U. S. Nuclear Regulatory Commission

Site-Specific RO 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 80.00 percent. Examination papers will be collected 6 hours after the examination begins

Applicant Certification

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

_____
Applicant's Signature

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

RO REFERENCE MATERIAL

1-ECA-1.1, Attachment 3, Minimum SI Flow Rate Versus Time After Trip

0-AP-10, Attachment 21, Unit 1 EDG Load Configuration To Prevent Overloading, page 1

NORTH ANNA 2016-301 RO ANSWER KEY

	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

Answer Sheet
2016 NRC RO Exam

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]

Answer Sheet
2016 NRC RO Exam

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. _____
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[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. _____