

<b>U.S. Nuclear Regulatory Commission Site-Specific RO Written Examination</b>	
<b>Applicant Information</b>	
Name: _____	
Date: _____	Facility/Unit _____
Region:     I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/>	Reactor Type: W <input type="checkbox"/> CE <input type="checkbox"/> BW <input type="checkbox"/> GE <input type="checkbox"/>
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. 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

As-administered version of the  
2017-301 Turkey Point RO  
Written Examination with  
change incorporated:

1) Question 34 - Answer Key  
change

**NRC L-17 -1 EXAM SECURE INFORMATION**

Question # 1

Given the following conditions:

- Unit 3 experiences a spurious reactor trip from 100% power.
- 3A Steam Generator Steam Dump to Atmosphere (SDTA) fails open.

Subsequently:

- 3A SG SDTA is locally isolated.
- RCS pressure lowers to 1900 psig.

Which one of the following completes the statement below?

To ensure adequate SHUTDOWN MARGIN the RO will initiate a boration of a MINIMUM of (1) if RCS Tave lowers as a MINIMUM below (2).

- A. (1) 20 gpm  
(2) 537°F
- B. (1) 20 gpm  
(2) 547°F
- C. (1) 45 gpm  
(2) 537°F
- D. (1) 45 gpm  
(2) 547°F

Question # 2

Given the following conditions:

- Unit 3 experiences a LOCA.
- 3-EOP-E-1, Loss of Reactor or Secondary Coolant, is in progress.
- The RO is preparing to establish charging flow.
- VCT level is 12% and stable.

Which one of the following completes the statements below?

The SI signal logic\_\_\_\_(1)\_\_\_\_required to be reset prior to starting a charging pump.

When started, charging pumps will take suction from the\_\_\_\_(2)\_\_\_\_.

- A. (1) is  
(2) VCT
- B. (1) is  
(2) RWST
- C. (1) is NOT  
(2) VCT
- D. (1) is NOT  
(2) RWST

Question # 3

Given the following conditions:

- Unit 3 experiences a LOCA while at 100% power.
- FI-3-943, SI Cold Leg Flow, indicates 700 gpm .
- Containment pressure is 25 psig and rising.
- 3-EOP-E-0, Reactor Trip or Safety Injection, is in progress.

Which one of the following completes the statement below?

The RO will trip all 3 RCPs\_\_\_\_\_.

- A. due to the loss of cooling to the motor bearing oil coolers and seals.
- B. to preserve them for core cooling later in the event.
- C. to prevent severe core uncover if the RCPs trip later in the event.
- D. to extend the effectiveness of the SGs water inventory.

Question # 4

Given the following conditions:

- Unit 3 is responding to a LOCA.
- Containment pressure is 35 psig and rising.
- 3A and 3B 4kV busses are energized from the Unit 3 Startup Transformer.
- SI and RHR pumps are NOT available.

Subsequently:

- 3-EOP-FR-C.1, Response to Inadequate Core Cooling, is in progress.
- All SG pressures are 135 psig.
- All SG NR levels are 30% and lowering.
- RCS Hot Leg temperatures are 650°F.
- Accumulators are NOT isolated.
- CETs temperatures are 1210°F and rising.
- RCP support conditions are NOT currently met.

Which one of the following is the NEXT action required IAW 3-EOP-FR-C.1?

- A. Establish RCP support conditions and then restart RCPs one at a time
- B. Restart RCPs one at a time, regardless of support conditions
- C. Open all PORVs
- D. Install fuses for RCS vents

Question # 5

Given the following conditions:

- Unit 3 is in MODE 3.
- Unit 4 is in MODE 1.
- I&C technicians are working on 3B 4kV bus UV relays.

Subsequently:

- 3B 4kV bus de-energizes and locks out.

Which one of the following completes the statements below?

Unit 3 (1)\_\_\_meet the LCO for TS 3.5.2 ECCS Subsystems - Tavg Greater Than Or Equal To 350°F.

Unit 4 (2)\_\_\_meet the LCO for TS 3.5.2 ECCS Subsystems - Tavg Greater Than Or Equal To 350°F.

- A. (1) does  
(2) does
- B. (1) does  
(2) does NOT
- C. (1) does NOT  
(2) does
- D. (1) does NOT  
(2) does NOT

Question # 6

Given the following conditions:

- Unit 3 is at 100% power.

Subsequently the following events take place:

- 3B CCW Heat Exchanger develops a tube leak and is removed from service.
- 3C CCW Pump fails to manually start when demanded by the RO.

Which one of the following identifies the technical specification (TS) implications?

A TS action statement entry (1) required for the 3B CCW Heat Exchanger.

A TS action statement entry (2) required for the 3C CCW Pump.

- A. (1) is  
(2) is
- B. (1) is  
(2) is NOT
- C. (1) is NOT  
(2) is
- D. (1) is NOT  
(2) is NOT

Question # 7

Given the following conditions:

- Unit 3 is at 100% power.
- PT-3-444, Pressurizer Pressure Control Channel, fails to 1500 psig.
- 3-ONOP-041.5, Pressurizer Pressure Control Malfunction, is entered.

Which one of the following completes the statements below?

PC-3-444J, Pressurizer Pressure Controller, demand shifts to     (1)    .

PZR pressure INITIALLY     (2)    .

- A. (1) 0%  
(2) lowers
- B. (1) 0%  
(2) rises
- C. (1) 100%  
(2) lowers
- D. (1) 100%  
(2) rises



Question # 8

Given the following conditions:

- Unit 3 is at 60% power.

Subsequently:

- Unit 3 experiences a transient that requires the crew to manually trip the reactor.
- The reactor does NOT trip.
- 3-EOP-FR-S.1, Response to Nuclear Power Generation/ATWS, is in progress.
- All SG NR levels are off-scale low.

Which one of the following completes the statements below?

The AMSAC system (1) generate a turbine trip signal.

IAW 3-EOP-FR-S.1, the turbine trip will be confirmed by observation of (2) on TCS.

- A. (1) will NOT  
(2) turbine valve positions
- B. (1) will NOT  
(2) turbine trip header pressures
- C. (1) will  
(2) turbine valve positions
- D. (1) will  
(2) turbine trip header pressures

Question # 9

Given the following conditions:

- 3C SG experienced a tube rupture.
- 3-EOP-E-3, Steam Generator Tube Rupture, is in progress.
- 3C SG was isolated IAW 3-EOP-E-3.

Which one of the following completes the statements below?

The crew will FIRST (1) the RCS.

The 3C SG level rate of change will (2) during the RCS depressurization phase.

- A. (1) depressurize  
(2) lower
- B. (1) depressurize  
(2) remain the same
- C. (1) cooldown  
(2) lower
- D. (1) cooldown  
(2) remain the same

Question # 10

Given the following conditions:

- Unit 3 experiences a loss of all AC power.
- 3-EOP-ECA-0.0, Loss of all AC Power, is in progress.

Which one of the following completes the statements below?

The purpose of closing 3-297 A/B/C, RCP Seal Manual Isolation Valves, is to prevent (1).

3-EOP-ECA-0.0 (2) require SG pressures to be maintained above 140 psig.

- A. (1) thermal shocking the RCPs  
(2) does NOT
- B. (1) thermal shocking the RCPs  
(2) does
- C. (1) steam introduction into the RCP Seal Return  
(2) does NOT
- D. (1) steam introduction into the RCP Seal Return  
(2) does

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## Question # 11

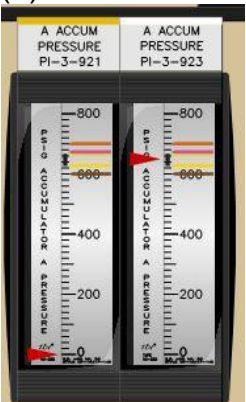
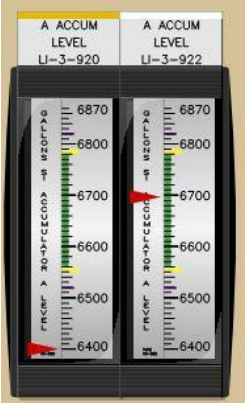
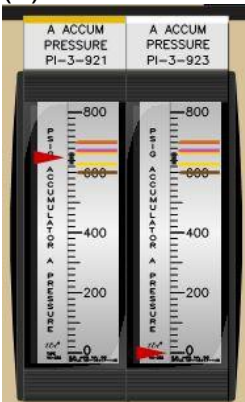
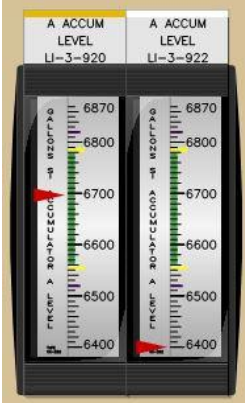
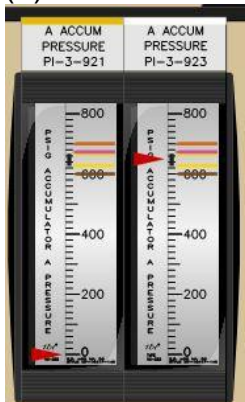
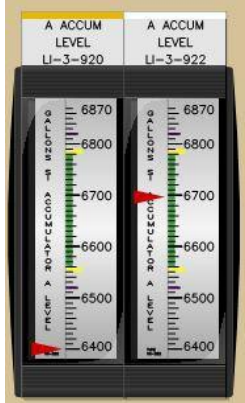
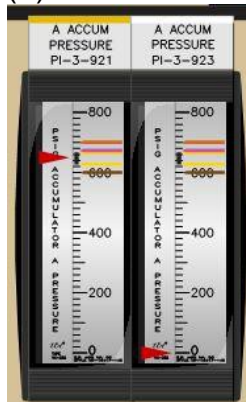
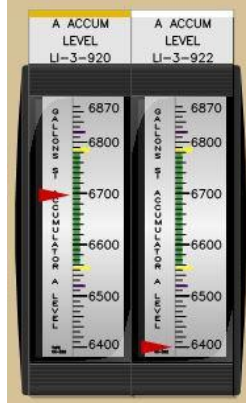
Given the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- Vital Instrument Panel 3P09 is lost.

Which one of the following identifies (1) whether an AUTOMATIC reactor trip will IMMEDIATELY occur, and (2) the status of 3A SI accumulator indication?

A.	B.	C.	D.
(1) trip occurs	(1) trip occurs	(1) NO trip occurs	(1) NO trip occurs
(2)	(2)	(2)	(2)
 	 	 	 

Question # 12

Given the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- 3D23 Vital DC Bus de-energizes.

Which one of the following completes the statements below?

3C Normal Inverter (1) transfer to the CVT.

IAW 3-ONOP-003.5, Loss Of DC Buses 3D23 and 3D23A, the (2) 3C inverter will be opened to support the DC bus restoration.

- A. (1) will AUTOMATICALLY  
(2) DC feeder breaker to
- B. (1) will AUTOMATICALLY  
(2) AC output breaker from
- C. (1) requires a MANUAL  
(2) DC feeder breaker to
- D. (1) requires a MANUAL  
(2) AC output breaker from

Question # 13

Given the following conditions:

- Unit 3 is at 100% power.
- 3A and 3C ICW pumps are running.

Subsequently:

- Unit 3 experiences a LOCA and a LOOP concurrently.
- 3A EDG locks out.

Which one of the following completes the statements below?

3B ICW Pump (1) start.

3C ICW Pump (2) start.

- A. (1) requires a manual  
(2) requires a manual
- B. (1) requires a manual  
(2) will automatically
- C. (1) will automatically  
(2) requires a manual
- D. (1) will automatically  
(2) will automatically

Question # 14

Given the following conditions:

- Both units are at 100% power.
- An instrument air line breaks in the Unit 3 Turbine Area.
- 3-ONOP-013 and 4-ONOP-013, Loss of Instrument Air, are in progress.
- PI-3-1444, Instrument Air Pressure, reads 73 psig.
- PI-4-1444, Instrument Air Pressure, reads 77 psig.
- PI-3-1516, Instrument Air Header to Turbine Area, reads 68 psig.

Which one of the following completes the statement below?

Unit 3 Instrument Air (IA) System (1) isolated from Unit 4's.

The Instrument Air Header to the Unit 3 Turbine area (2) isolated.

- A. (1) will be AUTOMATICALLY  
(2) will be AUTOMATICALLY
- B. (1) will be AUTOMATICALLY  
(2) is required to be MANUALLY
- C. (1) is required to be MANUALLY  
(2) will be AUTOMATICALLY
- D. (1) is required to be MANUALLY  
(2) is required to be MANUALLY

Question # 15

Given the following conditions:

- Unit 3 is at 30% power and stable.

Subsequently:

- A grid disturbance occurs.
- Main Generator output voltage is 20,000 V and lowering.
- Grid frequency is 60 HZ and stable.

Which one of the following completes the statements below?

Reactor power will     (1)    .

If voltage continues lowering, an under voltage condition on the 3A and 3B4kV busses     (2)     generate reactor trip signal.

- A. (1) remain the same  
(2) will
- B. (1) remain the same  
(2) will NOT
- C. (1) rise  
(2) will
- D. (1) rise  
(2) will NOT



Question # 16

Given the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- Unit 3 experiences a LOCA into the Auxiliary Building.
- 3-EOP-ECA-1.2, LOCA Outside Containment, is in progress.
- Leakage is reported from the RHR Heat Exchanger Room.
- The RO closes MOV-3-744A and MOV-3-744B, RHR to Cold Leg Isolations.

Which one of the following completes the statements below IAW 3-EOP-ECA-1.2?

Successful leakage isolation is determined by\_\_\_\_\_.

- A. RCS pressure rising
- B. PRZ level rising
- C. Aux Building radiation lowering
- D. RHR sumps level lowering

Question # 17

Given the following conditions:

- Unit 3 tripped due to a LOCA.
- A loss of emergency coolant recirculation occurred.
- 3-EOP-ECA-1.1, Loss of Emergency Coolant Recirculation, is in progress.
- 3A Charging Pump is running.
- All Unit 3 RHR and HHSI pumps are running.
- Reactor Vessel Plenum level is 58% and stable.
- CET subcooling is 70°F and stable.
- Containment temperature is 250°F and lowering.
- Unit 3 RWST level is 60,000 gallons and lowering.

Which one of the following completes the statements below?

The RO is required to stop the (1) pumps due to (2).

- A. (1) RHR and HHSI  
(2) SI termination criteria met
- B. (1) RHR and HHSI  
(2) insufficient suction head
- C. (1) ONLY the RHR  
(2) SI termination criteria met
- D. (1) ONLY the RHR  
(2) insufficient suction head

Question # 18

Given the following conditions:

- Unit 3 experiences LOOP.
- A loss of all AFW occurs.
- 3-EOP-FR-H.1, Loss of Secondary Heat Sink, is in progress.
- A source of feedwater can NOT be restored.
- 3A Charging Pump is NOT available.

Which one of the following completes the statements below?

The preferred RCS bleed path is through the (1).

IAW 3-EOP-FR-H.1, the RO will start (2) charging pump(s).

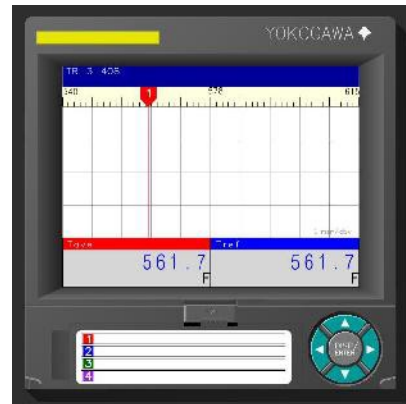
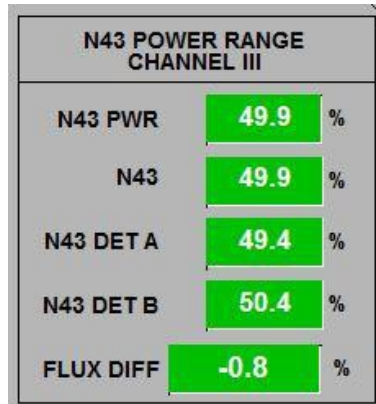
- A. (1) PORVs  
(2) ONLY one
- B. (1) PORVs  
(2) both available
- C. (1) RCS Vent Valves  
(2) ONLY one
- D. (1) RCS Vent Valves  
(2) both available

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Question # 19

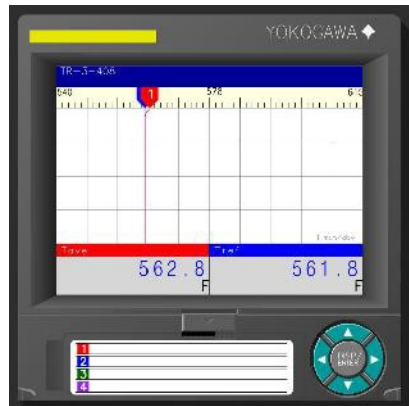
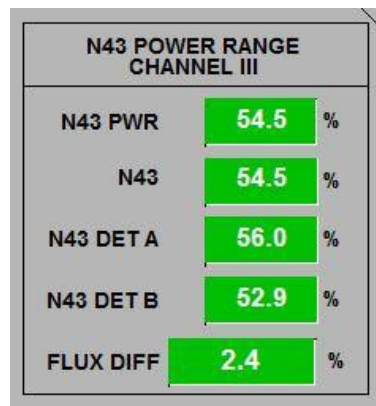
Given the following conditions:

N-3-43. Power Range Channel III, and Tave-Tref recorder indication is:



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Subsequently RO observes the following:



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Which one of the following identifies the event in progress?

- A. A continuous rod withdrawal
- B. A continuous turbine load raise
- C. An inadvertent RCS dilution
- D. A turbine control valve failing closed

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Question # 20

Giving the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- LC-459CX, PRZ Level Comparator Relay de-energizes.

Which one of the following describes the expected plant response?

FI-3-122, Charging Line Flow, indication will (1).

The controller demand for HCV-3-121, Charging flow to Regen Heat Exchanger, (2) AUTOMATICALLY change.

- A. (1) remain the same  
(2) will
- B. (1) remain the same  
(2) will NOT
- C. (1) lower  
(2) will
- D. (1) lower  
(2) will NOT

Question # 21

Given the following conditions:

- 3A SG developed a tube leak.
- 3-ONOP-071.2, Steam Generator Tube Leakage, is in progress.
- R-3-15, SJAE PRMS channel, reaches the High alarm setpoint.

Which one of the following completes the statements below?

R-3-15 operability will be verified by \_\_\_\_\_ and \_\_\_\_\_.

- A. checking the RDU green OPERATE LED ON;  
depressing check source pushbutton to observe readout change
- B. checking RDU green OPERATE LED ON;  
checking plus sign (+) rotating
- C. depressing Fail/Test pushbutton to observe readout change;  
depressing check source pushbutton to observe readout change
- D. depressing Fail/Test pushbutton to observe readout change;  
checking plus sign (+) rotating

Question # 22

Given the following conditions:

- Unit 3 is at 90% power.
- Condenser Vacuum is 23 inches Hg and lowering.
- 3-ONOP-014, Main Condenser Loss of Vacuum, is in progress.

Which one of the following completes the statements below?

The Steam Dump to Condenser low vacuum interlock is designed to prevent condenser (1)\_\_\_\_\_.

The current condenser vacuum\_\_\_\_(2)\_\_\_\_for Condenser Steam Dumps operation.

- A. (1) overpressurization  
(2) does NOT allow
- B. (1) overpressurization  
(2) allows
- C. (1) tube erosion  
(2) does NOT allow
- D. (1) tube erosion  
(2) allows

Question # 23

Given the following conditions:

- R-14, Plant Vent Gaseous Effluent Monitor, HIGH ALARM actuates.
- 3-ONOP-067, Radioactive Effluent Release, is in progress.

Which one of the following completes the statements below?

In order to limit airborne activity (1) the auxiliary building, RCV-014, Gas Decay Tank Discharge Valve, (2) closed/close.

- A. (1) inside  
(2) is required to be MANUALLY
- B. (1) inside  
(2) will AUTOMATICALLY
- C. (1) outside  
(2) is required to be MANUALLY
- D. (1) outside  
(2) will AUTOMATICALLY



Question # 24

Which one of the following completes the statements below?

3-OSP-300.1, Alternate Shutdown Panel 3C264 Operability Test, tests CV-3-1606, 3A Atmospheric Steam Dump, operation with the Alternate Shutdown Panel REMOTE/LOCAL switch in the (1).

With CV-3-1606, Alternate Shutdown Panel REMOTE/LOCAL switch in LOCAL, ANN F1/3, ALTERNATE SHUTDOWN PANEL TROUBLE, is required to be (2) to meet 3-OSP-300.1 acceptance criteria.

- A. (1) LOCAL position ONLY  
(2) in alarm
- B. (1) LOCAL position ONLY  
(2) clear
- C. (1) LOCAL and REMOTE positions  
(2) in alarm
- D. (1) LOCAL and REMOTE positions  
(2) clear

Question # 25

Given the following conditions:

- Unit 3 is at 100% power.
- ANN H1/4, PRMS HI RADIATION, alarms.
- R-3-20, Reactor Coolant Letdown, high alarm is lit.

Which one of the following completes the statements below?

Letdown flow   (1)   be AUTOMATICALLY isolated.

IAW 3-ONOP-067, Radioactive Effluent Release, the RO   (2)   perform a fail test to check R-3-20 operability.

- A.   (1) will  
      (2) will NOT
- B.   (1) will  
      (2) will
- C.   (1) will NOT  
      (2) will NOT
- D.   (1) will NOT  
      (2) will

Question # 26

Which ONE of the following identifies:

(1) the MINIMUM Containment Recirculation Sump level that requires the entry into 3-EOP-FR-Z.2, Response to Containment Flooding, and

(2) the basis for limiting containment sump level?

- A. (1) 428 inches  
(2) Protects Containment barrier
- B. (1) 428 inches  
(2) Protects components needed for recovery
- C. (1) 448 inches  
(2) Protects components needed for recovery
- D. (1) 448 inches  
(2) Protects Containment barrier

Question # 27

Given the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- Unit 3 experiences a 3C SG fault concurrent with a LOOP.
- 3-EOP-FR-P.1, Response to Imminent Pressurized Thermal Shock, is entered.

Which one of the following completes the statements below?

AFW flow to 3C SG will be (1).

The RCS will be depressurized utilizing PRZ (2).

- A. (1) isolated  
(2) Normal Spray
- B. (1) isolated  
(2) PORVs
- C. (1) reduced to 50 gpm  
(2) Normal Spray
- D. (1) reduced to 50 gpm  
(2) PORVs

Question # 28

Given the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- Unit 3 experiences a steam line break outside containment.
- SI actuates on Unit 3.

Which one of the following describes the effect of this SI actuation on the RCPs?

- A. CCW flow to and from the RCPs thermal barrier is isolated
- B. CCW flow to and from the RCPs motor bearing coolers is isolated
- C. CBO flow rises
- D. CBO flow lowers

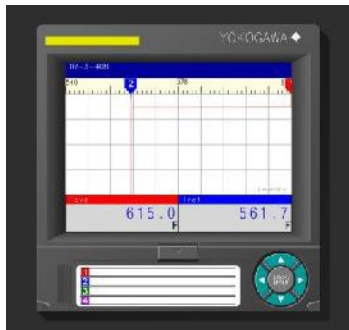
Question # 29

Given the following sequence:

- Unit 3 is at 50% power.
- All primary control systems are in AUTO.

Subsequently:

- ANN B4/4, TAVG/TAVG-TREF DEVIATION, alarms with the following indication on the console Tave-Tref Recorder:



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Which one of the following completes the statements below?

Charging pump speed will \_\_\_\_ (1) \_\_\_\_.

The RO will NEXT \_\_\_\_ (2) \_\_\_\_.

- A. (1) lower  
(2) place Control Rods in manual
- B. (1) lower  
(2) trip the applicable bi-stables
- C. (1) raise  
(2) place Control Rods in manual
- D. (1) raise  
(2) trip the applicable bi-stables

Question # 30

Given the following conditions:

- Unit 4 is at 100% power.

Subsequently:

- ANN H8/6, CCW HEAD TANK HI/LO LEVEL, alarms.

Which one of the following completes the statements below?

IAW ANN H8/6 the CVCS system's Seal Water Heat Exchanger tube leakage is verified by\_\_\_\_\_.

- A. unexplained reactor power rise.
- B. lowering VCT level.
- C. lowering PRZ level.
- D. elevated molybdates levels in the RCS.

Question # 31

Given the following conditions:

- Core reload is in progress on Unit 4.
- 4A RHR Pump is OOS.
- 4B RHR Pump has been running continuously for the past 24 hours.
- RHR flow is 3500 gpm.

Subsequently:

- The Manipulator Crane Operator requests that the 4B RHR Pump be stopped or RHR flow be reduced to less than 1000 gpm for 2 hours (duration of activity).

Which one of the following completes the statements below?

RHR\_\_\_\_\_.

- A. flow is allowed to be reduced 1000 gpm then subsequently raised back to 3500 gpm when work is completed
- B. pump is allowed to be stopped for 1 hour provided no reduction in RCS boron concentration occurs
- C. flow is allowed be stopped provided RCS temperature does NOT exceed 140°F
- D. pump is NOT allowed to be stopped while the core reload is in progress



Question # 32

With Unit 3 at 100% power, which one of the following identifies a valve that will automatically reposition on a Safety Injection signal?

- A. MOV-878A, HHSI Pump Header Isolation.
- B. MOV-3-864A, RWST Outlet Isolation.
- C. MOV-3-865A, 3A Accumulator Discharge.
- D. MOV-3-843A, HHSI to Cold Leg MOV.

Question # 33

Given the following conditions:

- A pressurizer bubble is being drawn IAW 3-NOP-041.02, Pressurizer Operation.
- Both PORV control switches are in AUTO.
- Overpressure Mitigation System (OMS) switch is in LOW PRESSURE OPS.
- PRZ heaters are energized.
- The RO throttles PCV-3-145, Low Pressure Letdown Controller, closed to lower letdown flow.

Subsequently:

- PCV-3-145, Low Pressure Letdown Control Valve, closes and stops responding.
- RCS pressure is 400 psig and rising.
- RCS temperature is 285°F.

Which one of the following identifies the plant response?

RCS pressure will be relieved to (1) at (2).

- A. (1) PRT  
(2) 440 psig
- B. (1) PRT  
(2) 1730 psig
- C. (1) VCT  
(2) 440 psig
- D. (1) VCT  
(2) 1730 psig

**NRC L-17 -1 EXAM SECURE INFORMATION**

Question # 34 : Question Deleted – Refer to Post-Exam Comment Item #1  
Resolution in the Turkey Point 2017-301 Exam Report, Enclosure 2

Question # 35

Given the following conditions:

- Unit 3 is in MODE 4.
- RCS pressure is 370 psig.
- Crew prepares to place RHR in service.
- MOV-3-750, Loop 3C RHR Pump Suction Stop Valve, is open.
- MOV-3-862B, RHR Suction from RWST, is open.

Subsequently:

- RCS pressure rises to 475 psig.

Which ONE of the following completes the statements below?

MOV-3-751, Loop 3C RHR Pump Suction Stop Valve,   (1)   prevented from opening by RCS pressure.

MOV-3-751   (2)   prevented from opening by MOV-3-862B.

- A.   (1) is  
      (2) is
- B.   (1) is  
      (2) is NOT
- C.   (1) is NOT  
      (2) is
- D.   (1) is NOT  
      (2) is NOT

Question # 36

Given the following conditions:

- Unit 3 is in MODE 3.
- RCS Tave is 540°F and stable.
- PRZ pressure is 1800 psig and stable.

Subsequently:

- A PZR PORV starts leaking.
- ANN A7/1, PRT HI/LO LEVEL HI PRESS/TEMP, alarms.
- PI-3-472, PRT Pressure, indicates 18 psig and rising.

Which one of the following completes the statement below?

The nearest expected PORV tail pipe temperature is\_\_\_\_\_.

- A. 222°F
- B. 256°F
- C. 621°F
- D. 653°F

Question # 37

Given the following conditions:

- Unit 3 is at 100% power.
- PT-3-455, PRZ Pressure Transmitter, fails and is removed from service IAW 3-ONOP-049.1, Deviation or Failure of Safety Related or Reactor Protection Channels.

Which one of the following identifies the RPS and ESF actuation logic required, from the remaining in-service channels, to initiate a reactor trip and safety injection on low pressurizer pressure?

- A. Reactor Trip- 2/2, Safety Injection-2/2
- B. Reactor Trip- 1/2, Safety Injection-1/2
- C. Reactor Trip- 2/2, Safety Injection-1/2
- D. Reactor Trip- 1/2, Safety Injection-2/2

Question # 38

Given the following conditions:

- Unit 4 is at 100% power.
- 4D 4Kv bus is aligned to the 4A 4Kv bus.

Subsequently:

- 4A 4kV bus locks out due to a fire.

Which one of the following identifies the current power source to the CCW pumps?

- A. ONLY 4B CCW pump has power from the Startup Transformer.
- B. 4B and 4C CCW pumps have power from the Startup Transformer.
- C. ONLY 4B CCW pump has power from the 4B EDG.
- D. 4B and 4C CCW pumps have power from the 4B EDG.

Question # 39

Given the following conditions:

- Unit 3 is at 100% power.
- Containment temperatures are higher than normal due to summer environmental conditions.

Which one of the following completes the statements below?

To address elevated containment temperature, operators (1) align the outlet of the supplemental cooling system directly to the NCCs.

An elevated containment temperature (2) cause an AUTOMATIC isolation of the supplemental cooling system.

- A. (1) will  
(2) will
- B. (1) will  
(2) will NOT
- C. (1) will NOT  
(2) will
- D. (1) will NOT  
(2) will NOT



Question # 40

Given the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- Unit 3 experiences a steam break inside containment.
- 3A ECC fails to start.
- Containment pressure peaks at 15 psig.

Which one of the following completes the statements below?

Adverse Containment conditions    (1) be reached.

(2) will be used to evaluate reactor power.

- A.    (1) will NOT  
      (2) Gamma-Metrics
- B.    (1) will NOT  
      (2) Intermediate Range Nuclear Instruments
- C.    (1) will  
      (2) Gamma-Metrics
- D.    (1) will  
      (2) Intermediate Range Nuclear Instruments

Question # 41

Given the following conditions:

- Unit 4 experiences a LOCA from 100% power.
- At 10:00 am Containment pressure is 17 psig and rising from normal containment pressure.

Which one of the following completes the statements below?

At 10:00 am, MOV-4-880B, Containment Spray Isolation\_\_\_\_(1)\_\_\_open.

Opening of MOV-4-880B, Containment Spray Isolation is initiated from the  
\_\_\_\_(2)\_\_\_\_\_.

- A. (1) is  
(2) 4B sequencer
- B. (1) is  
(2) Containment Isolation Racks
- C. (1) is NOT  
(2) 4B sequencer
- D. (1) is NOT  
(2) Containment Isolation Racks

Question # 42

Given the following Conditions:

- Unit 3 is at 100% power.
- 3-OSP-206.2, Quarterly In Service Valve Testing for the MSIV Bypass Valves, is in progress.
- MOV-3-1402, Main Steam Stop 3C Bypass Valve, is open.

Subsequently:

- A steam break occurs inside containment.
- Containment pressure rises to 30 psig.

Which of the following describes how the Main Steam System will respond?

The MSIVs (1) close.

Bypass Valve MOV-3-1402 (2) close.

- A. (1) will NOT  
(2) will NOT
- B. (1) will NOT  
(2) will
- C. (1) will  
(2) will NOT
- D. (1) will  
(2) will

Question # 43

Given the following conditions:

- Unit 3 is stable at 24% power.
- 3-GOP-301, Hot Standby to Power Operation, is in progress.
- 3A Main Feedwater Pump is in service.
- 3B Main Feedwater Pump is OOS.

Which one of the following completes the statements below?

Power Level   (1)   high enough to support Main Feedwater Flow Control Valve automatic operation.

In this configuration, 3-GOP-301   (2)   power escalation to 52% reactor power.

- A. (1) is  
(2) does NOT allow
- B. (1) is  
(2) allows
- C. (1) is NOT  
(2) does NOT allow
- D. (1) is NOT  
(2) allows

Question # 44

Given the following conditions:

- Unit 3 trips from 100% power.
- 3-EOP-ES-0.1, Reactor Trip Response, is in progress.
- Tave is 547°F and stable.
- SG NR levels are:

SG	Level (NR)
3A	75%
3B	32%
3C	29%

Which one of the following completes the statements below?

The Main Steam Generator Feed Pumps (1)\_\_\_automatically tripped.

The Main Feedwater Control Valves have automatically\_\_\_(2)\_\_\_closed.

- A. (1) have  
(2) slow
- B. (1) have  
(2) fast
- C. (1) have NOT  
(2) slow
- D. (1) have NOT  
(2) fast

Question # 45

Which one of the following identifies the power supply for MOV-3-1404, 3B Stm Supply to AFW Pumps?

- A. 3A Vital MCC.
- B. 3D Vital MCC.
- C. 3D01 Vital DC Bus.
- D. 4D01 Vital DC Bus.

Question # 46

Given the following conditions:

- Unit 3 is in MODE 1.

Subsequently:

- The Auxiliary Feedwater (AFW) system receives an auto-start.
- A AFW pump trips on over-speed during startup.

Which one of the following identifies the effect of this event on Train 1 AFW flow control valves?

The Train 1 AFW flow control valves will\_\_\_\_\_.

- A. remain closed
- B. auto-open and remain fully open
- C. auto-open but will close after the AFW pump trips
- D. auto-open and then throttle back

Question # 47

Given the following conditions:

- Unit 3 is at 100% power.
- The BS Inverter is in service aligned to Unit 3.

Subsequently:

- Unit 3 experiences a LOOP.
- 3A EDG is locked out.
- 3A Inverter DC input breaker OPENS.

Which one of the following identifies the availability of Unit 3 vital AC panels?

3P07

3P08

- |    |               |               |
|----|---------------|---------------|
| A. | Available     | Available     |
| B. | Available     | NOT Available |
| C. | NOT Available | Available     |
| D. | NOT Available | NOT Available |



Question # 48

Given the following conditions:

- Unit 4 is at 100% reactor power.

Subsequently:

- 4B DC Bus de-energizes.

Which one of the following completes the statements below?

Based on the conditions above, a reactor trip (1) occurred.

In the event of a subsequent SI signal, the Unit 4 Train B Safeguards equipment (2) AUTOMATICALLY start.

- A. (1) has  
(2) will NOT
- B. (1) has  
(2) will
- C. (1) has NOT  
(2) will NOT
- D. (1) has NOT  
(2) will

Question # 49

Given the following conditions:

- Unit 4 is at 100% power.

Subsequently:

- Vital DC bus 4D23 loses power.

Which one of the following correctly completes the statements below?

Control power is lost to \_\_\_\_\_ 480V Load Center.

- A. 3C
- B. 3D
- C. 4C
- D. 4D

Question # 50

Given the following conditions:

- 3A EDG is paralleled to the 3A 4kV Bus.
- 3A EDG indicates 1050 kVAR in the LAG.

Which one of the following completes the statements below?

To adjust reactive load to a setting of 700 kVARs in the LAG, the RO will manipulate the 3A EDG (1) switch to the (2) direction.

- A. (1) speed changer  
(2) lower
- B. (1) speed changer  
(2) raise
- C. (1) voltage regulator  
(2) lower
- D. (1) voltage regulator  
(2) raise

Question # 51

Given the following conditions:

- Waste Gas Decay Tank (GDT) F, release is in progress.

Subsequently:

- R-14, Plant Vent Gaseous Monitor, is determined to be OOS.
- Chemistry determines that a release of B GDT is required.

Which one of the following completes the statements below?

The RO (1) required to stop the F GDT release.

R-14 is OOS, the B GDT is to be released. 0-NOP-061.14B, Waste Gas Disposal System Controlled Release Of Gas Decay Tank B, requires (2) prior to release.

- A. (1) is NOT  
(2) at least two independent samples analyzed
- B. (1) is NOT  
(2) R-14 to be returned to service
- C. (1) is  
(2) at least two independent samples analyzed
- D. (1) is  
(2) R-14 to be returned to service

Question # 52

Given the following conditions:

- Unit 3 experiences an SI from a 100% power.

Which one of the following completes the statements below?

The RO will verify POV-3-4882 and POV-3-4883, ICW/TPCW isolation valves (1).

Cooling will be supplied to a MINIMUM of (2) of the emergency CCW heat loads.

- A. (1) automatically close  
(2) two
- B. (1) automatically close  
(2) three
- C. (1) remain open  
(2) two
- D. (1) remain open  
(2) three

Question # 53

Given the following conditions:

- Unit 3 is operating at 100% power.
- 3A and 3B ICW pumps running.
- 3C ICW pump is OOS.

Subsequently:

- 3A ICW Pump trips.
- 3-ONOP-019, Intake Cooling Water Malfunction, is entered with the following:
- Total ICW flow is 20,500 gpm.
- TPCW heat exchanger outlet temperature is 98°F.
- 3B ICW Pump indication:



**ALSO PROVIDED AS A REFERENCE IN LARGER FORMAT**

Which ONE of the following identifies the action required?

IAW 3-ONOP-019, the crew is required to manipulate 3-50-401, TPCW HX Outlet Combined ICW Isolation Valve (1) while monitoring (2).

- A. (1) CLOSED  
(2) TPCW heat exchanger outlet temperature
- B. (1) CLOSED  
(2) ICW Pump Motor amps
- C. (1) OPEN  
(2) TPCW heat exchanger outlet temperature
- D. (1) OPEN  
(2) ICW Pump Motor amps

Question # 54

Given the following conditions:

- Both units are at 100% power.

Subsequently:

- ANN I6/2, INSTR AIR COMPRESSOR TROUBLE, alarms on Unit 3.
- Both control room instrument air pressure indicators, slowly lower to 96 psig and recover to 110 psig.
- Unit 3 TO reports that the ELECTRIC LEAD Instrument Air compressor tripped.

Which one of the following identifies the current status of the Instrument Air Compressors?

- A. ELECTRIC LAG Compressor failed to start, AND DIESEL STANDBY- LEAD Compressor is running loaded
- B. ELECTRIC LAG Compressor is running loaded, AND DIESEL STANDBY- LEAD Compressor is running loaded.
- C. DIESEL STANDBY- LEAD Compressor failed to start, AND DIESEL STANDBY- LAG Compressor is running loaded
- D. DIESEL STANDBY- LEAD Compressor is running loaded, AND DIESEL STANDBY- LAG Compressor is running loaded.

Question # 55

Given the following conditions:

- Unit 4 is at 100% power.

Subsequently:

- Unit 4 experiences a LOCA.
- Containment pressure is 27 psig and rising.
- Containment Isolation Valve indication on Vertical Panel B is dimly lit for:
  - MOV-4-626, RCP Thermal Barrier CCW Outlet
  - MOV-4-1418, CCW to Normal Containment Cooler Valves.

Which one of the following completes the statements below?

Attachment 3 of 4-EOP-E-0, Reactor Trip of Safety Injection, (1) require manual action to achieve Phase A containment isolation.

Attachment 3 of 4-EOP-E-0, Reactor Trip of Safety Injection, (2) require manual action to achieve Phase B containment isolation.

- A. (1) will NOT  
(2) will NOT
- B. (1) will NOT  
(2) will
- C. (1) will  
(2) will NOT
- D. (1) will  
(2) will



**NRC L-17 -1 EXAM SECURE INFORMATION**

Question # 56

Which one of the following completes the statements below?

Control Rod Drive MG sets are normally powered from a (1) 480V (2).

- A. (1) vital  
(2) Motor Control Center
- B. (1) vital  
(2) Load Center
- C. (1) non-vital  
(2) Motor Control Center
- D. (1) non-vital  
(2) Load Center

Question # 57

Given the following conditions:

- Unit 3 is at 100% power.
- Pressurizer Level Control is selected as follows:



**ALSO PROVIDED AS A REFERENCE IN LARGER FORMAT**

Subsequently:

- LT-3-459, PRZ Level Protection/Control, fails to 0%.

Which one of the following identifies the expected plant response?

- A. Charging pump speed lowers
- B. Pressurizer backup heaters energize
- C. Letdown Isolation Valve, LCV-3-460, closes
- D. ONLY the associated PRZ level indication changes

Question # 58

Which one of the following completes the statements below?

The At Power Reactor Trips will be enabled when a MINIMUM of (1) Power Range Nuclear Instruments read a MINIMUM of (2) reactor power.

- A. (1) three  
(2) 7%
- B. (1) three  
(2) 10%
- C. (1) two  
(2) 7%
- D. (1) two  
(2) 10%

Question # 59

Given the following conditions:

- Unit 3 is in MODE 6.
- A Core offload is in progress.
- The Containment Equipment Hatch and Personnel Hatch are closed.
- Containment Purge is operating with Purge Supply and Exhaust fans running.
- A fuse blows for POV-3-2601, Containment Purge Supply Isolation.

Which one of the following identifies the expected plant response?

- A. Containment pressure rises.
- B. Containment pressure lowers.
- C. Containment Purge Supply Fan trips.
- D. Containment Purge Exhaust Fan trips.

Question # 60

Given the following conditions:

- Unit 3 is at 80% power.

Subsequently:

- 3A Main Feedwater Pump Trip initiates a runback.
- 3-ONOP-089, Turbine Runback, IOAs are in progress.
- All Steam Dump to the Condenser (SDTC), remain closed.
- All Steam Dump to Atmosphere (SDTA), remain closed.
- RCS Tave is 582°F and rising.

Which one of the following completes the statements below?

Cladding protection against DNB is achieved by the RO FIRST opening the \_\_\_\_ (1) \_\_\_\_ and backed up by the \_\_\_\_ (2) \_\_\_\_ RPS trip.

- A. (1) SDTC  
(2) OTDT
- B. (1) SDTC  
(2) OPDT
- C. (1) SDTA  
(2) OTDT
- D. (1) SDTA  
(2) OPDT

Question # 61

Given the following conditions:

- Unit 3 is raising power IAW 3-GOP-301, Hot Standby to Power Operation.
- Tref is 561°F.

Which one of the following completes the statements below?

Tref is determined by (1) pressure.

The current plant conditions correspond to (2) power level.

- A. (1) selected Turbine Inlet  
(2) 42%
- B. (1) selected Turbine Inlet  
(2) 58%
- C. (1) median Main Steam Header  
(2) 42%
- D. (1) median Main Steam Header  
(2) 58%

Question # 62

Which one of the following completes the statements below?

Condenser Air Ejector Exhaust Radiation is monitored on (1).

On this computer interface, a condenser air-in leakage read-out  
(2) available.

- A. (1) DCS  
(2) is NOT
- B. (1) DCS  
(2) is
- C. (1) QSPDS  
(2) is NOT
- D. (1) QSPDS  
(2) is

Question # 63

Given the following conditions:

- Unit 3 is at 100% power.

Subsequently:

- 3C Condensate Pump breaker trips.
- Tave is 582.2°F and rising.
- Tref is 576°F and lowering.

Which one of the following completes the statements below?

An automatic turbine runback to a MINIMUM of (1)\_\_\_is initiated.

Based on these conditions the RO\_\_\_(2)\_\_\_required to trip the reactor.

- A. (1) 85%  
(2) is
- B. (1) 85%  
(2) is NOT
- C. (1) 50%  
(2) is
- D. (1) 50%  
(2) is NOT



Question # 64

Given the following conditions:

- Unit 3 is in MODE 5.
- ANN X4/1, ARMS HI RADIATION, alarms.

Which one of the following completes the statements below?

0-ONOP-066, High Area Radiation Monitoring System Alarm, requires the crew to FIRST (1).

These actions will be performed from a panel located (2) the RO surveillance area.

- A. (1) verify the setpoint on the affected ARMS channel, AND then press the alarm acknowledge pushbutton  
(2) inside
- B. (1) press the alarm acknowledge pushbutton, AND then verify the setpoint on the affected ARMS  
(2) inside
- C. (1) verify the setpoint on the affected ARMS channel, AND then press the alarm acknowledge pushbutton  
(2) outside
- D. (1) press the alarm acknowledge pushbutton, AND then verify the setpoint on the affected ARMS  
(2) outside

Question # 65

Given the following conditions:

- Unit 4 ANN I6/6, XFMR/H2 SEAL OIL DELUGE OPERATING, alarms.
- A fire is reported on the Unit 4 Main Transformer.

Which one of the following completes the statements below?

The fire pumps receive an AUTOMATIC start signal from a (1) transmitter in the fire main header.

Fire pump starting (2) cause ANN X5/3, SERVICE WTR/ FIRE PUMP/ RWT / WTP TROUBLE, to alarm.

- A. (1) pressure  
(2) will
- B. (1) pressure  
(2) will NOT
- C. (1) flow  
(2) will
- D. (1) flow  
(2) will NOT

Question # 66

Which one of the following completes the statements below?

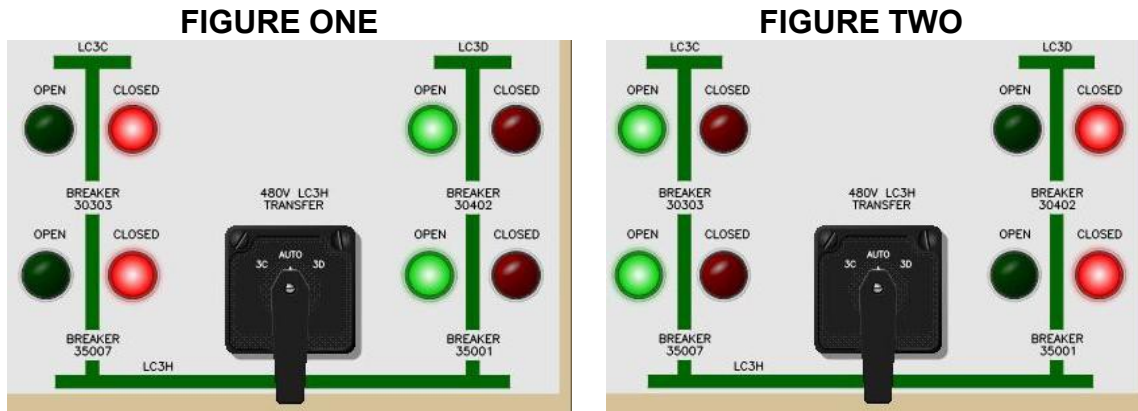
In accordance with 0-ADM-200, Operations Management Manual:

- Night Orders are (1) to be issued by the Operations Director.
- Night Orders expire after (2) days.

- A. (1) required  
(2) 30
- B. (1) required  
(2) 90
- C. (1) NOT required  
(2) 30
- D. (1) NOT required  
(2) 90

Question # 67

Given :



Which one of the following identifies (1) the location of the 480V LC3H Transfer Control Switch and (2) the NORMAL alignment for 3H 480V Load Center?

- A. (1) VERTICAL PANEL A  
(2) FIGURE ONE
- B. (1) VERTICAL PANEL A  
(2) FIGURE TWO
- C. (1) VERTICAL PANEL B  
(2) FIGURE ONE
- D. (1) VERTICAL PANEL B  
(2) FIGURE TWO

Question # 68

Given the following conditions:

- Unit 4 is in MODE 6
- Refueling cavity water level is 57 feet 5 inches and stable.
- Preparations for a core off-load are in progress on Unit 4.
- Both containment personnel air lock doors are open and functional.
- The designated person for the containment personnel air lock door closure is on station.

Which one of the following completes the statements below?

Both SFP heat exchangers and pumps are required to be placed in parallel operation (1)\_\_\_\_\_.

Core off-load (2)\_\_\_\_\_.

- A. (1) prior to core off load  
(2) is allowed with both personnel air lock doors open
- B. (1) prior to core off load  
(2) will be delayed until a MINIMUM of one personnel air lock door is closed
- C. (1) if SFP exceeds 140°F  
(2) is allowed with both personnel air lock doors open
- D. (1) if SFP exceeds 140°F  
(2) will be delayed until a MINIMUM of one personnel air lock door is closed

Question # 69

Which one of the following completes the statements below?

During a reactor startup, 3-OSP-041.16, Minimum Temperature For Criticality Verification, requires the crew to check \_\_\_\_ (1) \_\_\_\_ is maintained above a MINIMUM of \_\_\_\_ (2) \_\_\_\_.

- A. (1) Tave  
(2) 541°F
- B. (1) Tave  
(2) 543°F
- C. (1) Tcold  
(2) 541°F
- D. (1) Tcold  
(2) 543°F

Question # 70

Given the following conditions:

- Unit 3 is in MODE 1.
- 3A HHSI Pump experiences a sheared shaft while being tested.

Which one of the following completes the statements below?

OP-AA-102-1003, Guarded Equipment, requires (1) to be guarded.

In order to guard the HHSI pump(s), (2).

- A. (1) ONLY the 3B HHSI pump AND its breaker  
(2) a sign is posted on the HHSI pump room door
- B. (1) ONLY the 3B HHSI pump AND its breaker.  
(2) equipment tape and/or stanchions are placed around the pump(s)
- C. (1) the 3B, 4A and 4B HHSI pumps AND their breakers  
(2) a sign is posted on the HHSI pump room door
- D. (1) the 3B, 4A and 4B HHSI pumps AND their breakers  
(2) equipment tape and/or stanchions are placed around the pump(s)

Question # 71

Given the following conditions:

- Unit 3 and Unit 4 EDGs lube-oil sumps are full.
- It is discovered that there is no additional diesel lubricating oil available on plant site.

Which one of the following completes the statements below?

\_\_\_(1)\_\_\_EDGs remain OPERABLE.

- A. ONLY Unit 4
- B. ONLY Unit 3
- C. BOTH Unit 3 and Unit 4
- D. NEITHER Unit 3 or Unit 4



Question # 72

Given the following conditions:

- A Steam Generator Tube Rupture occurred on 3B SG.
- 3-EOP-E-3, Steam Generator Tube Rupture, is in progress.
- Depressurization of the RCS is about to commence.

Which one of the following completes the statement below?

3B SG Steam Dump to Atmosphere Controller will be maintained in   (1)   to   (2)  .

- A. (1) Manual  
(2) minimize radioactive releases to atmosphere
- B. (1) Manual  
(2) reduce break flow into the ruptured S/G
- C. (1) AUTO  
(2) minimize radioactive releases to atmosphere
- D. (1) AUTO  
(2) reduce break flow into the ruptured S/G

Question # 73

IAW 0-ADM-211, Emergency and Off-Normal Operating Procedure Usage, a crew brief is expected to take place prior to transitioning to which one of the following procedures?

- A. 3-EOP-ES-1.3, Transfer To Cold Leg Recirculation
- B. 3-EOP-FR-P.1, Response To Imminent Pressurized Thermal Shock Condition
- C. 3-EOP-ES-1.2, Post LOCA Cooldown and Depressurization
- D. 3-EOP-E-3, Steam Generator Tube Rupture

Question # 74

Given the following conditions:

- Unit 3 experiences a small break LOCA.
- 3-EOP-ES-1.2, Post LOCA Cooldown and Depressurization, is in progress.
- Both RHR pumps are stopped.
- RCS pressure is 1500 psig and stable.
- Containment pressure is 6 psig and stable.

Subsequently:

- HHSI pumps flow rises rapidly.
- RCS subcooling is 10°F and lowering.
- Containment pressure is 21 psig and rising.

Which one of the following describes proper operator response?

- A. MANUALLY start 3A and 3B RHR pumps.
- B. MANUALLY start one RHR pump ONLY.
- C. Maximize charging flow.
- D. Verify that 3A and 3B RHR pumps AUTO start.

Question # 75

Given the following conditions:

- Unit 3 experiences a reactor trip and safety injection.
- A total loss of AFW occurs.
- 3-EOP-FR-H.1, Response to Loss of Secondary Heat Sink, is in progress.

Which of the following conditions requires immediate suspension of 3-EOP-FR-H.1?

- A. The STA reports a RED path exists for Integrity.
- B. The STA reports an RED path exists for Containment.
- C. The five hottest CETs indicate 750°F.
- D. Power is lost to 3A and 3B 4KV Safeguards Buses AND cannot be immediately restored.

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

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

L-17-1 NRC Written Exam  
References List

**RO References**

Steam Tables

Picture: N43 & Tave – Tref recorder

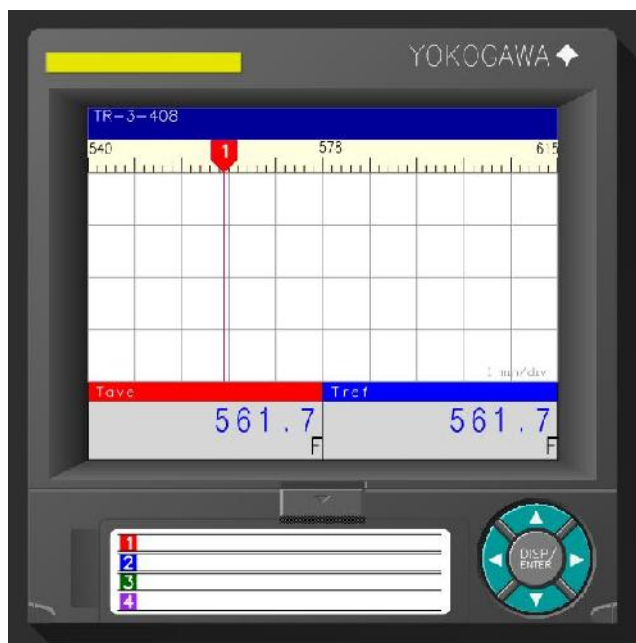
Picture: Tave – Tref recorder

Picture: 3B ICW Pump controls

Picture: Channel Select PRZ Level Control

Before:

N43 POWER RANGE CHANNEL III		
N43 PWR	49.9	%
N43	49.9	%
N43 DET A	49.4	%
N43 DET B	50.4	%
FLUX DIFF	-0.8	%



Subsequently:

N43 POWER RANGE CHANNEL III		
N43 PWR	54.5	%
N43	54.5	%
N43 DET A	56.0	%
N43 DET B	52.9	%
FLUX DIFF	2.4	%

