

Question: 1

Initial Conditions:

- Reactor at 50% and stable.
- Tave at 558 °F, Tref at 558 °F.

Current Conditions:

- Median Tave fails such that Tave is 4.0 °F lower than Tref.
- Rod Control is placed in manual 30 seconds after the failure occurs.

Which ONE of the following states:

- 1) The direction of rod motion immediately before the rods were placed in manual.
- 2) The number of steps the control rods must be moved to restore the control rods to their **previous** rod height (prior to the Tave failure).

A. 1) Out.
2) 16.

B. 1) Out.
2) 20.

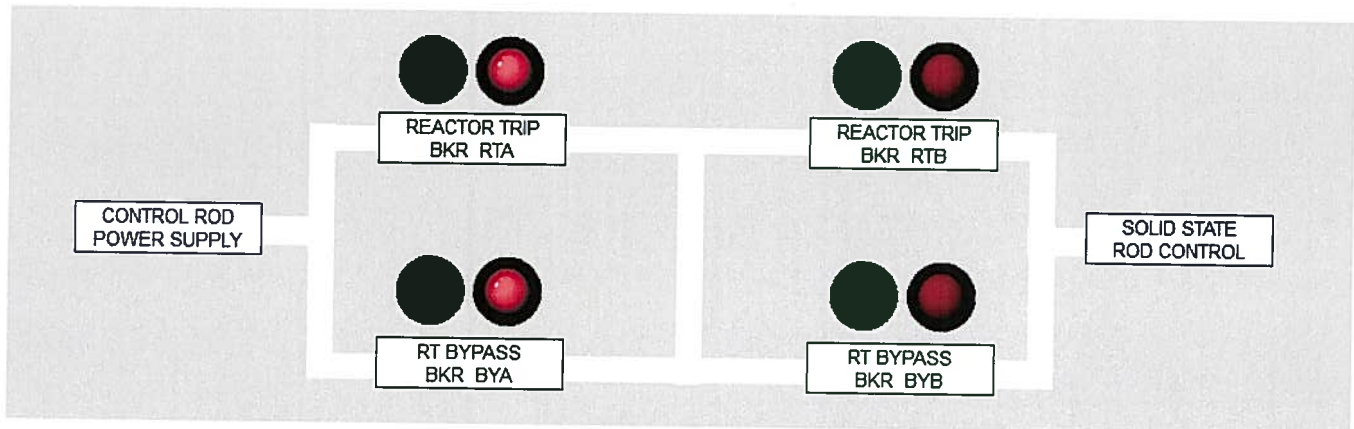
C. 1) In.
2) 16.

D. 1) In.
2) 20.

Question: 2

Initial plant conditions:

- Unit 1 is at 100% power.
- Currently performing a test of Reactor Trip breaker "A" per 1-PT-8.1, Rx. Protection Logic testing.
- An automatic reactor trip signal occurs.
- Reactor Trip and Reactor Trip Bypass breaker position following the Trip are shown below.
- No operator actions have been taken.



Which ONE of the following correctly completes the following statements:

- 1) The Reactor trip and Bypass breakers _____ operate correctly.
 - 2) With respect to the breaker under test, the operator is required to _____.
- A. 1) did not
2) initiate a manual reactor trip per 1-E-0, Reactor Trip or SI
- B. 1) did not
2) locally trip the breaker per 1-FR-S.1, Response to Nuclear Generation/ATWS
- C. 1) did
2) initiate a manual reactor trip per 1-E-0, Reactor Trip or SI
- D. 1) did
2) locally trip the breaker per 1-FR-S.1, Response to Nuclear Generation/ATWS

Question: 3

Initial Conditions:

- The Unit is in Cold Shutdown with the Team preparing to start the first RCP in accordance with 1-OP-RC-001, Starting and Running Any Reactor Coolant Pump.
- Vacuum assist was unavailable during RCS Loop fill.

The following sequence of events occur:

- 0900, "C" RCP started for RCS Vent.
- 0902, "C" RCP secured due to low seal Differential Pressure.
- 0933, "C" RCP started for RCS Vent.
- 0938, "C" RCP secured due to low seal Differential Pressure.
- 1012, "C" RCP started for RCS Vent.
- 1027, "C" RCP secured due to the loss of both seal injection and thermal barrier flow.

Which ONE of the following states:

- 1) What is the earliest time the fourth start of the "C" RCP may be attempted, in accordance with 1-OP-RC-001?
 - 2) When restoring seal injection and thermal barrier cooling to an RCP seal, which is restored first?
- A. 1) 1128.
2) Thermal Barrier.
- B. 1) 1128.
2) Seal Injection.
- C. 1) 1058.
2) Thermal Barrier.
- D. 1) 1058.
2) Seal Injection.

Question: 4

Unit 1 was operating at 100% operation when a failure occurred causing Letdown temperature to rise.

Which of the following describes:

- 1) At what temperature will the Letdown divert valve, 1-CH-TCV-1143 divert to the VCT?
 - 2) What is the reason for this action?
-
- A.
 - 1) 145 °F.
 - 2) Protect Ion Exchanger resin from damage due to high Letdown line temp.
 - B.
 - 1) 145 °F.
 - 2) Mitigate negative reactivity caused by boron release from Demins.
 - C.
 - 1) 130 °F.
 - 2) Protect Ion Exchanger resin from damage due to high Letdown line temp.
 - D.
 - 1) 130 °F.
 - 2) Mitigate negative reactivity caused by boron release from Demins.

Question: 5

Initial Conditions:

- Unit 1 is being cooled down to Cold Shutdown, with RHR in service.

Which ONE of the following states:

- 1) The power supply to 1-RH-MOV-1700, RHR Inlet MOV.
 - 2) The pressure transmitter that supplies the signal for the open (maximum pressure) interlock for 1-RH-MOV-1700.
-
- A. 1) 1H1-2S-8C.
2) 1-RC-PT-1402-1, RCS Pressure Wide Range.
 - B. 1) 1H1-2S-8C.
2) 1-RC-PT-1403, RCS Pressure Narrow Range.
 - C. 1) 1A1-1E-4B.
2) 1-RC-PT-1402-1, RCS Pressure Wide Range.
 - D. 1) 1A1-1E-4B.
2) 1-RC-PT-1403, RCS Pressure Narrow Range.

Question: 6

Given the following conditions:

- RCS temperature is 175°F.
- RCS pressure is 305 psig.
- The PRZR is solid.
- Charging flow control is in manual.
- RHR is in service, with the "A" RHR heat exchanger and 1-RH-P-1A in service.
- 1-RH-FCV-1605, RHR H/X bypass, is in AUTO.

The "A" RHR heat exchanger suddenly develops a 150 gpm tube leak.

With NO Operator actions, which ONE of the following identifies the effect of this malfunction on:

- 1) Flow through the RHR pump.
 - 2) RCS pressure.
-
- A. 1) Flow remains the same.
2) Pressure lowers.
 - B. 1) Flow remains the same.
2) Pressure rises.
 - C. 1) Flow rises.
2) Pressure rises.
 - D. 1) Flow rises.
2) Pressure lowers.

Question: 7

Initial Conditions:

- A Large Break LOCA is in progress.
- The Team is performing 1-E-0, Loss of Reactor or Secondary Coolant.
- The BOP operator is performing 1-E-0, Attachment 1, System Alignment Verification and is on Step 12 "CHECK SI FLOW".

Current Conditions:

- RCS pressure is 30 psig.
- HHSI and LHSI pump amps are listed below:

<u>PUMP</u>	<u>AMPS</u>
1-CH-P-1A	70
1-CH-P-1B	69
1-CH-P-1C	30
1-SI-P-1A	265
1-SI-P-1B	275

Which ONE of the following describes the status of the HHSI and LHSI pumps upon completion of Attachment 1, step 12.

- 1) The HHSI pump that will be secured is _____.
- 2) The number of LHSI pumps that will be running is _____.

- A. 1) 1-CH-P-1C
2) two
- B. 1) 1-CH-P-1A
2) two
- C. 1) 1-CH-P-1C
2) one
- D. 1) 1-CH-P-1A
2) one

Question: 8

Given the following:

- Unit 1 operating at 100%.
- The crew experienced a spurious SI signal.
- Following the SI the Charging pump suction valves have the following positions:
 - 1-CH-MOV-1115B, CHG pump suction from RWST; CLOSED.
 - 1-CH-MOV-1115C, CHG pump suction from VCT; OPEN.
 - 1-CH-MOV-1115D, CHG pump suction from RWST; OPEN.
 - 1-CH-MOV-1115E, CHG pump suction from VCT; CLOSED.
- All other auto SI actions occur as designed.

In the given alignment, the VCT ___(1)___ a source of HHSI flow, and the RWST ___(2)___ a source of HHSI flow.

- A. 1) is 2) is not
- B. 1) is not 2) is
- C. 1) is 2) is
- D. 1) is not 2) is not

Question: 9

Initial Conditions:

- 1-RC-PT-1445, PRZR PRESS CNTRL, failed high.
- The Team has completed the Immediate Actions of 1-AP-31.00, Increasing or Decreasing RCS Pressure.

Current Conditions: (2 minutes later):

- PRT Pressure is 12 psig and stable.
- Annunciator 1C-F7, PRZR RELIEF TK HI PRESS is Lit.

Which ONE of the following identifies:

- 1) The PRZR PORV that was closed is _____.
- 2) The procedure that will direct returning the PRT to normal pressure is _____.

- 1) 1-RC-PCV-1455C
2) 1-AP-31.00, Increasing or Decreasing RCS Pressure
- 1) 1-RC-PCV-1456
2) ARP 1C-F7, PRZR RELIEF TK HI PRESS
- 1) 1-RC-PCV-1455C
2) ARP 1C-F7, PRZR RELIEF TK HI PRESS
- 1) 1-RC-PCV-1456
2) 1-AP-31.00, Increasing or Decreasing RCS Pressure

Question: 10

Initial Conditions:

- Unit 1 is at 100%.
- Tave is at 573 °F.
- Pressurizer Safety Valve 1-RC-SV-1551A inadvertently fails partially open.
- S/G B NR level channel 1, 1-FW-LI-1484, fails high immediately following the Reactor trip.
- 30 seconds later SI automatically actuates.

Current Conditions (10 minutes later)

- Plant is stabilized with Tave at 552 °F and RCS pressure at 1910 psig.
- Pressurizer vapor space temperature is steady at 630 °F.
- Main Feedwater pumps have tripped, all Feed Reg valves are closed, and all Feed Reg Bypass valves are closed.

Which of the following describes:

- 1) The Main Feed pumps trip after the _____.
 - 2) The Feed Regulating Bypass valves initially closed due to the _____.
-
- A. 1) reactor trip, but before the safety injection
2) reactor trip coincident with low Tave
 - B. 1) reactor trip, but before the safety injection
2) safety injection
 - C. 1) safety injection
2) reactor trip coincident with low Tave
 - D. 1) safety injection
2) safety injection

Question: 11

Initial Conditions:

- Unit 1 reactor operating at 100% power.
- A tube leak develops in 1-CC-E-1A, "A" CCHX.

Which ONE of the following states:

- 1) The effect on CC Surge Tank level.
- 2) The CW lines that supply SW to the CCHXs.

A. 1) Rise.
2) 1A/C.

B. 1) Lower.
2) 1B/D.

C. 1) Rise.
2) 1B/D.

D. 1) Lower.
2) 1A/C.

Question: 12

Initial Conditions:

- Unit 1 and Unit 2 operating at 100%.
- LOCA on Unit 1 causing Reactor trip and SI.
- Charging pump, 1-CH-P-1B started then tripped on lockout, 1-CH-P-1A and C are running.
- Containment pressure is 16.2 psia and slowly rising.

Current conditions:

- RO reports loss of 1H 4160 V bus. EDG 1 did not start.
- RCS pressure is 1082 psig and slowly lowering.
- CETC is 528 °F and stable.

Which of the following states:

- 1) RCP Trip criteria is _____.
- 2) In accordance with 1-E-1 Basis; the reason RCPs are tripped is to _____.

- A. 1) Met
2) Prevent excessive depletion of RCS inventory
- B. 1) Not met
2) Minimize heat input
- C. 1) Not met
2) Prevent excessive depletion of RCS inventory
- D. 1) Met
2) Minimize heat input

Question: 13

A ground has developed on DC Panel 1-2, causing 1-RC-SOV-101B-1 and 1-RC-SOV-101B-2, PRZR Vent Valves, to fail open.

Which ONE of the following states:

- 1) The Master Pressure controller output will _____.
- 2) The PRZR Vent Valves discharge to the _____.

A. 1) rise
2) Primary Vent Pot

B. 1) rise
2) Reactor Cavity

C. 1) lower
2) Primary Vent Pot

D. 1) lower
2) Reactor Cavity

Question: 14

Initial conditions:

- Unit 1 is at 100% power.
- The breaker for 1-SI-MOV-1885C, LHSI Pump "A" Recirc Valve, was found open, and could not be reclosed.
- A Large Break LOCA occurs.

Current conditions:

- The RWST level is 12.5%.
- The Team is currently at 1-ES-1.3, Transfer to Cold Leg Recirculation; step 5, "Align SI System for Recirc".

Which ONE of the following identifies:

- 1) Which LHSI pump(s) will **automatically** align to the RMT mode?
 - 2) Per ES-1.3 CAP, after step 5, the operator will monitor for oscillating LHSI pump amps and flow to check for _____.
- A. 1) Both LHSI pumps.
2) RWST < 3%
- B. 1) ONLY the "B" LHSI pump.
2) sump blockage
- C. 1) Both LHSI pumps.
2) sump blockage
- D. 1) ONLY the "B" LHSI pump.
2) RWST < 3%

Question: 15

A loss of off-site power has resulted in the trip of both Units.

- 120 seconds have elapsed since the reactor trip.

Which ONE of the following identifies the Pressurizer heaters energized on Unit 1?

- A. None.
- B. "E" Group.
- C. "E" and "A" Groups.
- D. "A" Group.

Question: 16

Given the following:

- Unit 1 is at 100%.
- Power Range N-41 fails HIGH.
- 0-AP-53.00, Loss of Vital Instrumentation/Controls, immediate actions completed.
- Crew is presently performing 1-AP-4.00, Nuclear Instrumentation Malfunction, Attachment 1 to place the failed Power range channel in trip.

Which one of the choices below completes the following statements?

- 1) In accordance with 1-AP-4.00, Attachment 1; OP ΔT channel 1 _____ have to be placed in trip.
 - 2) OP ΔT provides protection against _____.
- A. 1) will
2) DNB
- B. 1) will
2) high power density
- C. 1) will not
2) DNB
- D. 1) will not
2) high power density

Question: 17

Initial Conditions:

- Unit 1 is heating up per 1-GOP-1.3, RCS Heatup from 345 °F to HSD following a mid-cycle outage.
- 40,000 gallons were transferred to the RWST from the blender.
- RWST Refrigeration Unit 1A is tagged out for compressor breaker replacement.
- RWST Refrigeration Unit 1B is in operation.
- Annunciator 1A-C7, RWST HI TEMP has alarmed.
- RWST temperature is 42 °F on channel 1 and channel 2; (1-CS-TI-100A and 100B).

Current Conditions (5 min. later)

- Operator reports RWST Refrigeration Unit 1B has a low oil pressure trip and he is unable to reset. Operator requests maintenance support.
- Unit 1 RWST parameters are as follows:

Temp.	Boron
<u>44 °F</u>	<u>2275 ppm</u>

In accordance with Tech Specs 3.3.A.1, RWST; which of the following completes the statement.

With the current conditions the RWST LCO temperature limit is __ (1) __, and the RWST Boron LCO limit is __ (2) __.

- A. 1) met
2) not met
- B. 1) not met
2) met
- C. 1) not met
2) not met
- D. 1) met
2) met

Question: 18

Initial Conditions:

- Unit 1 is at 100% power when a large break LOCA occurs.
- Containment pressure peaks at 45 psia.

Current Conditions:

- The crew is at 1-E-1, Loss of Reactor or Secondary Coolant, step 17 and is attempting to open 1-IA-TV-100.
- The RO reports that Containment pressure is slowly lowering and is as follows:
 - 1-LM-PI-100A 15 psia.
 - 1-LM-PI-100B 15 psia.
 - 1-LM-PI-100C 14 psia.
 - 1-LM-PI-100D 15 psia.
- 1-PI-IA-101, CTMT INST AIR, indicates 25 psig.
- The operator has depressed both CLS Train A (B) RESET buttons.
- SI has been reset.

Which one of the following correctly completes the statements below:

- 1) After depressing both CLS RESET buttons, CLS _____ reset.
- 2) When the operator attempts to open 1-IA-TV-100, the valve will _____.

- A. 1) is 2) remain closed
- B. 1) is not 2) open
- C. 1) is not 2) remain closed
- D. 1) is 2) open

Question: 19

The reactor is operating at 100% power when the following sequence of events occur:

- Initial "D" Bank rod height 225 Steps.
- The RO is performing 1-OPT-RX-005, Control Rod Assembly partial Movement, for "D" Control Bank.
- Annunciator G-A6, Rod Cont Sys Urgent Failure is received when Control Bank "D" begins to move inward.
- Rod Control In-Hold-Out switch placed in Hold.

The following indications are noted by the RO:

- Control Bank "D", Group 1 Step counter indicates 224 Steps.
- Control Bank "D", Group 2 Step counter indicates 222 Steps.
- Control Bank "D", CERPI Group 1 indicates 224 Steps.
- Control Bank "D", CERPI Group 2 indicates 222 Steps.

Which ONE of the following identifies the:

- 1) Power Cabinet affected by the Urgent Failure.
 - 2) The procedure that would need to be entered to mitigate the malfunction.
-
- A. 1) Power Cabinet 1BD.
2) 0-AP-1.00, Rod Control System malfunction.
 - B. 1) Power Cabinet 1BD.
2) 0-AP-1.02, Individual Rod Position Indicators.
 - C. 1) Power Cabinet 2BD.
2) 0-AP-1.00, Rod Control System malfunction.
 - D. 1) Power Cabinet 2BD.
2) 0-AP-1.02, Individual Rod Position Indicators.

Question: 20

With Unit 1 at 100% power, an inadvertent phase III containment isolation occurs. Approximately 15 minutes later, the following RCP temperatures exist:

"A" RCP

- Upper Motor radial bearing 185°F
- RCP lower bearing Seal Water Temp 215°F
- Stator winding 285°F

"C" RCP

- Upper Motor radial bearing 180°F
- RCP lower bearing Seal Water Temp 210°F
- Stator winding 305°F

In order to mitigate these plant conditions, the crew will monitor RCP temperatures using _____(1)_____, then initiate 1-E-0, Reactor Trip or Safety Injection, trip the reactor, and stop _____(2)_____.

- A. 1) 1-AP-15.00, Loss of Component Cooling
2) "C" RCP
- B. 1) 1-AP-15.00, Loss of Component Cooling
2) "A" RCP
- C. 1) 1-AP-9.00, RCP Abnormal Conditions
2) "A" RCP
- D. 1) 1-AP-9.00, RCP Abnormal Conditions
2) "C" RCP

Question: 21

Unit 2 initially operating at 100% power, when the following occurs:

- A LOCA outside of CTMT.
- The Reactor is tripped and Safety Injection actuated.
- The RCPs have been tripped due to low RCS subcooling.
- RVLIS Full Range Indicates 42% and stable.
- RCS T_{HOT} indicates 650 °F and stable.
- CETCs indicate 660 °F and rising.

Which ONE of the following describes:

- 1) The temperature indication used on the Core Cooling Status tree.
- 2) The status of the Core Cooling Status Tree.

A. 1) CETC temperature.
2) Orange.

B. 1) CETC temperature.
2) Red.

C. 1) T_{HOT}.
2) Orange.

D. 1) T_{HOT}.
2) Red.

Question: 22

Unit 2 is performing a Reactor Startup following a forced outage. Shutdown banks are fully withdrawn. During the outage, a substantial amount of work had been performed in the Pressurizer Cubicle in Containment.

Given the following data:

Parameter	Initial Condition	Condition 1 Day later
PRT Level	78%	78%
PRT Pressure	6 psig	6 psig
PRT Temperature	82°F	84°F
Weighted AVG CTMT Temperature	97.2°F	101.5°F
"A" PRZR SV Temperature	129°F	152°F
"B" PRZR SV Temperature	140°F	160°F
"C" PRZR SV Temperature	121°F	149°F
PRZR PORV Temperature	121°F	148°F
Shutdown bank CERPI Indication	No change in CERPI	

Which ONE of the following states the cause for the changes noted between the Initial Conditions and the Conditions found 1 Day later?

- A. Cubicle Ventilation Damper position change.
- B. CRDM Fan Trips.
- C. "B" PRZR SV Leaking.
- D. PRZR PORV leaking.

Question: 23

Initial Conditions:

- Unit 1 at 50% power and ramping up to 100% in accordance with GOP-1.5, Unit Startup, 2% to Max Allowable Power.
- Rod Control in manual due to hunting in automatic.

Current Conditions:

- Median Tave fails to a stable indication of 550 °F.
- No Operator Actions have been taken.

Which ONE of the following states:

- 1) The Pressurizer level control setpoint is _____.
- 2) The automatic charging low flow limit is _____.

A. 1) 24.8%
2) 30 gpm

B. 1) 25.8%
2) 30 gpm

C. 1) 24.8%
2) 25 gpm

D. 1) 25.8%
2) 25 gpm

Question: 24

Unit 2 is operating at 100% power with Chilled CC in service to containment.

- An operator is verifying the Plant Computer System displays and indications are functioning properly using the laptop computer at the Auxiliary Shutdown Panel.
- 2-CD-REF-1, Unit 2 Turbine Building Chiller trips.

Which ONE of the following states:

- 1) Containment partial pressure will _____.
 - 2) Containment saturation temperature is sensed at the _____.
- A. 1) lower
2) Containment air recirculation fan discharge
- B. 1) rise
2) Containment air recirculation fan discharge
- C. 1) rise
2) Containment dome
- D. 1) lower
2) Containment dome

Question: 25

Initial Conditions:

- Unit 1 is in Cold Shutdown, at 190 °F, on RHR, preparing to take the pressurizer solid.
- "A" RHR pump is running with the "A" RHR HX in service.
- "A" CC pump running on Unit 1; "D" CC pump running on Unit 2. CC is cross-tied.

Current Conditions:

- "C" RSST trips and locks out.

Which ONE of the following states:

- 1) The status of "A" RHR pump.
- 2) The _____ CC pump is running on Unit 1, and the _____ CC pump is running on Unit 2.

A. 1) Running.

2) "A"; "D"

B. 1) Tripped.

2) "B"; "C"

C. 1) Running.

2) "B"; "C"

D. 1) Tripped.

2) "A"; "D"

Question: 26

Given the following:

- A Large Break LOCA has occurred on unit 1.
- An operator has been assigned to perform 1-E-0, Reactor Trip or SI; Attachment 4, CLS Component verification.
- When checking the valve lineup the operator notices that the red and green light bulbs for 1-SW-MOV-104A, RSHX A SW INLET are NOT lit.

Which one of the following indications does 1-E-0, Attachment 4 direct the operator use to verify that there is adequate flow through the heat exchanger?

- A. 1-SW-MOV-103A, RS HX A&D SW SUPPLY; and 1-SW-MOV-105A, RSHX A SW OUTLET red lights LIT.
- B. Annunciator 1A-D6, RS HX 1A RAD MON PP NO FLOW is **NOT** LIT.
- C. Flow indication on 1-SW-FI-106A, RS HX A SW Outlet Flow.
- D. 1-SW-P-5A, RS SW Radiation Monitor Sample pump red light is LIT.

Question: 27

Unit 1 is operating at 100% with the following conditions:

- 1-OPT-RC-10.0, Computer leak Rate Program has trended a rise in Unidentified leakage of 0.1 gpm.
- A Containment entry has been performed and the leak has been identified on the "A" SG Primary manway.
- HP has requested the Unit 1 Iodine filter fans, 1-VS-F-3A and 3B, be placed in service.

Which ONE of the following identifies:

- 1) The operator will place the control switch for the Iodine Filter Fans to _____ to start the fans.
 - 2) The Unit 1 Iodine Filter Fans are operated at the U1 Main Control Room _____ panel.
- A. 1) Auto
2) Ventilation
- B. 1) Auto
2) Post Accident Monitoring
- C. 1) On
2) Post Accident Monitoring
- D. 1) On
2) Ventilation

Question: 28

Initial Conditions:

- Unit 1 is at HSD with all RCPs running.
- Preparations for Unit startup are in progress per 1-GOP-1.4, Unit Startup.
- The Master Pressure Controller (MPC) and spray valve controllers are all in auto and set to maintain 2235 psig.
- Pressurizer pressure indicates 2250 psig on 1-RC-PI-1444, and 1-RC-PI-1445.

Current Conditions (60 sec):

- Pressurizer pressure is 2130 psig.
- 1C-B8, PRZR LO PRESS is alarming.
- 1-RC-PC-1444G, PRZR Spray from Loop A, 1-RC-PCV-1455A indicates 100%.
- 1-RC-PC-1444H, PRZR Spray from Loop C, 1-RC-PCV-1455B indicates 0%.
- 1-RC-PC-1444J, PRZR PRESS Master CNTRL, indicates 0%.

Which ONE of the following identifies:

- 1) The POT setting of the Master Pressure Controller for 2235 psig is _____.
 - 2) The expected operator action associated with the failure in accordance with 0-AP-53.00, Loss of Vital Instrumentation/Cont is to place _____ in manual and close the spray valve.
- A. 1) 7.45
2) 1-RC-PC-1444G, PRZR Spray from Loop A, 1-RC-PCV-1455A
- B. 1) 6.68
2) 1-RC-PC-1444G, PRZR Spray from Loop A, 1-RC-PCV-1455A
- C. 1) 7.45
2) 1-RC-PC-1444H, PRZR Spray from Loop C, 1-RC-PCV-1455
- D. 1) 6.68
2) 1-RC-PC-1444H, PRZR Spray from Loop C, 1-RC-PCV-1455

Proposed Question: 29

Given the following:

- Pressurizer level channel transmitter 1-RC-LT-459, Pressurizer Level Protection – Channel I, is the upper channel.
- The reference leg of 1-RC-LT-459 develops a slow leak.

Which ONE of the following describes:

- 1) As a result of the reference leg leak, the level indication on 1-RC-LI-1459 will _____.
- 2) In accordance with 0-AP-53.00, Loss of Vital Instrumentation/Controls, the operator _____ required to isolate letdown for this failure.

A. 1) rise
2) is not

B. 1) rise
2) is

C. 1) lower
2) is not

D. 1) lower
2) is

Question: 30

Initial Conditions:

- Unit 1 operating at 100% power.
- Reactor Trip First-out annunciator Ctmt Hi Press.
- Crew is performing 1-E-0, Reactor Trip or Safety Injection, immediate actions.
- Both reactor trip breakers remain closed after E-0 step 1 performed.

Current Conditions:

- An operator has just been dispatched to open reactor trip breakers per 1-FR-S.1, step 8.
- Gamma-Metrics is reading 20%.
- Power Range NI channels are all reading 15%.
- Containment pressure is 22 psia and rising.

Which of the following completes the statements:

- 1) In accordance with 1-E-0, Reactor Trip or SI, Background; if any reactor trip breaker and associated bypass breaker is open, and neutron flux has decreased to less than 5 %, the reactor _____ considered tripped.
 - 2) In accordance with 1-FR-S.1, Response to Nuclear Generation/ATWS; the instrumentation the crew should be using to monitor neutron flux is _____.
- A. 1) is
2) Power Range NI channels
- B. 1) is not
2) Gamma-Metrics
- C. 1) is
2) Gamma-Metrics
- D. 1) is not
2) Power Range NI channels

Question: 31

Initial Condition:

- Unit 2 Containment pressure has just reached atmospheric.
- The Team is preparing to place Unit 2 Containment on purge using 1-VS-F-58A, in accordance with 2-OP-VS-001, Containment Ventilation.
- The Personnel and Equipment Hatches are closed.

Which ONE of the following completes the following statement?

- 1) An allowable configuration would consist of _____.
- 2) The _____ filter is used in the flowpath.

(REFERENCE PROVIDED)

- A. 1) Containment Purge and Fuel Building Exhaust
2) CAT II
- B. 1) Containment Purge Only
2) CAT I
- C. 1) Containment Purge and Fuel Building Exhaust
2) CAT I
- D. 1) Containment Purge Only
2) CAT II

Question: 32

Given the following:

- Unit 2 is currently stable at 75% power.
- The "B" Feed Reg Valve demand begins to slowly lower due to an instrument failure.
- Annunciator 2H-G6, STM GEN 1B LVL ERROR, is Lit.

Which ONE of the following identifies:

- 1) The effect this will have on the indicated power by Instantaneous Calorimetric.
- 2) The procedure used to respond to this event.

- A. 1) Lowers.
2) 2-AP-21.00, Loss of Main Feedwater Flow.
- B. 1) Rises.
2) 2-AP-21.00, Loss of Main Feedwater Flow.
- C. 1) Lowers.
2) 0-AP-53.00, Loss of Vital Instrumentation/Controls.
- D. 1) Rises.
2) 0-AP-53.00, Loss of Vital Instrumentation/Controls.

Question: 33

The Operating Team is in E-3, Steam Generator Tube Rupture and has completed RCS cooldown and depressurization. CHG pump suction has been aligned to the VCT.

The following Unit conditions exist:

- PRZR level is 35% and slowly rising.
- S/G levels are as follows:
 - 'A' S/G is 68% and lowering.
 - 'B' S/G is 33% and rising.
 - 'C' S/G is 32% and rising.
- RCS pressure is 985 psig.
- S/G pressures are as follow:
 - 'A' S/G is 1000 psig and lowering.
 - 'B' S/G is 670 psig and rising.
 - 'C' S/G is 650 psig and rising.

Which ONE of the following is the MINIMUM actions required to be taken by the Operating Team in accordance with step 36 of E-3?

(REFERENCE PROVIDED)

- A. Depressurize RCS and raise CHG flow.
- B. Lower CHG flow and depressurize the RCS.
- C. Turn on PRZR heaters.
- D. Raise CHG flow.

Question: 34

Given the following:

- Unit 1 is at 100 % power.
- A complete separation of the Main steamline piping upstream of the MSR Steam Supply to the A & C MSRs (30" pipe) occurs.

Which ONE of the following describes the effect this will have on the...

- 1) Main Feed pumps.
- 2) Main Steam Trip valves.

A. 1) Remain running.
2) Remain open.

B. 1) Trip.
2) Remain open.

C. 1) Remain running.
2) Close.

D. 1) Trip.
2) Close.

Question: 35

Initial Conditions:

Unit 1 operating at 100% power.

- "A" Steam line in Unit 1 alleyway ruptures.
- Station Service buses are lost on swap-over to Reserve Station Service Transformers following a manual reactor trip.
- Individual MSTV close switches on Benchboard fail to operate.
- MSTV Emergency close switch on Vertical Board fails to close the MSTVs.

Which one of the following states:

- 1) The redundant MSTV Emergency Close Switch, is located on the Appendix 'R' panel in _____.
- 2) Operation of this switch _____ the MSTV close SOVs.
 - A. 1) Unit 1 ESGR
2) Energizes
 - B. 1) Unit 1 ESGR
2) Deenergizes
 - C. 1) Unit 2 ESGR
2) Energizes
 - D. 1) Unit 2 ESGR
2) Deenergizes

Question: 36

Unit 1 is placing the Unit on-line in accordance with 1-OP-TM-001, Turbine - Generator Startup to 20% - 25% Turbine Power.

- Steam Dumps are in Auto in steam pressure mode.
- Reactor Power has been raised to 8%.
- P-7 NIS POWER RANGE AND TURBINE POWER < 10% is LIT.
- When the second Generator output breaker, OCB-G1T240 is closed, Annunciator 1F-E1, GEN BACKUP LOCKOUT REL TRIP, comes in due to a fault.

Which one of the following correctly describes the effect this will have on:

- 1) The reactor.
- 2) Main Generator output breakers.

Reactor

Main Gen output breakers

- | | |
|-------------|----------------------------|
| A. trip | trip open after 30 seconds |
| B. not trip | trip open after 30 seconds |
| C. trip | trip open immediately |
| D. not trip | trip open immediately |

Proposed Question: 37

Initial Conditions:

- The team was performing 1-E-0 in response to a faulted steam generator outside containment.
- Upon transition from 1-E-0, the STA reported a red path on HEAT SINK.
- The team has entered 1-FR-H.1, Loss of Secondary Heat Sink.

Current Conditions

- SG levels are A- 0% WR, B- 13% WR, C- 14% WR (all lowering).
- RCS Thot – 640°F and rising.
- Pressurizer level – 80% and rising
- Pressurizer pressure – 2345 psig and rising.
- 1-RC-PCV-1455C was cycling open/close and is now open.

Which ONE of the following states:

- 1) In accordance with 1-FR-H.1, Continuous Actions Page, RCS Bleed and Feed ____ required.
 - 2) What is the reason for the Pressurizer PORV remaining open?
- A. 1) is not
2) RCS expansion due to Loss of Heat sink.
- B. 1) is
2) Pressurizer fill due to safety injection.
- C. 1) is
2) RCS expansion due to Loss of Heat sink.
- D. 1) is not
2) Pressurizer fill due to safety injection.

Question: 38

Initial Conditions:

- Unit 1 operating at 100% power.
- A SGTR occurs on the "A" SG, the reactor is tripped and safety injection actuated.
- The Team has completed the Rapid Cooldown of 1-E-3, Steam Generator Tube Rupture.
- The Air Ejector discharge has been re-aligned to Containment.

Current Conditions:

- The "A" SG faults inside of Containment.
- Hi and Hi-Hi CLS have actuated.

Which ONE of the following states:

- 1) The position of 1-SV-TV-102A, AE DISCH TO CTMT SFGD TV, is _____.
- 2) The position of 1-SV-TV-102, AE DISCH TO CTMT TB TV, is _____.

- A. 1) open
2) open
- B. 1) closed
2) closed
- C. 1) closed
2) open
- D. 1) open
2) closed

Question: 39

ECA-0.0, Loss of all AC Power, Step 24, directs the operator to:

“Depressurize all Intact SGs to 300 psig”

Which ONE of the following describes the reason for stopping the pressure reduction at 300 psig?

- A. Prevent losing pressurizer level.
- B. Minimize inventory loss out of RCP seals.
- C. Prevent voiding in the Reactor Vessel upper head.
- D. Prevent SI Accumulator Nitrogen into the RCS.

Question: 40

Initial Conditions:

- Unit 1 at 100%
- A transient causes the following annunciators to alarm:
 - 1K-B8, UPS SYSTEM 1B TROUBLE.
 - 1C-B1, RCP 1B CC RETURN LO FLOW.
 - 1E-G4, RX TRIP CH-2 PRZR LO PRESS.

Current Conditions:

- The non-licensed operator dispatched reports the red INVERTER SUPPLYING LOAD light is NOT lit for UPS 1B-1.
- Indication on 1-FW-FCV-1488 (B FRV Controller) is:
 - Auto Light – NOT LIT.
 - Manual Light – NOT LIT.
- The control room team is currently performing actions per 1K-B8, UPS System 1B Trouble.

Which one of the following describes:

- 1) "B" S/G feed flow _____ be controlled by using the pushbuttons on the FRV controller.
- 2) The Abnormal Procedure that should be utilized is _____.

- A. 1) can not
2) 1-AP-10.04, Loss of Vital Bus IV
- B. 1) can
2) 1-AP-10.02, Loss of Vital Bus II
- C. 1) can not
2) 1-AP-10.02, Loss of Vital Bus II
- D. 1) can
2) 1-AP-10.04, Loss of Vital Bus IV

Question: 41

Which ONE of the following breakers, if open, will cause a Vital Bus UPS Static Switch to shift to the alternate source?

- A. Battery Charger AC Input.
- B. Battery Charger DC Output.
- C. Inverter DC Input.
- D. Battery Bus DC Input.

Question: 42

Unit 1 is currently at 60% power and is performing a startup.

1-FW-P-1B, "B" Main Feed Pump, is running.

Shortly after starting 1-FW-P-1A, "A" Main Feed Pump, the operator observes the Main Feed Pump tripping.

Which ONE of the following conditions could have caused 1-FW-P-1A, "A" Main Feed Pump to trip?

- A. Feed pump Lube oil pressure at 8 psig.
- B. 'C' Station Service Bus voltage at 68%.
- C. Feed flow < 3000 gpm and Recirc valve, 1-FW-FCV-150A not fully open.
- D. Feed pump Suction pressure at 430 psig.

Question: 43

Given the following:

Power from the associated rack in the relay room, to the "A" FRV controller, 1-FW-FCV-1478 is lost.

With the conditions stated, which of the following answers the questions listed below:

- 1) What is the effect on the output of the controller?
 - 2) Can this controller be controlled from the Main Control Room?
-
- A. 1) Shift to manual and output will remain the same as prior to loss of power.
2) Yes.
 - B. 1) The output of the controller will raise to 100% demand.
2) Yes.
 - B. 1) The output of the controller will raise to 100% demand.
2) No.
 - D. 1) Shift to manual and output will remain the same as prior to loss of power.
2) No.

Question: 44

Given the following:

- An accidental gaseous radwaste release has occurred in the Waste Gas Decay Tank Room.
- A Site Area Emergency has been declared due to dose at the site boundary of 200 mRem/hr.
- Radiation protection has determined that radiation dose level in the room is 1,000 mRem/hr.

A Surry Power Station worker assigned to enter the room has a current year-to-date TEDE of 700 mRem.

The MAXIMUM total time the worker is allowed RCA access, to perform the work, with NO extensions is _____ hour(s)?

- A. 0.50
- B. 1.00
- C. 1.85
- D. 2.30

Question: 45

The team is performing 1-E-0, Reactor Trip or Safety Injection, with plant conditions as follows:

- Containment pressure is 27 psia and rising slowly.
- "A" S/G parameters
 - Pressure- 650 psig and lowering slowly.
 - Level- 57% WR and lowering slowly.
- "B" S/G parameters
 - Pressure 120 psig and lowering rapidly.
 - Level- 15% WR and lowering rapidly.
- "C" S/G parameters
 - Pressure 630 psig and lowering slowly.
 - Level- 56% WR and lowering slowly.
- Pressurizer level 0%.
- Pressurizer pressure 1200 psig and lowering.
- RCS Tave- 512 °F and lowering at a rate of 120 °F/hr.

Which ONE of the following states the minimum required AFW flow to the S/Gs in accordance with E-0, Reactor Trip or Safety Injection, Attachment 8?

- A. "A" S/G- 100 gpm; "B" S/G- 100 gpm; "C" S/G-100 gpm.
- B. "A" S/G- 175 gpm; "B" S/G- 0 gpm; "C" S/G- 175 gpm.
- C. "A" S/G- 60 gpm; "B" S/G- 60 gpm; "C" S/G- 60 gpm.
- D. "A" S/G- 225 gpm; "B" S/G- 0 gpm; "C" S/G- 225 gpm.

Question: 46

In accordance with 1-AP-21.01, Response to AFW Check Valve Backleakage, which ONE of the following identifies:

- 1) The temperature on an AFW pump casing where the pump is considered vapor bound.
 - 2) Which of the AFW pumps is aligned and cooled FIRST if all AFW pumps are found to be vapor bound?
-
- A. 1) 200°F.
2) Motor Driven.

 - B. 1) 200°F.
2) Turbine Driven.

 - C. 1) 165°F.
2) Motor Driven.

 - D. 1) 165°F.
2) Turbine Driven.

Question: 47

Initial Conditions:

Unit 1 "A" DC Bus is lost due to a fault, causing a reactor trip.

Current Conditions: (11 minutes following the reactor trip)

A Large Break LOCA occurs on Unit 1.

The Team decides to locally start 1-CS-P-1A, "A" CS Pump.

Which ONE of the following identifies:

- 1) The "red" breaker position indicating light _____ be used by the control room team to identify that 1-CS-P-1A has been successfully started.
 - 2) 1-CS-P-1A breaker, 1-EP-BKR-14H5, _____ have overcurrent trip protection.
- A. 1) can
2) does not
- B. 1) can
2) does
- C. 1) can not
2) does
- D. 1) can not
2) does not

Question: 48

Initial Conditions:

- Unit 1 is operating at 100%.
- 1-SW-P-10A, CHG PUMP SW PUMP, is running in HAND, 1-SW-P-10B, CHG PUMP SW PUMP is in Auto.
- 1-CH-P-1C, CHARGING PUMP is running.
- 1D-G5, SW OR CC PPS DISCH TO CHG PPS LO PRESS has just alarmed.

Current Conditions:

- Reactor Operator reports the following:
 - 1-SW-P-10A has tripped, and 1-SW-P-10B remains in standby.
 - Highest reading Charging pump bearing temperature is 179°F and rising.

Which ONE of the following describes:

- 1) The Reactor Operator can monitor Charging pump SW flow on the _____.
- 2) 0-AP-12.00, Service Water Abnormal, states that the affected Charging pump should be secured once bearing temperature exceeds a minimum of _____.

- A. 1) Vertical board 2) 195°F
- B. 1) PCS 2) 185°F
- C. 1) PCS 2) 195°F
- D. 1) Vertical board 2) 185°F

Question: 49

Given the following conditions:

- Unit 1 tripped from 100% power due to loss of on-site and off-site power.
- The team is performing 1-ECA-0.0, Loss of all AC Power.
- The AAC EDG has not been loaded on an emergency bus.

Which ONE of the following identifies:

- 1) The power source for Unit 1 Annunciator System is _____.
 - 2) The Black Battery supplies the _____.
-
- A. 1) "A" Station Battery
2) Seal Oil Backup Pump
 - B. 1) "B" Station Battery
2) Emergency Oil Pump
 - C. 1) "A" Station Battery
2) Emergency Oil Pump
 - D. 1) "B" Station Battery
2) Seal Oil Backup Pump

Question: 50

Which one of the following supplies the DC control power to #1 EDG output breaker, 1-EP-BKR-15H3?

- A. "A" DC bus.
- B. "B" DC bus.
- C. Black battery DC bus.
- D. #1 EDG DC system.

Question: 51

- 0-VSP-C8, Fire Detected, has alarmed with Unit 1 ESGR indicated on the fire display panel.
- The BOP has dispatched an operator to investigate Unit 1 ESGR for a fire.

Which ONE of the following identifies:

- 1) The maximum time limit for the operator to report fire status.
- 2) The reason for this time limit in accordance with 0-VSP-C8.

A. 1) 5 minutes.
2) Ensure adequate time for EAL classification and transmission, if required.

B. 1) 5 minutes.
2) Prompt response is necessary to prevent significant damage.

C. 1) 3 minutes.
2) Ensure adequate time for EAL classification and transmission, if required.

D. 1) 3 minutes.
2) Prompt response is necessary to prevent significant damage.

Question: 52

Initial Conditions

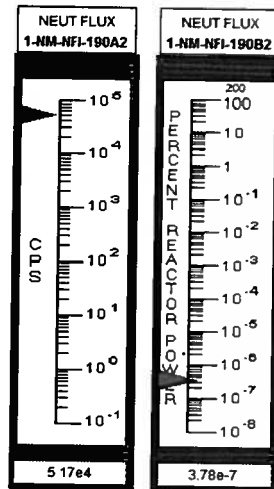
- Both units at 100% power.
- The Control Room is evacuated due to a Limiting Main Control Room Fire.
- All actions per 0-FCA-001, Limiting MCR Fire were taken prior to evacuation.

Current Conditions (20 minutes later)

- Operator dispatched to perform 0-FCA-11.0, Remote Monitoring.
- Operator reports that Unit 1, Neutron flux indicators are reading as shown below:

Operator reports the following additional information:

- 1-NM-NFI-190A2 has been steady at present value for last 5 minutes.
- 1-NM-NFI-190B2 has lowered from 1×10^{-5} to present value over last 5 minutes.



Unit Supervisor directs the operator to switch 1-NM-NFI-190A & B to the alternate power supply using the Appendix R switch.

Which of the following describes:

- 1) The Nuclear Instrument indication at the Remote Monitoring panel _____ as expected.
 - 2) The location of the alternate power App R switch for 1-NM-NFI-190A & B is located in the _____.
- A. 1) is not
2) Cable Tray Room Unit 2
- B. 1) is
2) Cable Tray Room Unit 2
- C. 1) is not
2) Emergency Switchgear Room Unit 2
- D. 1) is
2) Emergency Switchgear Room Unit 2

Question: 53

Both Units are operating at 100% power.

Which ONE of the following water sources is collected directly into the High/Low Level Liquid Waste Tanks prior to transfer to the SRF?

- A. Laundry Drains.
- B. Contaminated Drain Tank.
- C. Auxiliary Building sump pump discharge.
- D. VCT Drain.

Question: 54

Given the following:

- Unit 1 is at 100%, Unit 2 is in a Refueling Shutdown.
- 1-GW-RM-130A, Rad Monitor Process Vent Particulate indication spiked high causing the following alarms:
 - 0-RMA-C5, Process Vent Rad Mon Trbl.
 - 0-RMA-C6, Process Vent Part Alert / Hi.

Which ONE of the following describes the automatic plant response?

- A. 1-IA-TV-101A, and 1-IA-TV-101B, Unit 1 Containment Instrument Air compressor suction will swap to outside air.
- B. 1-CV-P-1A, and 1-CV-P-1B, Unit 1 Containment vacuum pumps will trip.
- C. 1-SV-TV-103, Air Ejector Discharge to Vent-Vent Trip valve will automatically close.
- D. 1-GW-FCV-160, Unit 1 vacuum pump discharge valve, will automatically close.

Question: 55

Unit 2 is shutdown and has been borated to CSD boron concentration in preparation for Cooldown to CSD for a Refueling outage.

Chemistry has notified the Team that the RCS crud burst has been initiated.

Which ONE of the following describes:

- 1) The FIRST Radiation monitor that will detect the increased RCS Activity caused by the crud burst.
 - 2) Which CVCS filter is monitored for differential pressure during the crud burst cleanup?
-
- A. 1) Letdown Radiation monitor.
2) Reactor Coolant filter.
 - B. 1) Letdown Radiation Monitor.
2) Letdown filter.
 - C. 1) Auxiliary Building Control Area Radiation Monitor.
2) Reactor Coolant filter.
 - D. 1) Auxiliary Building Control Area Radiation Monitor.
2) Letdown filter.

Question: 56

Given the following:

- Unit 1 and Unit 2 are both operating at 100%.
- You are preparing for a Performance Test of Charging Pump SW pump, 1-SW-P-10A Appendix R controls.
- An operator needs to be stationed locally at 1-SW-P-10A to observe the pump, and a second operator at the Appendix R controls for 1-SW-P-10A to start and stop the pump.

The Charging Pump SW pump, 1-SW-P-10A is located inside ___(1)___, and the Appendix R controls for 1-SW-P-10A are located inside Unit 1___(2)___ room.

- A. 1) MER 4 2) Emergency Switchgear
- B. 1) MER 4 2) Cable Vault
- C. 1) MER 3 2) Cable Vault
- D. 1) MER 3 2) Emergency Switchgear

Question: 57

Which ONE of the following states:

- 1) The minimum canal level per Tech Spec 3.14, Circulation and Service Water Systems.
- 2) The channel coincidence required to cause BC SW isolation?

A. 1) 23.5 feet.
2) 2/4 Channel.

B. 1) 23.5 feet.
2) 3/4 Channels.

C. 1) 23.0 feet.
2) 2/4 Channels.

D. 1) 23.0 feet
2) 3/4 Channels.

Question: 58

A severe thunderstorm has caused perturbations on the grid. 0-AP-10.18 has been entered due to grid instabilities

Initial Conditions:

- Unit 1 is at 100% power, Unit 2 is shutdown.
- The 'A' and 'B' Voltage regulators are in AUTO.
- The 'A' Voltage Regulator is in service.
- Power System Stabilizer (PSS) is in service.
- 55 MVARs Out.

Current Conditions:

- The Operator reports a large rise in MVARs (Out).
- The following Annunciators have just alarmed:
 - 1J-A8, OVEREXCITATION LIMIT.
 - 1J-B7, VREG CHANNEL A LOCAL ALARM.

Which of the following occurs if the 'A' Voltage Regulator is unable to lower Generator voltage in its current mode?

- A. 'A' Voltage Regulator will shift to the V/Hz mode to control voltage. The 'B' channel will remain in standby.
- B. 'A' Voltage Regulator will trip into Emergency Manual. The 'B' channel will automatically assume control.
- C. 'A' Voltage Regulator will trip into Emergency Manual to control voltage. The 'B' channel will remain in standby.
- D. 'A' Voltage Regulator will shift to the V/Hz mode to control voltage. The 'B' channel automatically assume control.

Question: 59

Which ONE of the following describes the operation of Instrument Air compressor 1-IA-C-1 when in AUTO?

- A. Compressor will start and LOAD when pressure drops to 90 psig.
Compressor will then UNLOAD and LOAD at 105 psig and 95 psig, respectively.
- B. Compressor will start and LOAD when pressure drops to 95 psig.
Compressor will then UNLOAD and LOAD at 105 psig and 95 psig, respectively.
- C. Compressor will start and LOAD when pressure drops to 100 psig.
Compressor will then UNLOAD and LOAD at 110 psig and 100 psig, respectively.
- D. Compressor will start and LOAD when pressure drops to 90 psig.
Compressor will then UNLOAD and LOAD at 110 psig and 100 psig, respectively.

Question: 60

Initial Conditions:

- Unit 1 was operating at 100%.
- Auto Reactor Trip and SI initiation occurs due to Large Break LOCA.
- Containment pressure peaks at 45 psia.

Current Conditions:

- RWST level has just reached 60% one minute ago and is lowering.
- Containment pressure is 22 psia and lowering.

Which ONE of the following describes:

- 1) The status of Recirc Spray pumps.
 - 2) The minimum number of Containment Spray and Recirc Spray pumps needed to cool and depressurize the containment to < 1 psig in < 60 minutes following a Design Basis LOCA.
-
- A. 1) Both Outside Recirc Spray pumps are running, Inside Recirc Spray pumps are off.
2) One Containment Spray pump and two Recirculation Spray pumps.
 - B. 1) Both Inside Recirc Spray pumps are running, Outside Recirc Spray pumps are off.
2) One Containment Spray pump and two Recirculation Spray pumps.
 - C. 1) Both Outside Recirc Spray pumps are running, Inside Recirc Spray pumps are off.
2) One Containment Spray pump and one Recirculation Spray pump.
 - D. 1) Both Inside Recirc Spray pumps are running, Outside Recirc Spray pumps are off.
2) One Containment Spray pump and one Recirculation Spray pump.

Question: 61

The reactor is starting up following a refueling outage, in accordance with 1-GOP-1.8. Unit Startup, HSD to Max Allowable Power.

Which ONE of the following identifies:

- 1) The flowpath used when diluting to critical in accordance with 1-OP-CH-007, Blender Operations.
- 2) The method used to stabilize reactor power at 10^{-8} amps.

- A.
 - 1) Dilute to the VCT Inlet.
 - 2) Boration / Dilution.
- B.
 - 1) Dilute to the VCT Inlet.
 - 2) Rods.
- C.
 - 1) Alternate dilute to CH pump suction.
 - 2) Boration / Dilution.
- D.
 - 1) Alternate dilute to CH pump suction.
 - 2) Rods.

Question: 62

Given the following conditions:

- Unit 1 is at 12% power.
- The team is currently performing 1-GOP-1.8, Unit Startup, and are checking trip status lights in preparation for blocking Intermediate Range and Power-Range (LO Setpoint) trips.
- The team depresses Intermediate-Range and Power-Range (LO Setpoint) Block pushbuttons.
- Trip Status lights are as follows:

Light #	Noun name	As-found	Required
A3	P-10 NIS PWR RGE > 10%	LIT	LIT
C1	NIS PWR RNG LO SP TRIP BLOCKED	NOT LIT	LIT

- The team notes that status light C1 is in wrong state, checks bulb and finds bulb is good.

Which ONE of the following describes how the plant will respond **if** the team continues to raise power.

- 1) At what power will the reactor trip?
- 2) What is the coincidence for the reactor trip?

- A. 1) 35%. 2) 1/4.
- B. 1) 23%. 2) 2/4.
- C. 1) 23%. 2) 1/4.
- D. 1) 35%. 2) 2/4.

Question: 63

An Operator has been briefed and sent to perform 1-OPT-FW-001, Motor Driven Aux Feedwater Pump 1-FW-P-3A. While placing 1-FW-P-3A in the proper lineup for the test, a typographical error for a valve mark number is discovered.

Which ONE of the following completes the following statement regarding the actions to be performed in accordance with AD-AA-100, Technical Procedure Process Control, to address the issue?

After making a pen and ink change, the Operator ___(1)___ required to have a supervisor initial and date the correction before proceeding. After completing the OPT, a procedure change request (FIP) ___(2)___ required to be processed.

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

Question: 64

Unit 1 is currently Shutdown, and making preparations to perform 1-OPT-ZZ-001, ESF Actuation with Undervoltage and Degraded Voltage – 1H Bus. This procedure is an ICCE category III.

In accordance with OP-AA-106, Infrequently Conducted or Complex Evolutions, select the answer that correctly completes the following statements.

- 1) Specific criteria for terminating the test and contingency plans for unexpected occurrences _____ required per Attachment 2 of OP-AA-106.
- 2) The _____ is specifically responsible for the safe operation of the station during performance of the test.

- A. 1) is
2) Senior Operations Manager
- B. 1) is not
2) Shift Manager
- C. 1) is not
2) Senior Operations Manager
- D. 1) is
2) Shift Manager

Question: 65

Given the following:

- Unit 1 is operating at 100% power.
- A Subatmospheric Containment Entry is to be made in accordance with VPAP-0106, to identify the source of a step change in Unidentified leakage of +0.4 gpm.
- The Shift Manager has entered Action Level 3 for RCS leakage and has notified the OMOC.

Which ONE of the following identifies:

- 1) The minimum level of authority for the containment entry is ____ (1) ____.
- 2) The HP Shift Supervisor or designee must __ (2) __.

- A. (1) Plant Manager
(2) Sign on to the In-Core Detector tagout
- B. (1) Plant Manager
(2) Verify In-Core Detectors in storage location
- C. (1) Director, Nuclear Safety and Licensing
(2) Sign on to the In-Core Detector tagout
- D. (1) Director, Nuclear Safety and Licensing
(2) Verify In-Core Detectors in storage location

Question: 66

Initial Conditions:

- Unit 1 is in a refueling outage.
- Fuel off-load is in progress.

Current Conditions:

- A report is received that a fuel assembly being removed from the core was significantly damaged while lifting it from the core.
- Large Bubbles were seen escaping from the damaged fuel assembly.
- NO radiation alarms have been received.

Which ONE of the following describes the actions required by 0-AP-22.00, Fuel Handling Abnormal Conditions:

- 1) Closing 1-VS-MOD-103A and 1-VS-MOD-103C will secure _____.
 - 2) Is Containment Evacuation required?
-
- A. 1) 1-VS-F-15, MCR Exhaust
2) Yes.
 - B. 1) 1-VS-AC-4, MCR Supply
2) No.
 - C. 1) 1-VS-AC-4, MCR Supply
2) Yes.
 - D. 1) 1-VS-F-15, MCR Exhaust
2) No.

Question: 67

Which ONE of the choices below completes the following statement?

The Federal Dose limit for Lens of the Eye is _____ per year.

- A. 15 Rem
- B. 1.5 Rem
- C. 5.0 Rem
- D. 50 Rem

Question: 68

Which of the following Critical Safety Function RED paths is the highest priority CSF that can be directly caused by procedurally directed operator action?

- A. Subcriticality.
- B. Core Cooling.
- C. Heat Sink.
- D. Containment.

Question: 69

The Station has just upgraded from an Alert to a Site Area Emergency.

Which ONE of the following actions is required for a Site Area Emergency *in addition* to those actions initiated for the Alert?

- A. Off-Site monitoring Team Dispatched.
- B. Emergency Response Personnel called in.
- C. A "Report of Radiological Conditions to the State" is transmitted.
- D. Accountability is performed.

Question: 70

Given the following:

- 0800: A large break LOCA occurred.
- 0810: A Site Area Emergency was declared.

In accordance with EPIP-2.01, when obtaining meteorological data from the MET panel:

- 1) The preferred source for wind speed, and wind direction is the Main Tower ____ (1) ____.
- 2) The "required" Notification completion time is recorded following roll call after reading Item ____ (2) ____.

- A. 1) Lower Level
2) 11, Additional Information
- B. 1) Lower Level
2) 1, Emergency Classification
- C. 1) Upper Level
2) 11, Additional Information
- D. 1) Upper Level
2) 1, Emergency Classification

Question: 71

Initial Conditions:

- Unit 2 operating at 100% power.
- A LOCA has occurred in Unit 2 Safeguards.
- Unit 2 is tripped and safety injection actuated.
- 2-SI-MOV-2890C, LHSI to Cold Legs, has been closed.
- RCS Pressure is 1005 psig and rising.
- The Team has transitioned to 2-E-1, Loss of Reactor or Secondary Coolant.

In accordance with 2-E-1, Loss of Reactor or Secondary Coolant, which ONE of the following identifies:

- 1) The status of the LHSI pumps.
 - 2) The position of the LHSI Suction Valves from the RWST, 2-SI-MOV-2862A and B.
-
- A. 1) Secured in PTL.
2) Closed.
 - B. 1) Secured in AUTO.
2) Closed.
 - C. 1) Secured in PTL.
2) Open.
 - D. 1) Secured in AUTO.
2) Open.

Question: 72

Given the following:

- Unit 1 was operating at 100% when a large break LOCA occurred.
- RCS pressure is 25 psig.
- All ECCS equipment responded as designed.
- The crew is performing step 4 of 1-E-1, Loss of Reactor or Secondary coolant.
- The STA reports that red path for Integrity is satisfied and recommends FR-P.1.

Which of the following describes:

- 1) The actions the crew would take in response to the Integrity Red path.
 - 2) The reason these actions are taken.
-
- A. 1) Go to FR-P.1, and after step 1 return to 1-E-1.
2) Steam Generators are thermally disconnected from the RCS.
 - B. 1) Go to FR-P.1, and after step 1 return to 1-E-1.
2) Pressurized thermal shock is not a concern.
 - C. 1) Do not enter FR-P.1, continue in 1-E-1 until directed to transition.
2) Steam Generators are thermally disconnected from the RCS.
 - D. 1) Do not enter FR-P.1, continue in 1-E-1 until directed to transition.
2) Pressurized thermal shock is not a concern.

Question: 74

Given the following:

- A Large Break LOCA has occurred.
- Crew is presently performing step 3 of ES-1.3
- RWST level is at 14%.

Which of the following completes the following statements.

- 1) Auto Swapover to RMT will occur when _____ RWST level transmitters reach 13.5%.
- 2) In accordance with 1-ES-1.3, Transfer to Cold Leg Recirculation, step 5; IF RMT fails to automatically actuate the RO manually initiates RMT by depressing _____ pushbuttons for each train.

A. 1) 2 of 4
2) 2 of 2

B. 1) 3 of 4
2) 2 of 2

C. 1) 3 of 4
2) 1 of 2

D. 1) 2 of 4
2) 1 of 2

Question: 75

Initial Conditions:

- Both Units are operating at 100% power.
- A seismic event occurs which results in a Loss of Offsite Power and an automatic Reactor Trip on both Units.

Current Conditions:

- The Team has transitioned from 1-E-0, Reactor Trip or Safety Injection to 1-ES-0.1, Reactor Trip Response.
- The STA reports that Containment Sump Level is 7.8 feet and rising.

Which ONE of the following identifies:

- 1) The Abnormal Procedure initiated by 1-E-0 Immediate Actions.
- 2) The PATH COLOR in effect on the Containment Status Tree.

- A. 1) 0-AP-37.00, Seismic Event.
2) Red.
- B. 1) 0-AP-37.00, Seismic Event.
2) Orange.
- C. 1) 1-AP-10.07, Loss of Unit 1 Power.
2) Red.
- D. 1) 1-AP-10.07, Loss of Unit 1 Power.
2) Orange.

RO EXAM
LIST OF ATTACHMENTS

Attachment #	Attachment Description
1	Containment Ventilation
2	E-3 Table

2015 NRC ANSWER KEY

Question #	Answer		Question #	Answer	
RO					
1	B		41	C	
2	A		42	C	
3	A		43	A	
4	A		44	B	
5	B		45	D	
6	D		46	B	
7	A		47	C	
8	B		48	B	
9	B		49	C	
10	D		50	A	
11	B		51	B	
12	C		52	C	
13	D		53	C	
14	C		54	D	
15	A		55	A	
16	B		56	A	
17	A		57	D	
18	C		58	B	
19	A		59	D	
20	D		60	B	
21	A		61	D	
22	A		62	B	
23	D		63	A	
24	A		64	D	
25	B		65	C	
26	C		66	C	
27	D		67	A	
28	B		68	C	
29	A		69	A	
30	C		70	B	
31	C		71	A	
32	C		72	B	
33	C		73	A	
34	D		74	A	
35	A		75	D	
36	D				
37	C				
38	B				
39	D				
40	C				