 PERM NOT AVAIL

C. (1) B
(2) G-F3, TURBINE LO VACUUM PRE-TRIP

D. (1) B
(2) A-G1, CNDSR LO VAC C-9 PERM NOT AVAIL

65. The A Boron Evaporator is being operated in accordance with 0-OP-10.4.1, Operation of 1-BR-EV-1A, 1A Boron Evaporator.

Which of the choices below completes the following statement?

The boron evaporator feed pumps take suction from the ___(1)___ and pressure is automatically maintained in the evaporators by controlling ___(2)___ flow through the evaporator overhead condenser.

A. (1) Boron Recovery Tanks
(2) Component Cooling Water

B. (1) Boron Recovery Test Tanks
(2) Component Cooling Water

C. (1) Boron Recovery Tanks
(2) Chilled Water

D. (1) Boron Recovery Test Tanks
(2) Chilled Water

66. Which of the following completes both statements regarding plant announcements in accordance with OP-AA-100, Conduct of Operations, Attachment 2, Shift Operations?

Operations personnel are expected to make a plant announcement when starting or stopping equipment from the control room for loads that are at least ___(1)___ volts.

At a minimum, the plant announcement must include the planned activity and direction for plant personnel to stand clear of the ___(2)___.

A. (1) 260
(2) component being started/stopped ONLY

B. (1) 260
(2) component being started/stopped including its associated electrical switchgear

C. (1) 480
(2) component being started/stopped ONLY

D. (1) 480
(2) component being started/stopped including its associated electrical switchgear

67. Given the following conditions:

- Unit 2 is in Mode 6
- Core off-load is in progress with 75 fuel assemblies removed from the core
- Both Gamma Metric detectors are operable
- Source Range indications are as follows:
  - N-31 = 130 cps and stable
  - N-32 = 800 cps and stable

Which of the following completes both statements?

Based on 2-LOG-4A, CRO Surveillance Sheets (MODES 5, 6 and Defueled), Source Range NI Channel Check ___(1)___ met.

Core offload ___(2)___ allowed to continue.

A. (1) is
   (2) is not

B. (1) is
   (2) is

C. (1) is not
   (2) is not

D. (1) is not
   (2) is

68. Which of the choices below completes both statements in accordance with OP-AA-100,Conduct of Operations, Attachment 6, Status and Configuration Control?

After determining that a fault does not exist, the minimum required approval to reset a tripped circuit breaker is ___(1)___ .

The maximum number of times that the tripped circuit breaker can be reset without an evaluation is ___(2)___.

A. (1) Shift Manager
(2) 2

B. (1) Shift Manager
(2) 1

C. (1) Operator At The Controls (OATC)
(2) 2

D. (1) Operator At The Controls (OATC)
(2) 1

69. The following conditions exist on Unit 1:

• RWST Boron Concentration is 2580 ppm

Which of the following completes both statements in accordance with T.S. 3.5.4, Refueling Water Storage Tank?

T.S. 3.5.4 is applicable when RCS average temperature is greater than a minimum of ___(1)___ °F.

RWST boron concentration ___(2)___ within Tech Spec limits.

A. (1) 200
   (2) is not

B. (1) 200
   (2) is

C. (1) 350
   (2) is not

D. (1) 350
   (2) is

70. In accordance with 1-OP-22.2, Operation of Low Level Waste Drain Tanks, which of the choices below completes the following statements?

When the Low Level Liquid Waste Tanks (LLLWTs) are aligned for Continuous Discharge, the contents are required to be sampled ___(1)___.

While the LLLWTs are aligned for Continuous Discharge, the backboards operator ___(2)___ required to document 0-OP-22.11, Releasing Radioactive Liquid Waste.

A. (1) Weekly
(2) is not

B. (1) Daily
(2) is not

C. (1) Weekly
(2) is

D. (1) Daily
(2) is

71. Unit 1 is at 100%

A team is preparing to enter containment in accordance with VPAP-0106, Subatmospheric Containment Entry.

Which of the choices below completes the following statement in accordance with 1-OP-1B, Containment Checklist, and OP-AA-200, Equipment Clearance?

The Incore detectors are placed ___(1)___ and are tagged out using a ___(2)___ tag.

A. (1) in the fully withdrawn position
   (2) Caution

B. (1) in the fully withdrawn position
   (2) Danger

C. (1) at the bottom of the core
   (2) Caution

D. (1) at the bottom of the core
   (2) Danger

72. Which of the following completes both statements?

1-RMS-RM-154, Auxiliary Building Control Area radiation monitor, is located at the ___(1)___.

If the 1-RMS-RM-154 high radiation alarm limit is exceeded a local alarm ___(2)___ actuated.

A. (1) Unit 2 VCT cubicle
(2) is

B. (1) Unit 2 VCT cubicle
(2) is not

C. (1) Aux Shutdown Panel
(2) is

D. (1) Aux Shutdown Panel
(2) is not

73. Which of the choices below completes the following statements in accordance with OP-AP-104, Emergency and Abnormal Operating Procedures?

A step marked with an asterisk (*) is a(n) ___(1)___ action.

NOTEs and CAUTIONs that are encountered repeatedly ___(2)___ be paraphrased after their initial reading.

A. (1) Immediate Operator
(2) may

B. (1) Continuous
(2) may

C. (1) Immediate Operator
(2) may not

D. (1) Continuous
(2) may not

74. Which of the choices below completes the following statements in accordance with TR 7.3, Fire Brigade?

A Fire Brigade of at least ___(1)___ members shall be maintained onsite.

The Fire Brigade Scene Leader and at least ___(2)___ brigade members shall have sufficient knowledge of safety-related systems to understand the effects of the fire and fire suppressants on safe shutdown capability.

A. (1) 4
(2) 1

B. (1) 4
(2) 2

C. (1) 5
(2) 1

D. (1) 5
(2) 2

75. Given the following:

•The average wind direction displayed on PCS is 270°.

Which of the following completes both statements?

The wind is coming from the ___(1)___.

If PCS becomes unavailable, wind direction indication ___(2)___ available in the control room.

A. (1) West
   (2) is no longer

B. (1) West
   (2) is still

C. (1) East
   (2) is no longer

D. (1) East
   (2) is still

76. Unit 1 was initially operating at 100% power when a SGTR occurred on "B" S/G

The crew is implementing 1-E-3, Steam Generator Tube Rupture.

The following actions were taken:

- RCPs were secured
- Depressurization was commenced to minimize break flow and refill the pressurizer using 1-RC-PCV-1456, PZR PORV (1-E-3, Step 17).

When the RCS depressurization was required to be stopped, 1-RC-PCV-1456 would not close; 1-RC-MOV-1535, PZR PORV Block Valve, breaker has tripped and cannot be reset.

Current conditions:
- RWST Level = 93%
- 'B' S/G Level = 86% NR
- 'B' S/G Press = 1035 psig
- PZR level = 29% and increasing
- RCS Press = 1034 psig and decreasing
- Subcooling = 45°F and degrading

Which of the following identifies the next required procedure transition?

A. 1-ECA-3.1, SGTR with Loss of Reactor Coolant Subcooled Recovery Desired

B. 1-ECA-3.2, SGTR with Loss of Reactor Coolant Saturated Recovery Desired

C. 1-E-1, Loss of Reactor or Secondary Coolant

D. 1-ES-3.1, Post-SGTR Cooldown Using backfill

77. Given the following conditions:

Unit 1 was at 100% power when a Loss of all Main Feed Water occurred.

The crew has just transitioned to 1-ES-0.1, Reactor Trip Response.

Based on the indications of the attached PCS trend which of the following is required?

Reference provided

A. Transition to 1-FR-H.1, Response to Loss of Secondary Heat Sink

B. Remain in 1-ES-0.1 and perform 1-AP-22.4, Loss of Both Motor-Driven AFW Pumps

C. Transition to 1-FR-H.5, Response to Steam Generator Low Level

D. Return to 1-ES-0.0, Re-Diagnosis

78. Unit 1 was operating at 75% power when a loss of offsite power occurred. The following plant conditions exist.

The crew is performing the actions of 1-ECA-0.0, Loss of All AC Power.

- The operators completed Step 10, placing various equipment control switches in the Pull-To-Lock position.
- E Transfer bus is being supplied by the SBO diesel.
- 1J 4160 bus has been restored.
- The Shift Technical Advisor reports a red path still exists on heat sink.

Which of the following completes the statement?

Based on the above information, the crew should _____.

A. Remain in ECA-0.0, go to step 31.

B. Remain in ECA-0.0, continue to the next Step 11.

C. Exit ECA-0.0, transition to 1-FR-H.1, Response to Loss of Secondary Heat Sink.

D. Exit ECA-0.0, transition to ECA-0.1, Loss of All AC Power Recovery Without SI Required.

79. Current Conditions:

- Both units are at 100%.
- 1-HV-F-49A, Service Water Pump house exhaust fan is tagged out.
- 2-SW-P-1B has just been declared inoperable.
- SW Throttling has not been performed.
- 2H EDG Battery float voltage is 122 VDC.

Which of the following completes both statements IAW Tech Specs?

2H EDG battery Float voltage ___(1)___ Tech Spec Surveillance requirements.

Given these conditions, the earliest time that Throttling SW flow to CCHXs is required to be completed is within ___(2)___ hour(s).

REFERENCE PROVIDED

A. (1) meets
(2)1

B. (1) meets
(2) 72

C. (1) does not meet
(2) 4

D. (1) does not meet
(2) 5

80. Unit-1 and Unit-2 are both operating at 100% power. Shortly after midnight, both units are experiencing mega-watt swings along with 500kv bus, voltage and frequency fluctuations.

- Annunciator T-D3, Frequency 59.8 Hertz, alarms then clears
- Annunciator T-E4, Frequency 58 Hertz, alarms then clears
- Annunciator K-C7, Volts/Hertz Relay Actuation, alarms then clears
- MWs were swinging between 1005 and 1055

500 KV bus voltage was recorded as follows:
0000 = 525 Kv
0100 = 550 Kv
0200 = 504 Kv
0300 = 499 Kv
0400 = 555 Kv

Which of the following completes the statement in accordance 0-AP-8, Response to Grid Instability, and T.S. 3.8.1, AC Sources Operating?

_____(1)_____ and the earliest time that the offsite power was required to be declared inoperable is ____(2)_____.

A. (1) Place voltage regulators in MANUAL
(2) 0300

B. (1) Maintain voltage regulators in AUTO
(2) 0200

C. (1) Maintain voltage regulators in AUTO
(2) 0300

D. (1) Place voltage regulators in MANUAL
(2) 0200

81. Unit -1 experiences a Reactor Trip from 100%.

Current Conditions:
- Containment press = 34 psia and decreasing.
- RCS Pressure = 1410 psig and decreasing.
- AFW pumps are not running.
- RWST = 22% and decreasing.
- S/G Parameters:
  - A = WR Level = 40% Pressure = 930 psig
  - B = WR Level = 9% Pressure = 970 psig
  - C = WR Level = 22% Pressure = 950 psig
- The crew is implementing 1-E-1, Loss of Reactor or Secondary Coolant.

Which of the following is the required procedure implementation?

A. Transition to 1-ES-1.3, Transfer to Cold Leg Recirculation, and complete in its entirety without delay.

B. Immediately initiate 1-FR-H.1, Response to Loss of Secondary Heat Sink, Bleed and Feed, steps 15 through 24.

C. Perform 1-FR-H.1, Response to Loss of Secondary Heat Sink, Bleed and Feed concurrently with 1-ES-1.3, Transfer to Cold Leg Recirculation.

D. Transition to 1-ES-1.3, Transfer to Cold Leg Recirculation, and complete the first 9 steps without delay.

82. Initial Conditions:
- Unit 1 is at 70%
- Tavg and Tref are matched.
- Control Rods are in Auto with D bank at 215 steps.

Subsequently:
- 1-RC-TI-1408A, Median/High Tave, fails low
- Reactor power changes by 3% due to rod movement
- Operator places rods in manual to stop rod motion
- No fuel failure occurred

Which of the following completes both statements?

Before any operator action the control rods moved ___(1)___.

This event is a Reactivity Management issue, Significance Level ___(2)___.

REFERENCE PROVIDED

A. (1) out
(2) 4

B. (1) in
(2) 3

C. (1) out
(2) 3

D. (1) in
(2) 4

83. Both Units are at 100% power. Chemistry is in the process of sampling "A" WGDT (1-GW-TK-1A) when the following occurs:

2204 Unit 2 receives annunciator 2B-B5, PROCESS VENT VNT STACK A&B HI HI RADIATION.
2205 1-VG-RI-180-2, Vent Stack B, is reading 4E+5 uCi/sec
2208 The Auxiliary Building operator reports the diaphragm on 1-GW-TK-1A sample isolation valve is cracked and cannot be isolated.
2209 HP is notified to survey at 1-GW-TK-1A
2210 Mechanics notified to determine time required to repair/terminate leak.
2215 1-VG-RI-180-2, Vent Stack B, peaks at 4.06E+6 uCi/sec
2217 1-VG-RI-180-2, Vent Stack B, is reading 3E+6 uCi/sec and is decreasing
2221 1-VG-RI-180-2, Vent Stack B, reading is steady at 2E+5 uCi/sec
2223 HP confirms the release rate from 1-GW-TK-1A is three times ODCM limit
2245 Mechanics report it will take them 30 minutes to isolate the leak.

Which of the choices below completes the following statement?

The highest required emergency classification is ___(1)___ and the NRC is required to be notified within ___(2)___.

REFERENCE PROVIDED

A. (1) NOUE
(2) 15 minutes

B. (1) NOUE
(2) 1 hour

C. (1) ALERT
(2) 15 minutes

D. (1) ALERT
(2) 1 hour

84. Unit-2 is defueled and fuel assembly insert shuffle is in progress.
- 1-RM-RMS-152, New Fuel Area, is indicating 2.0E -4
- 1-RM-RMS-153, SFP Bridge Crane, is indicating 3.0E -4

- A spent fuel assembly has been damaged.

- Annunciator 1K-D2, RAD MONITOR SYSTEM HI RAD LEVEL, actuates.
- Spent Fuel Pool water level is -2.0 inches.

1-RM-RMS-152 has the following indications;
- 1000 8.0E-3 R/HR High Alarm
- 1030 1.5E-2 R/HR High Alarm
- 1100 5.0E-1 R/HR Hi Hi Alarm
- 1130 5.7E-1 R/HR Hi Hi Alarm

1-RM-RMS-153 has the following indications;
- 1000 3.5E-2 R/HR High Alarm
- 1030 9.1E-2 R/HR Hi Hi Alarm
- 1100 4.4E-1 R/HR Hi Hi Alarm
- 1130 1.0E 0 R/HR Hi Hi Alarm

Which of the following completes both statements?

Based on conditions above, the earliest time that an EAL classification was exceeded is ____(1)____.

In accordance with the Caution statement in 0-AP-27, Malfunction of Spent Fuel Pit System,the earliest time that the Fuel Building should be evacuated is ____(2)____.

REFERENCE PROVIDED

A. (1) 1030
(2) 1130

B. (1) 1100
(2) 1100

C. (1) 1030
(2) 1100

D. (1) 1100
(2) 1130

85. Unit-1 experienced a reactor trip and safety injection from 100% power. The following conditions exist:

- •The operating crew just entered 1-ECA-1.1, Loss of Emergency Coolant Recirculation.
- •No Containment sump blockage exists
- •Containment pressure is 61 psia
- •Two recirculation spray pumps are available (Not Running)
- •Recirculation spray sump level is 3 feet 0 inches
- •Two quench spray pumps are running

Which of the following identifies the required procedure implementation?

A. Remain in 1-ECA-1.1; do not transition to any FRs.

B. Immediately transition to FR-Z.1; do not start recirc spray pumps.

C. Remain in 1-ECA-1.1 until step 9 is completed, and then transition to FR-Z.1

D. Immediately transition to FR-Z.1; start recirc spray pumps.

86. Unit-1 is performing a unit startup in accordance with 1-OP-2.1, Unit startup from Mode 2 to Mode 1.

The following conditions exist:
- Reactor power is stable at 7%.
- 1-RC-LT-1461, Pressurizer level Ch III, has failed High.

Which of the following completes both the statement?

Based on these conditions, T.S. 3.3.1 Reactor Trip System (RTS) Instrumentation, Required Action L (Place channel in trip) ___(1)___ required to be completed within 72 hours.

In accordance with TS. 3.0.4, if the channel is placed in trip, reactor power ___(2)___ be raised to 100%.

A. (1) is not
   (2) can not

B. (1) is
   (2) can

C. (1) is not
   (2) can

D. (1) is
   (2) can not

87. Unit-1 is operating at 100% power.

- I&C is in the MCR performing a corrective maintenance Work Order.
- The following annunciators are lit:
  - 1P-G5, PCC CAB I VIOLATED DOOR OPEN
  - 1N-D5, CNTMT PRESS HI-HI TEST BYP CHNL I
  - 1K-H4, CONTAINMENT DEPRESSURIZTN ACT BISTABLE BYPASSED

A Loss of vital bus 1-III occurs.

Which of the following completes both statements?

If subsequently required, an automatic CDA ___(1)___ occur.

LCO 3.0.3 entry ___(2)___ required.

REFERENCE PROVIDED

A. (1) can not
   (2) is

B. (1) can
   (2) is not

C. (1) can not
   (2) is not

D. (1) can
   (2) is

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

- N-16 RAD DET (K-G6) Alarmed
  1-MS-RI-191, 'B' Main Steam Line: Alarm
  1-MS-RI-193, Main Steam Header: Alarm
- 1-RM-SV-121, Condenser Air Ejector Rad Monitor: Not in Alarm, and indication has not changed
- PRZR level decreasing
- 1-FW-FCV-1488 'B' MFRV Controller Demand: Slightly lower than the other MFRV demands
- Crew tripped the Reactor and initiated Safety Injection (SI)
- SRO completed reading the Immediate Operator Actions of 1-E-0, Reactor Trip or SI, to the crew.

Current Status

- All SG levels are below narrow range indication
- Chemistry and Health Physics confirmation of the affected SGTR has NOT yet been obtained.
- The BOP recommends isolating AFW flow to the 'B' SG.

Which of the following identifies the required actions?

A. Isolate AFW to 'B' SG; Do NOT initiate E-0, attachment 8, Ruptured SG isolation yet.

B. Isolate AFW to 'B' SG; Immediately initiate E-0, attachment 8

C. Do NOT isolate AFW to 'B' SG; Do NOT initiate E-0 attachment 8 yet.

D. Do NOT isolate AFW to 'B' SG; Immediately initiate E-0, attachment 8

89. Unit-2 has been at 100% power for 90 days following a 26 day refueling outage. Unit-1 is currently in Day 2 of a scheduled refueling outage, with the following conditions:

•Mode 5, 1-RH-P-1A in service
•RCS Temp = 118°F
•RCS Press = 15 psig on VCT float
•PZR level is at 28%
•RCS loop stop valves are all open

At 0130, the control room receives a report that 2-SW-P-1A motor is on fire and the following conditions exist:

•All SW pumps have been secured.
•Annunciator SFP Hi/Hi-Hi Temp has illuminated.
•Spent fuel pool level is +1 inches.
•At 0155, the Fire Brigade Scene Leader reports that the fire has been extinguished at the SWPH.

Which of the following completes both statements?

Per Attachment 7 of 0-AP-27, Malfunction of the Spent Fuel Pit System, the expected heat up rate for the spent fuel pit under these conditions is ____(1)_____ DEGF per hour.

The highest required EAL classification is ____(2)____.

REFERENCE PROVIDED

A. (1) 3.99
   (2) NOUE

B. (1) 3.20
   (2) Alert

C. (1) 3.20
   (2) NOUE

D. (1) 3.99
   (2) Alert

90. Unit-1 is at 100%, when annunciator 1J-G1, Containment Partial Pressure +0.25 PSI CH I-II, locks in with the following conditions:

- RWST = 48°F
- Service Water Temp = 83°F
- 1-LM-PI-101A-2 (Setpoint) is set at 10.85 psia on Ch I and II
- Containment Temperature = 96.0°F

Which of the following completes both statements in accordance with Tech Spec 3.6.4, Containment Pressure?

Based on these conditions, containment air partial pressure is _____ for operations.

The LCO limits ensure the contaiment will depressurize to to less than 2.0 psig in _____ following a DBA.

REFERENCE PROVIDED

A. Acceptable; 1 hour.

B. Unacceptable; 6 hours.

C. Unacceptable; 1 hour.

D. Acceptable; 6 hours.

91. Unit-1 is in MODE 2.

Current Conditions:

- Reactor startup is in progress using 1-OP-1.5, Unit Startup From Mode 3 to Mode 2.
- Source Range, N-31 is indicating approximately 1.0 E 4 cps.
- Source Range, N-32 is indicating approximately 1.5 E 4 cps.
- N-32 audio countrate is not functioning and the Channel selector switch on the audio count rate channel drawer has been selected to N31
- Both Intermediate Range channels are coming on scale and indicate just greater than

  5 E -11 amps.

Source Range Channel N-31 fails low.

Which of the following completes the statements?

1-AP-4.1, Malfunction of nuclear instrumentation (source range), required response will be to ___(1)___.

The T.S. basis for required action H (one source range neutron flux channel inoperable) in T.S. 3.3.1, Reactor Trip System Instrumentation, is ___(2)___.

A. (1) Go to 1-E-0, Reactor Trip or Safety Injection
   (2) Loss of visual indication and audible alarm in the control room

B. (1) Suspend the Reactor Startup
   (2) Loss of visual indication and audible alarm in the control room

C. (1) Suspend the Reactor Startup
   (2) that core protection is severely reduced

D. (1) Go to 1-E-0, Reactor Trip or Safety Injection
   (2) that core protection is severely reduced

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

- Crew is in 1-E-1, Loss of Reactor or Secondary Coolant.
- The crew is at Step 19 to check containment Hydrogen Concentration.
- Containment Pressure is 22 psia
- Containment Hydrogen Concentration is 3.5%
- The Technical Support Center is fully manned and activated.

Which of the following completes the statement?

There is a minimum delay time of _____(1)_____ minutes before the containment hydrogen analyzer will provide an accurate reading.

The Hydrogen recombiner will _____(2)_____ .

A. (1) 15
(2) be placed in service, using 1-OP-63.1, Post Accident Thermal H2 Recombiner

B. (1) 15
(2) not be placed in service, Consult TSC for additional recovery actions

C. (1) 5
(2) be placed in service, using 1-OP-63.1, Post Accident Thermal H2 Recombiner

D. (1) 5
(2) not be placed in service, Consult TSC for additional recovery actions

93. The Waste Gas Decay Tanks (WGDT) were sampled to determine the quantity of radioactive material contained in each gas storage tank.

Which of the following completes both statements in accordance with TR 3.10.3, Gas Storage Tanks?

The quantity of radioactive material contained in each gas storage tank shall be Less than or equal to ___(1)____ curies of noble gases.

With this limit, in the event of an uncontrolled release of the tank's contents, the resulting total body exposure to an individual at the nearest exclusion boundary will not exceed ____(2)____ rem.

A. (1) 10,000
   (2) 1.0

B. (1) 25,000
   (2) 0.5

C. (1) 10,000
   (2) 0.5

D. (1) 25,000
   (2) 1.0

94. Unit-1 has been shutdown from 100% power for a scheduled refueling outage.

Which of the following completes both statements?

In accordance with OP-AA-100, attachment 6, Status and Configuration Control, the _____(1)_____ is responsible for verifying initial conditions prior to the start of core alterations, monitoring conditions during core alterations, and stopping when conditions warrant.

In accordance with 1-OP-4.1, Controlling Procedure For Refueling, the FIRST reactor disassembly activity that is a core alteration is _____(2)_____.

A. (1) Fuel Handling Supervisor
(2) Rx Vessel Head Removal

B. (1) Refueling SRO
(2) Rx Vessel Head Removal

C. (1) Fuel Handling Supervisor
(2) Control Rod Drive Shaft Unlatching and unlatching verification

D. (1) Refueling SRO
(2) Control Rod Drive Shaft Unlatching and unlatching verification

95. Both Units are operating at 100% power.

- The crew has entered action of T.S. 3.7.10, Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS), due to inoperable MCR/ESGR pressure boundary.

- 1-LOG-17, Unit 1 & 2 Control Room Boundary Breaching Log has been initiated. The control room boundary can NOT be maintained operable by use of administrative control.

Which of the following will complete the statements?

Based on the given conditions 1-LOG-17 will require starting one of the Emergency Switchgear Emergency Filtered air supply fans in ____(1)_____ Mode

In accordance with T.S. 3.7.10 bases, supply fan ____(2)____ can be used.

A. (1) Pressurization
   (2) 1-HV-F-41

B. (1) Pressurization
   (2) 2-HV-F-41

C. (1) Recirculation
   (2) 2-HV-F-41

D. (1) Recirculation
   (2) 1-HV-F-41

96. Which of the following completes both statements?

In accordance with VPAP-2003, Post Maintenance Testing Program, the ____(1)____ Department is responsible for approving the deferral of Post-maintenance testing.

If a Post Maintenance Test is required to be waived, at a minimum, the basis shall be provided by _____(2)_____.

A. (1) Maintenance
   (2) Operations

B. (1) Operations
   (2) Operations

C. (1) Operations
   (2) Engineering

D. (1) Maintenance
   (2) Engineering

97. Which of the following completes both statements in accordance with Tech Spec 3.4.16 RCS Specific Activity?

In accordance with SR 3.4.16.2, reactor coolant DOSE EQUIVALENT IODINE-131 specific activity must be verified less than or equal to ___(1)____ following thermal power change of ≥15% in an hour.

The LCO 3.4.16 limits are established to minimize the dose consequences in the event of a ___(2)_____ .

A. (1) 0.1 μCi/gm
(2) LOCA

B. (1) 1.0 μCi/gm
(2) SGTR

C. (1) 1.0 μCi/gm
(2) LOCA

D. (1) 0.1 μCi/gm
(2) SGTR

98. Due to elevated turbine vibrations, the night shift crew is ramping Unit-1 to Mode 2 for a Turbine Balance Shot.

At 2030 and 79% power, annunciator 1K-G6, N-16 RAD DET, alarms.

1-MS-RI-191, B S/G N-16, and 1-MS-RI-193, MS Header, are in Alert at 5 GPD, the crew enters 1-AP-5, Unit 1 Radiation Monitoring Systems.

During the ramp the following occurs:

1-MS-RI-191 and 1-MS-RI-193 indications:
- 2130 and 61% power = 9 GPD
- 2230 and 29% power = 14 GPD
- 2330 and 24% power = 20 GPD

1-SV-RM-121, Condenser Air Ejector RM, indicated a consistent but slowly increasing count rate.

Which of the following completes the statement in accordance with TRM 3.4.5, Primary to Secondary Leakage Detection System?

Condition A is required to be entered at ___(1)___ time, and the required completion time for obtaining/analyzing grab samples is ___(2)___ hours.

REFERENCE PROVIDED

A. (1) 2230
   (2) 12

B. (1) 2230
   (2) 4

C. (1) 2330
   (2) 12

D. (1) 2330
   (2) 4

99. Unit-1 is at 100% power when a fire occurs in the Unit-1 Emergency Switchgear Room. The Control Room crew enters 1-FCA-2, Emergency Switchgear Room Fire.

- The operating crew is ready to establish RCS cooldown.
- H emergency bus is operable.
- J emergency bus is de-energized.
- Two CRDM fans are available and running.
- Charging is aligned through the BIT.
- An operator has been dispatched to perform Attachment 15, Fuel Building and Mitigating Spurious Valve Operations.

Which of the following completes the statement below?

The operator assigned to perform Attachment 15, shall have a minimum qualification as a ____(1)____.

The required cooldown rate limit is ____(2)____.

A. (1) Licensed Operator
   (2) < 15°F/HR

B. (1) Non-Licensed Operator who has completed the Nuclear Control Room Operator Development Program
   (2) < 15°F/HR

C. (1) Licensed Operator
   (2) < 25°F/HR

D. (1) Non-Licensed Operator who has completed the Nuclear Control Room Operator Development Program
   (2) < 25°F/HR

100. Unit-1 is at 100% power

At 1445, the following RWST level channels were declared inoperable and T.S. 3.0.3 was entered.
- 1-QS-LT-100C (RWST Level Ch I)
- 1-QS-LT-100D (RWST Level Ch II)

At 1515, while the plant was still at 100% power, RWST Level Ch I was declared operable and the crew exited T.S. 3.0.3

Which of the following completes both statements?

At 1445, in accordance with T.S. 3.0.3, the unit was required to be placed in Mode 3 by ___(1)___.

In accordance with VPAP-2802, Notifications and Reports, the earliest NRC report required is a(n) ____(2)____ report.

REFERENCE PROVIDED

A. (1) 2145
   (2) 4 hour

B. (1) 2245
   (2) 4 hour

C. (1) 2145
   (2) 8 hour

D. (1) 2245
   (2) 8 hour

Answer Sheet
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Name:_____
Date:_____

[A] [B] [C] [D] 1. ____
[A] [B] [C] [D] 2. ____
[A] [B] [C] [D] 3. ____
[A] [B] [C] [D] 4. ____
[A] [B] [C] [D] 5. ____
[A] [B] [C] [D] 6. ____
[A] [B] [C] [D] 7. ____
[A] [B] [C] [D] 8. ____
[A] [B] [C] [D] 9. ____
[A] [B] [C] [D] 10. ____
[A] [B] [C] [D] 11. ____
[A] [B] [C] [D] 12. ____
[A] [B] [C] [D] 13. ____
[A] [B] [C] [D] 14. ____
[A] [B] [C] [D] 15. ____
[A] [B] [C] [D] 16. ____
[A] [B] [C] [D] 17. ____
[A] [B] [C] [D] 18. ____
[A] [B] [C] [D] 19. ____
[A] [B] [C] [D] 20. ____
[A] [B] [C] [D] 21. ____
[A] [B] [C] [D] 22. ____
[A] [B] [C] [D] 23. ____
[A] [B] [C] [D] 24. ____
[A] [B] [C] [D] 25. ____

____ 26. [A] [B] [C] [D]
____ 27. [A] [B] [C] [D]
____ 28. [A] [B] [C] [D]
____ 29. [A] [B] [C] [D]
____ 30. [A] [B] [C] [D]
____ 31. [A] [B] [C] [D]
____ 32. [A] [B] [C] [D]
____ 33. [A] [B] [C] [D]
____ 34. [A] [B] [C] [D]
____ 35. [A] [B] [C] [D]
____ 36. [A] [B] [C] [D]
____ 37. [A] [B] [C] [D]
____ 38. [A] [B] [C] [D]
____ 39. [A] [B] [C] [D]
____ 40. [A] [B] [C] [D]
____ 41. [A] [B] [C] [D]
____ 42. [A] [B] [C] [D]
____ 43. [A] [B] [C] [D]
____ 44. [A] [B] [C] [D]
____ 45. [A] [B] [C] [D]
____ 46. [A] [B] [C] [D]
____ 47. [A] [B] [C] [D]
____ 48. [A] [B] [C] [D]
____ 49. [A] [B] [C] [D]
____ 50. [A] [B] [C] [D]

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Name:_____
Date:_____

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

_____ 76. [A] [B] [C] [D]
_____ 77. [A] [B] [C] [D]
_____ 78. [A] [B] [C] [D]
_____ 79. [A] [B] [C] [D]
_____ 80. [A] [B] [C] [D]
_____ 81. [A] [B] [C] [D]
_____ 82. [A] [B] [C] [D]
_____ 83. [A] [B] [C] [D]
_____ 84. [A] [B] [C] [D]
_____ 85. [A] [B] [C] [D]
_____ 86. [A] [B] [C] [D]
_____ 87. [A] [B] [C] [D]
_____ 88. [A] [B] [C] [D]
_____ 89. [A] [B] [C] [D]
_____ 90. [A] [B] [C] [D]
_____ 91. [A] [B] [C] [D]
_____ 92. [A] [B] [C] [D]
_____ 93. [A] [B] [C] [D]
_____ 94. [A] [B] [C] [D]
_____ 95. [A] [B] [C] [D]
_____ 96. [A] [B] [C] [D]
_____ 97. [A] [B] [C] [D]
_____ 98. [A] [B] [C] [D]
_____ 99. [A] [B] [C] [D]
_____ 100. [A] [B] [C] [D]