

U.S. Nuclear Regulatory Commission

Site-Specific RO Written Examination

Applicant Information

Name:

Date:

Facility/Unit:

Region: I II III IV Reactor Type: W CE BW GE

Start Time:

Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination, you must achieve a final grade of at least 80.00 percent. Examination papers will be collected 6 hours after the examination begins.

Applicant Certification

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

Applicant's Signature

Results

Examination Value _____ Points

Applicant's Score _____ Points

Applicant's Grade _____ Percent

ILC-11-1 NRC Exam

1. Given the following plant conditions:

- The Plant is at 100% RTP.
- The reactor trips due to a RCS low flow condition.
- Generator lockout occurs immediately.
- Approximately 5 seconds after the generator lockout a fault on 4KV Bus 4 causes voltage on 480V Bus E-2 to drop to 290 VAC.
- Approximately 7 seconds after the generator lockout breaker 52/19, 4KV BUS 3-4 TIE BKR, trips open on overcurrent.

Which ONE (1) of the following identifies the current alignment of the Emergency buses?

- A. 480V Bus E-1 is being powered via "A" EDG.
480V Bus E-2 is being powered via 4KV Bus 3.
- B. 480V Bus E-1 is being powered via 4KV Bus 2.
480V Bus E-2 is being powered via 4KV Bus 3.
- C. 480V Bus E-1 is being powered via "A" EDG.
480V Bus E-2 is being powered via "B" EDG.
- D. 480V Bus E-1 is being powered via 4KV Bus 2.
480V Bus E-2 is being powered via "B" EDG.

2. Given the following plant conditions:

- The plant is in Mode 5.
- RCS Temperature: 170°F and stable.
- RCS Pressure: 350 psig and stable.

Subsequently a loss of MCC-6 occurs resulting in the following:

- PT-501, PZR Pressure, fails low.

Which ONE (1) of the following actions are required IAW AOP-020, Loss of Residual Heat Removal (Shutdown Cooling)?

- A. Close PCV-455C using its RTGB control switch.
- B. Close RC-536, PORV Block Valve, using the RTGB control switch.
- C. Place the associated LTOPP Arming Switch to the Normal position.
- D. Take Manual Control of PC-444J and Reduce the Controller Output to Zero.

3. Given the following plant conditions:

- LOCA occurred inside containment.
- The crew is currently implementing PATH-1.
- Containment pressure peaked at 9.5 psig and is currently at 4.2 psig and slowly lowering.
- Core Exit T/Cs indicate 510°F and rising.
- RCS pressure is 1100 psig and lowering.
- Safety injection flow to the core is 500 gpm and steady.

Which ONE (1) of the following completes the statement below?

Based on these plant conditions, the Reactor Coolant Pumps will _____.

- A. be secured due to inadequate subcooling.
- B. NOT be secured due to adequate subcooling.
- C. be secured due to loss of component cooling flow.
- D. NOT be secured due to lower than expected SI flow.

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4. Which ONE (1) of the following describes reflux cooling?

Steam produced in the core rises in the hot legs to the S/Gs where it is condensed and returned to the vessel via the (1) legs and to enhance this method of cooling, (2).

A. (1) cold

(2) S/G levels must be maintained.

B. (1) cold

(2) maintain S/G pressure higher than RCS pressure.

C. (1) hot

(2) S/G levels must be maintained.

D. (1) hot

(2) maintain S/G pressure higher than RCS pressure.

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5. The plant is at 25% RTP with GP-005, Power Operation, power ascension in progress when the "A" RCP trips on overcurrent.

Which ONE (1) of the following identifies the effect on Main Feedwater to the S/Gs from steady-state to steady-state conditions?

Feedwater flow...

- A. to S/G "A" rises. Feedwater flow to S/Gs "B" and "C" lowers.
- B. to S/G "A" lowers. Feedwater flow to S/Gs "B" and "C" rises.
- C. lowers to all S/Gs.
- D. remains constant.

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6. The plant is at 10% RTP with GP-005, Power Operation, power ascension in progress when the following occurs:

- Annunciator APP-001-D2, RCP #1 SEAL LEAKOFF HI FLOW, alarms.
- The RO reports #1 seal leakoff is 5.8 gpm for RCP "A", and #1 seal leakoff for RCP "B" and RCP "C" has lowered from 3.0 to 2.0 gpm.

Which ONE (1) of the following identifies the required operator actions and proper sequence IAW AOP-018, Reactor Coolant Pump Abnormal Conditions?

A. Trip the reactor and then stop RCP "A".

Go to PATH-1 while continuing with AOP-018 and then shut the #1 seal leakoff isolation valve within 3 to 5 minutes.

B. Trip the reactor and then stop RCP "A".

Go to PATH-1 while continuing with AOP-018 and then shut the #1 seal leakoff isolation valve within 1 to 2 minutes.

C. Stop RCP "A" and then trip the reactor.

Go to PATH-1 while continuing with AOP-018 and then shut the #1 seal leakoff isolation valve within 3 to 5 minutes.

D. Stop RCP "A" and then trip the reactor.

Go to PATH-1 while continuing with AOP-018 and then shut the #1 seal leakoff isolation valve within 1 to 2 minutes.

7. Given the following plant conditions:

- Plant is in Mode 3 at 547°F.
- The Charging Line in Pipe Alley has ruptured and sprayed water on FCV-626, THERM BARRIER OUTLET.
- An electrical short causes FCV-626 to travel to the closed position.
- The Crew has secured ALL Charging Pumps IAW AOP-018, Reactor Coolant Pump Abnormal Conditions.

How much time is allowed to restore RCP seal cooling AND what constitutes seal cooling restoration IAW AOP-018?

- A. 15 minutes to restore EITHER thermal barrier cooling OR seal injection.
- B. 15 minutes to restore BOTH thermal barrier cooling AND seal injection.
- C. 30 minutes to restore EITHER thermal barrier cooling OR seal injection.
- D. 30 minutes to restore BOTH thermal barrier cooling AND seal injection.

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8. Given the following plant conditions:

- The plant is at 100% RTP.
- CV Spray Pump "A" operating during the performance of OST-352-1, Containment Spray Component Test - Train A.
- The following alarm is received:
 - APP-002-E1, CV SRY PMP COOL WTR LO FLOW

Which ONE (1) of the following identifies the alarm setpoint and the action required IAW APP-002-E1?

- A. 30 GPM. Stop CV Spray Pump "A".
- B. 30 GPM. Continued operation of CV Spray Pump "A" is allowed.
- C. 7 GPM. Stop CV Spray Pump "A".
- D. 7 GPM. Continued operation of CV Spray Pump "A" is allowed.

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9. Which ONE (1) of the following plant conditions requires entry into FRP-S.1, "Response To Nuclear Power Generation/ATWS?"
- A. Source Range startup rate of +0.1 dpm.
 - B. Intermediate Range startup rate of -0.1 dpm.
 - C. Power Range indicates 3% with an Intermediate Range startup rate of +0.2 dpm.
 - D. Power Range indicates 3% with an Intermediate Range startup rate of -0.2 dpm.

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10. Which ONE (1) of the following identifies the ESFAS signal that will provide protection for a main steam line break adjacent to a Main Steam Safety Valve and the basis?

High Steam Line.....

- A. Delta P; Provides protection for steam line breaks upstream of the MSIVs.
- B. Delta P; Provides protection for steam line breaks downstream of the MSIVs.
- C. Flow with Low Tave; Provides protection for steam line breaks downstream of the MSIVs.
- D. Flow with Low Tave; Provides protection for steam line breaks upstream of the MSIVs.

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11. The plant is at 68% RTP when the BOP observes the following indications for all 3 S/Gs from the FF/SF Trend Recorders and Feed Reg. Valve Controllers:

- S/G level is LOWERING.
- Steam Flow is STABLE.
- Feed Flow is LOWERING.
- Feed Reg Valve positions are all OPENING.

Which ONE (1) of the following identifies the cause of the event in progress?

- A. Heater Drain Pump Trip.
- B. Main Feedwater Pump Trip.
- C. FCV-1446, Condensate Recirc, fails OPEN.
- D. FCV-1444, Feedwater Pump "A" Recirc Valve, fails OPEN.

12. Given the following plant conditions:

- The plant is at 100% RTP when offsite power is lost.
- The crew has implemented EPP-5, Natural Circulation Cooldown.

Three hours has elapsed since the loss of offsite power and the following indications are observed:

- RCS Temperature is 288°F and lowering.
- RCS Pressure is 345 psig and stable.

Which ONE (1) of the following identifies the indications that are directed to be used IAW EPP-5 to determine if a Steam Void is present in the Reactor Vessel?

- A. RVLIS upper range, Large PZR level changes
- B. RVLIS upper range, Core Exit Thermocouple Temperatures
- C. subcooling, Large PZR level changes
- D. subcooling, Core Exit Thermocouple Temperatures

13. The plant is at 100% RTP.

The following annunciators are received:

- APP-036-D3, BATT A/B LOW VOLT
- APP-036-D2, BATT CHARGER B/B-1 TROUBLE
- DC Bus B voltage indicates 123 volts and lowering.

OAO reports that "B" Battery Charger has tripped.

Which ONE (1) of the following describes the status of the DC Bus and the Operator action that will be required IAW OP-601, DC Supply System?

The (1) Battery Charger (2). The "B" Batteries will be placed on (3) on the (4).

- A. (1) "B"
(2) will auto-start to become the In-service Battery Charger.
(3) equalize
(4) "B" Battery Charger
- B. (1) "B"
(2) must be manually placed in service.
(3) float setting
(4) "B" Battery Charger.
- C. (1) "B-1"
(2) will auto-start to become the In-service Battery Charger.
(3) equalize
(4) "B-1" Battery Charger
- D. (1) "B-1"
(2) must be manually placed in service.
(3) float setting
(4) "B-1" Battery Charger

14. Given the following plant conditions.

- The plant is at 100% RTP.
- APP-008-F7, SOUTH SW HDR LO PRESS, and APP-008-F8, NORTH SW HDR LOW PRESS, alarms are received.
- A Security Guard reports a large amount of water flowing to the storm drains from the area between the Aux. Building and Radwaste Building.
- IAO identifies rupture at SW piping elbow on east side of Auxiliary Building.

Which ONE (1) of the following identifies the Service Water Header that is ruptured and the components that must be "VERIFIED STOPPED" or taken out of service IAW AOP-022, Loss of Service Water?

The ___(1)___ Header has ruptured and the ___(2)___ must be removed from service.

- A. (1) South
(2) "B" EDG
- B. (1) North
(2) "B" EDG
- C. (1) South
(2) "A" EDG
- D. (1) North
(2) "A" EDG

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15. Given the following plant conditions:

- The plant is operating at 85% RTP.
- APP-009-D7, GEN LO FREQ, was received 30 seconds ago.
- AOP-026, GRID INSTABILITY, has been entered.
- Grid frequency is at 58.3 Hz and slowly lowering following a load rejection.

The crew has determined that the load rejection was 110 MWe.

Which ONE (1) of the following action(s) will be taken IAW AOP-026?

- A. Trip the Reactor and Go to PATH-1 ONLY.
- B. Trip the Reactor, Stop the RCPs and Go to PATH-1.
- C. Transition to AOP-015, Secondary Load Rejection ONLY.
- D. Transition to AOP-015, Secondary Load Rejection, while continuing with AOP-026.

16. Given the following plant conditions:

- The crew is performing the actions in EPP-20, LOCA Outside Containment.
- Auxiliary Building radiation levels are lowering.
- Safety Injection flow is 80 GPM and lowering.
- PZR level is off scale LOW.
- RCS pressure is 1450 psig and rising.

Which ONE (1) of the following identifies the leak status IAW EPP-20 and the basis for determining that status?

The leak is.....

- A. isolated because RCS pressure is rising.
- B. NOT isolated because SI pump flow still exists.
- C. NOT isolated because PZR level is not on scale.
- D. isolated because Auxiliary Building radiation levels are lowering.

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17. Given the following plant conditions:

- A Reactor Trip and Safety Injection have occurred.
- The crew has performed the actions of PATH-1.
- AFW flow cannot be established.
- All S/G NR levels are off-scale low.
- The crew has entered FRP-H.1, Response to Loss of Secondary Heat Sink.
- RCS Pressure is 175 psig and stable.
- Intact S/G pressures are 300 psig and trending down.

Which ONE (1) of the following completes the statement below?

A (1) Break LOCA is in progress AND a Secondary Heat Sink (2).

A. (1) Large

(2) is required.

B. (1) Small

(2) is required.

C. (1) Large

(2) is NOT required.

D. (1) Small

(2) is NOT required.

18. Given the following plant conditions:

- A SBLOCA has occurred. Containment Pressure is 2.3 psig.
- CCW Pumps are not available.
- The operating crew has transitioned to EPP-15, Loss of Emergency Coolant Recirculation.

Which ONE (1) of the following correctly describes the reason for depressurizing the RCS and the terminating setpoint?

To (1), depressurize the RCS until PZR level is > 71% (2) RCS Subcooling is between 35°F and 45°F.

- A. (1) minimize RCS leakage
(2) OR
- B. (1) minimize RCS leakage
(2) AND
- C. (1) inject the SI accumulators
(2) OR
- D. (1) inject the SI accumulators
(2) AND

19. Given the following plant conditions:

- The plant is operating at 50% RTP EOL while supporting MFP "A" maintenance.
- Rod Control is in MANUAL.
- The RO withdraws Bank 'D' two steps for Tavg control.
- When the Rod Control switch is released, Bank 'D' rods continue to move an additional three steps until stopped by performing the immediate actions of AOP-001, Malfunction of Reactor Control System.

* - TURBINE IS IN IMP-IN

Which ONE (1) of the following describes the effect on Reactor Power from Steady-State to Steady-State?

(Assume no additional operator actions have occurred.)

- A. Remains stable.
- B. Rise and stabilize at a value greater than 50% RTP.
- C. Rise initially, then trends back to less than 50% RTP.
- D. Rise initially, then trends back to approximately 50% RTP.

* CHANGED DURING EXAM 3/22/2011 *to B. old*

20. Given the following plant conditions:

- The plant is in Mode 6 with a core offload in progress.
- The CV Manipulator has just removed a fuel assembly from core location H-8 and is in transit to the CV upender.
- The CV manipulator operator accidentally places the gripper switch to the "DISENGAGE" position before the fuel assembly is lowered into the CV upender.
- The fuel assembly releases from the gripper while in the full up position and lands on the CV upender and damages several fuel rods.

Which ONE (1) of the following describes the interlock(s) that failed to prevent this action?

- A. ONLY the "Gripper Lock" Interlock.
- B. ONLY the "Gripper-Weight Indicator" Interlock.
- C. BOTH the "Gripper-Weight Indicator" AND the "Hoist/Gripper" Interlocks.
- D. BOTH the "Gripper-Weight Indicator" AND the "Gripper Lock" Interlocks.

21. Given the following plant conditions:

- The plant is at 3% RTP with T_{ave} at 549°F.
- A 50 gpm tube leak has been identified in "A" S/G.

Which ONE (1) of the following describes the appropriate actions that should be taken IAW AOP-035?

AOP-035, S/G Tube Leak

GP-006, Normal Plant Shutdown From Power Operation to Hot Shutdown

Supplement G, Steam Generator Isolation

- A. Shutdown the plant IAW GP-006 and then Isolate "A" S/G IAW AOP-035.
- B. Isolate "A" S/G IAW AOP-035 and then commence a plant shutdown IAW GP-006.
- C. Trip the reactor and go to PATH-2. Isolate "A" S/G IAW Supplement G concurrent with PATH-2.
- D. Trip the reactor and go to PATH-1. Transition to PATH-2 and isolate "A" S/G IAW Supplement G concurrent with PATH-2.

22. Given the following plant conditions:

- The plant is at 8% RTP with "B" MFP under clearance for motor bearing repairs.
- The Operating crew has entered AOP-012, Partial Loss of Condenser Vacuum or Circulating Water Pump Trip due to rising Condenser Back Pressure.
- The Main Turbine has been manually tripped IAW AOP-012.
- "A" MFP is subsequently secured due to an identified ground.

Which ONE (1) of the following actions is required by AOP-007, Turbine Trip Below P-8?

- A. Trip the Reactor and go to PATH-1.
- B. Trip the Reactor and go to PATH-1 while continuing with AOP-007.
- C. Position the control rods to maintain Reactor power between 7% and 10%.
- D. Position the control rods to reduce Reactor power to less than or equal to 3%.

23. Given the following plant conditions:

- "A" Monitor Tank is currently at 40% and being released IAW OP-705, Waste Liquid Release and Recirculation.
- The Inside AO reports a nonisolable leak on "A" Monitor Tank.

Which ONE (1) of the following identifies the correct actions IAW AOP-008, Accidental Release of Liquid Waste?

Stop the release and transfer contents of the "A" Monitor Tank to (1) to minimize leakage to (2).

- A. (1) Monitor Tank "B"
(2) storm drains
- B. (1) CVCS Holdup Tank
(2) storm drains
- C. (1) Monitor Tank "B"
(2) Aux Building Sump
- D. (1) CVCS Holdup Tank
(2) Aux Building Sump

24. Given the following plant conditions:

- PATH-1 has been entered.
- SI or RHR flow cannot be established.

<u>Time</u>	<u>CETC Temp</u>	<u>RVLIS Full Range</u>
1000	675°F	51%
1005	695°F	39%
1010	705°F	37%
1015	750°F	30%
1030	1000°F	29%
1045	1150°F	28%
1100	1205°F	25%

Based on the above indications, what is the earliest time at which entry conditions for FRP-C.1, Response to Inadequate Core Cooling, would be present?

- A. 1005
- B. 1010
- C. 1015
- D. 1100

25. The crew is implementing EPP-8, Post-LOCA Cooldown and Depressurization, following a Small Break LOCA
- Containment pressure peaked at 3.8 psig.
 - Steps have been taken to reduce SI flow by stopping "C" SI Pump.
 - "A" SI Pump remains running.

After "C" SI pump is stopped the following plant conditions are observed:

- RCS subcooling is 32°F and lowering.
- PZR level is 22% and lowering.

Which ONE of the following;

- (1) identifies the actions that will be taken
AND
(2) why will this action be taken?

- A. (1) Start additional Charging Pump(s).
(2) Due to adequate pressurizer level.
- B. (1) Start both SI pumps.
(2) Due to low pressurizer level.
- C. (1) Start additional Charging Pump(s).
(2) Due to low subcooling.
- D. (1) Start both SI pumps.
(2) Due to low subcooling.

26. Given the following plant conditions:

- A LOCA with a loss of off-site power has occurred.
- The supply breaker to MCC-6 tripped open prior to CV Spray Actuation.
- CV Pressure is 15 psig and both Containment Spray Pumps are operating.

Which ONE (1) of the following completes the statements below?

 (1) is the status of the Containment Spray System AND (2) is the current status of the Component Cooling Water Pumps.

(Assume no local operator actions have been taken.)

- A. (1) The discharge path is aligned from CV Spray Pump "A" ONLY.
(2) "A" CCW Pump is running.
- B. (1) CV Spray Pumps "A" and "B" are providing spray flow.
(2) "A" CCW Pump is running.
- C. (1) The discharge path is aligned from CV Spray Pump "A" ONLY.
(2) "B" and "C" CCW Pumps are secured.
- D. (1) CV Spray Pumps "A" and "B" are providing spray flow.
(2) "B" and "C" CCW Pumps are secured.

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27. Which ONE (1) of the following identifies the operational concern associated with Containment Flooding?

Containment Flooding could lead to

- A. Submersion of the Reactor Coolant Drain Tank resulting in damage to the Gas Analyzer.
- B. Critical system transmitter failures needed to ensure an orderly safe plant shutdown.
- C. Submersion of CVC-200A, B, C, Letdown Orifice Isolations resulting in a loss of normal letdown capability.
- D. Water potentially leaking through Containment Vessel Electrical Penetrations resulting in electrical shorts and/or grounds on components that are needed to ensure an orderly safe plant shutdown.

28. Given the following plant conditions:

- The plant is at 50% RTP.
- FT-434 RCS LOOP "C" FLOW TRANSMITTER low pressure sensing line develops a leak to the CV atmosphere.

Which ONE (1) of the following describes the expected plant response to this event?

- A. All Loop C flow channels read low.
- B. All Loop C flow channels read high.
- C. Flow indication will rise on ONLY the affected Loop C flow channel.
- D. Flow indication will lower on ONLY the affected Loop C flow channel.

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29. Given the following plant conditions:

- The plant is in Mode 5.
- The RCS is solid with pressure being automatically maintained.
- A clearance error results in PZR Backup Group A Heaters becoming energized.

Which ONE (1) of the following describes the FIRST (INITIAL) response to the rising Pressurizer temperature and pressure?
(Assume NO operator actions.)

- A. Annunciator APP-001-D6, LP LTDN LN HI PRESS, actuates.
- B. Annunciator APP-001-E6, LP LTDN RELIEF HI TEMP, actuates.
- C. Letdown flow rises as HCV-142, RHR TO LETDOWN & PURIFICATION FLOW CONTROL, opens.
- D. Letdown flow rises as PCV-145, LOW PRESSURE LETDOWN PRESSURE CONTROL VALVE, opens.

30. Given the following plant conditions:

- The plant is operating at 100% RTP.
- "C" Charging Pump is currently running in Manual at minimum speed.
- "A" Charging Pump is running in MANUAL at 35% demand during the performance of OP-301-1, Section 8.4.7, Charging Pump Break-In After Maintenance.
- CVC-283C, Charging Pump "A" Discharge Relief, has lifted and has not resealed.

Which ONE (1) of the following identifies the impact on Seal Injection flow(s) AND how would this malfunction be addressed by AOP-018, Reactor Coolant Pump Abnormal Conditions?

Seal Injection flows will lower to ___(1)___ and AOP-018 directs the operators to ___(2)___.

A. (1) ZERO flow

(2) Isolate letdown, secure all Charging Pumps, manually isolate "A" Charging pump.

B. (1) MINIMUM flow (~ 6 gpm)

(2) Isolate letdown, secure all Charging Pumps, manually isolate "A" Charging pump.

C. (1) ZERO flow

(2) Stop "A" Charging Pump and adjust the speed of "C" Charging Pump to restore normal seal injection flows.

D. (1) MINIMUM flow (~ 6 gpm)

(2) Stop "A" Charging Pump and adjust the speed of "C" Charging Pump to restore normal seal injection flows.

31. Given the following plant conditions:

- The plant is in Mode 6.
- RHR Train "A" is in service.
- FCV-605, RHR HX BYPASS, is set to maintain 3400 GPM.
- HCV-758, RHR HX OUTLET FLOW TO COLD LEGS, demand position set at 30%.
- The Instrument Air supply line to RHR Heat Exchanger Flow Control Valve HCV-758 becomes severed and is completely detached.
- No other air operated valves are impacted by the failure.

Which ONE (1) of the following identifies the changes in TR-604, PEN 2 RHR HX OUTLET TEMP, from the initial steady state conditions AND the RCS temperature at which refueling operations may continue IAW GP-010, Refueling?

	<u>RHR HX OUTLET TEMP</u>	<u>RCS Temp for Refueling</u>
A.	Higher	135°F
B.	Higher	150°F
C.	Lower	135°F
D.	Lower	150°F

32. Given the following plant conditions:

- Plant is shutdown for refueling.
- GP-009-1, Filling the Refueling Cavity with Fuel in the Reactor Vessel, is in progress.
- Safety Injection Pumps "A" and "C" are running.
- SI-866A, LOOP 3 HOT LEG, is full open and SI-866B, LOOP 2 HOT LEG, is being opened via its Control Power Switch to increase cavity fill rate.
- Safety Injection Pump discharge pressure is at 530 psig and lowering.

Which ONE (1) of the following identifies the required actions to be taken IAW GP-009-1 to control the Safety Injection pump discharge pressure?

- A. Close SI-856A **OR** SI-856B, SI Pump Recirc., valve.
- B. Place SI-866B Control Power Switch to NORMAL.
- C. Place SI-866B Control Power Switch to DEFEAT.
- D. Place SI-866B Control Switch to CLOSE.

33. Given the following plant conditions:

- LOCA recovery is in progress and RWST Level has lowered below 27%.
- The crew has transitioned to EPP-9, Transfer to Cold Leg Recirculation.
- While aligning the CV Sump To RHR valves, SI-860A, CV Sump to RHR, fails to open and remains in the closed position.

Which ONE (1) of the following describes the impact on the ability to provide cold leg recirculation?

- A. Both RHR pumps are available with full flow capability. Remain in EPP-9, Transfer to Cold Leg Recirculation.
- B. ONLY "B" RHR pump is available for cold leg recirculation. Remain in EPP-9, Transfer to Cold Leg Recirculation.
- C. ONLY "B" RHR pump is available for cold leg recirculation. Transition to EPP-15, Loss of Emergency Coolant Recirculation.
- D. Both RHR pumps are available with reduced flow capability. Transition to EPP-15, Loss of Emergency Coolant Recirculation.

34. The plant is at 100% RTP.

The following indications are reported by the RO:

- TI-471, PRT Temperature is trending up over a period of 4 hours and is now at 148°F.
- PI-472, PRT Pressure is trending up and is now at 4 psig.
- PZR PRV RC-551A, B and C Acoustic Monitor Lights are extinguished.

Which ONE (1) of the following valve leakage is causing the given conditions?

- A. PCV-456, PZR PORV, is leaking by its seat.
- B. RC-551A, Pressurizer Safety Valve, is leaking by its seat.
- C. CVC-382, RCP Seal Return Line Relief, is leaking by its seat.
- D. CC-722A, RCP "A" Thermal Barrier Outlet Relief, is leaking by its seat.

35. Given the following plant conditions:

- Plant is at 100% RTP.
- Grid disturbance results in a load rejection.
- PCV-456 momentarily lifts due to the load rejection but does not fully reseal.
- The operating crew has closed RC-535 to isolate PCV-456 leakage.
- PRT pressure has been restored IAW APP-003-C3.
- APP-003-B3, PRT HI TEMP, is illuminated.
- PRT Temperature is currently 155°F.

Which ONE of the following completes the statements below?

The PRT rupture disc would have actuated if pressure reached (1) in the PRT. IAW APP-003-B3, PRT HI TEMP, the PRT temperature will be lowered by (2).

- A. (1) 100 psia
(2) alternately adding primary water to the PRT and draining the PRT.
- B. (1) 100 psia
(2) simultaneously adding primary water while draining the PRT.
- C. (1) 100 psig
(2) alternately adding primary water to the PRT and draining the PRT.
- D. (1) 100 psig
(2) simultaneously adding primary water while draining the PRT.

36. Given the following plant conditions:

- MODE 1 at 100% RTP.
- "B" CCW pump is in service.
- The normal supply breaker to 480V Bus E-1 Trips Open.

Which ONE (1) of the following identifies the status of the CCW pumps TWO (2) minutes after the event?

- A. All CCW Pumps started on Low Pressure
- B. ONLY "A" CCW Pump started on Low Pressure
"B" and "C" CCW Pumps started on Blackout Sequencer
- C. ONLY "C" CCW Pump started on Low Pressure
"B" CCW Pump started on Blackout Sequencer
- D. "A" and "C" CCW Pumps started on Low Pressure
"B" CCW Pump started on Blackout Sequencer

37. A pressurizer code safety valve has indications of leakage.

The following indications exist:

- Pressurizer pressure is 2225 psig and stable.
- Safety Valve tailpipe temperature indicates 231°F and rising.
- PRT pressure is 6 psig and rising 1 psi every 10 minutes

Which ONE (1) of the following completes the statement below?

The temperature downstream of the safety valves corresponds to

- A. the PRT saturation pressure because of the loss of enthalpy of a throttling process.
- B. the PRT saturation pressure because of the constant enthalpy of a throttling process.
- C. the saturation pressure of the presssurizer steam space because of the loss of enthalpy of a throttling process.
- D. the saturation pressure of the presssurizer steam space because of the constant enthalpy of a throttling process.

38. The plant is at 100% RTP and the following occurs:

- The PZR pressure master controller (PC-444J) is failing HIGH.
- The PZR spray valves are fully OPEN.
- The PZR PORVs are CLOSED.

Which ONE (1) of the following identifies the value of the controller output (PC-444J) for this condition?

- A. ~75%
- B. ~70%
- C. ~65%
- D. ~60%

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39. The plant is at 100% RTP when "A" Condensate Pump trips due to electrical fault.

Which ONE (1) of the following completes the statement below?

The FIRST reactor trip signal will be generated as soon as bistable lights for.....
(Assume no operator action.)

- A. "SG NO. 2 LO-LO Level LC484A1" **AND** "SG NO. 2 LO-LO Level LC485A1" Illuminate.
- B. "SG NO. 2 LO-LO Level LC484A1" **OR** "SG NO. 2 LO-LO Level LC485A1" Illuminate.
- C. "SG NO. 2 LO Level LC484B1" **AND** "SG NO. 2 LO Level LC485B1" Illuminate.
- D. "SG NO. 2 LO Level LC484B1" **OR** "SG NO. 2 LO Level LC485B1" Illuminate.

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40. Containment Spray Actuation requires (1) channels in (2) sets (or trains) of logic.

1

2

A. 2 of 3

1 of 2

B. 2 of 3

2 of 2

C. 2 of 4

1 of 2

D. 2 of 4

2 of 2

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41. Given the following Containment temperature indications:

<u>Time</u>	<u>TI-950B</u>	<u>ERFIS Point CVT0001</u>
1100	118.0°F	118.3°F
1200	118.5°F	118.7°F
1300	119.0°F	119.2°F
1400	120.5°F	119.8°F
1500	121.0°F	120.2°F
1600	121.5°F	120.6°F

(RTGB) TI-950B - Containment Average Temperature

(ERFIS) CVT0001 - Containment Average Air Temperature

Which ONE (1) of the following identifies when ITS LCO 3.6.5, Containment Air Temperature, must be entered IAW PLP-118, Hot Weather Operations?

- A. 1200
- B. 1300
- C. 1400
- D. 1500

42. Given the following plant conditions:

- Plant is at 100% RTP.
- Breaker 52/17, START-UP TRANSFORMER TO 4KV BUS 3, trips.
- A Large Break LOCA occurs 20 seconds later.

Which ONE (1) of the following identifies the configuration of the power supplies to CV Spray Pumps "A" and "B"?

CV Spray Pump "A" powered from (1) and CV Spray Pump "B" powered from (2).

- A. (1) SUT
(2) "B" EDG
- B. (1) SUT
(2) SUT
- C. (1) "A" EDG
(2) "B" EDG
- D. (1) "A" EDG
(2) SUT

43. Given the following plant conditions:

- The plant is at 100% RTP.
- The OAO reports a steam leak near the Main Steam Isolation Valves.
- The following indications are noted in the Control Room:
 - Power Range Nuclear Instruments are rising.
 - T_{avg} is lowering.
 - Steam flow and feed flow have risen.
 - Power Limit Warning alarm on ERFIS has been received.
 - Reactor power is 100.3% and slowly rising.

Which ONE(1) of the following identifies both:

(1) the time in core life that will result in the largest reactivity excursion

AND

(2) the required operator actions to clear the Power Limit Warning alarm?

A. (1) BOL

(2) reduce power by inserting control rods IAW OP-106, Normal Plant Operations.

B. (1) BOL

(2) reduce power by using the Valve Position Limiter IAW OMM-001-2, Shift Routines and Operating Practices.

C. (1) EOL

(2) reduce power by inserting control rods IAW OP-106, Normal Plant Operations.

D. (1) EOL

(2) reduce power by using the Valve Position Limiter IAW OMM-001-2, Shift Routines and Operating Practices.

44. Given the following plant conditions:

- A Steam Generator Tube Rupture (SGTR) is in progress.
- The crew is in PATH-2 and are commencing the RCS cooldown to target temperature.
- The procedure has directed to "Dump Steam to the condenser from intact S/Gs at the maximum rate."

Which ONE (1) of the following describes the term "Maximum Rate" as specified in the NOTE in PATH-2?

As fast as possible ...

- A. while not exceeding the High Steam Line ΔP limit.
- B. while not exceeding Temp Limit A of the INTEGRITY Critical Safety Function Status Tree.
- C. while keeping steam flow less than the High Steam Flow Main Steamline Isolation setpoint.
- D. while keeping steam pressure above the Low Steamline Pressure Safety Injection setpoint.

45. Given the following plant conditions:

- The plant is at 60% RTP.

Which ONE (1) of the following describes the expected S/G Narrow Range Levels and the basis for that level?

The S/Gs will indicate ____ (1) ____ and the basis for this level is to ____ (2) ____.

A. (1) 39%

(2) maintain sufficient level to prevent a reactor trip from a 50% load rejection and is low enough to minimize moisture carryover.

B. (1) 39%

(2) maintain the mass in the S/G great enough to stay above the reactor trip setpoints and minimizes the consequences of a steam break accident.

C. (1) 52%

(2) maintain sufficient level to prevent a reactor trip from a 50% load rejection and is low enough to minimize moisture carryover.

D. (1) 52%

(2) maintain the mass in the S/G great enough to stay above the reactor trip setpoints and minimizes the consequences of a steam break accident.

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46. "B" MFP is OOS for Maintenance and the following occurs:

- The Reactor was manually Tripped while operating at 20% RTP due to a trip of "A" MFP
- PZR Level is 20% and slowly lowering.
- Tave is 545°F and lowering.
- RCS Pressure is 2050 psig and lowering.
- Steam Generator Blowdown is Isolated.
- S/G levels are as follows:
 - "A" S/G Narrow Range level is 40% and slowly rising.
 - "B" S/G Narrow Range level is 41% and slowly rising.
 - "C" S/G Narrow Range level is 45% and slowly rising.

Which ONE (1) of the following provides the action(s) that are required to be taken next IAW EPP-4, Reactor Trip Response?

- A. Initiate Safety Injection.
- B. Close MSIVs & MSIV Bypasses.
- C. Borate to Cold Shutdown Boron.
- D. Reduce Auxiliary Feedwater Flow.

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47. Which ONE (1) of the following describes the 4160 Volt power supplies to the "A and "B" RCPs?

	<u>RCP "A"</u>	<u>RCP "B"</u>
A.	Bus 1	Bus 2
B.	Bus 2	Bus 4
C.	Bus 1	Bus 4
D.	Bus 2	Bus 1

48. Given the following plant conditions:

- The plant is at 100% RTP.
- APP-036-D1, BATT CHARGER A/A-1 TROUBLE, annunciated.
- OAO reports the following indications from Battery Charger "A-1":
 - +40 Volts on the Ground Detection Voltmeter.
 - 140 Volts DC on Charger Voltage.

What are the adverse impacts of the reported indications and the actions required to be taken IAW APP-036-D1?

A. Normally non-energized portions of switchgear may be energized.

Isolate "A" Batteries by Aligning Battery Charger "A" to carry the bus load.

B. Normally non-energized portions of switchgear may be energized.

Swap Battery Chargers to place Battery Charger "A" In-service.

C. Over-voltage condition could damage "A" Batteries.

Isolate "A" Batteries by Aligning Battery Charger "A" to carry the bus load.

D. Over-voltage condition could damage "A" Batteries.

Swap Battery Chargers to place Battery Charger "A" In-service.

49. Given the following plant conditions:

- The plant is in Mode 3.
- A fire has occurred in DC Distribution Panel 'B'.
- The panel has been de-energized.

Which ONE (1) of the following identifies the effect on the Electrical Distribution System?

Control Power lost to 4160 V Busses....

- A. 1 & 2 and cannot be restored.
- B. 1 & 2. Control Power can be restored using a safety switch in the 4160 V Switchgear Room.
- C. 3 & 4 and cannot be restored.
- D. 3 & 4. Control Power can be restored using a safety switch in the 4160 V Switchgear Room.

50. Given the following plant conditions:

- Plant is at 100% RTP.
- An Electrician accidentally opens breaker 52/18B, Normal Supply Breaker for E-1.
- "A" EDG starts on UV and energizes Emergency Bus E-1.

Which ONE (1) of the following identifies the effect of stopping "A" EDG from the RTGB while it is loaded on the isolated Emergency Bus E-1?

After taking the "A" EDG Control switch on the RTGB to STOP the "A" EDG will

- A. trip and must be manually reset prior to placing back in service.
- B. maintain its current speed and voltage due to Shutdown Control Logic having a run priority.
- C. attempt to shutdown but will restart due to the Shutdown Control Logic having a run priority.
- D. maintain its current speed and voltage due to the App. R Isolation Switches being in the ISOLATE position.

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51. Which ONE(1) of the following describes the basis for initiating a Containment Ventilation Isolation signal during the performance of FRP-S.1, Response to Nuclear Power Generation / ATWS?

To isolate.....

- A. non-essential containment ventilation penetrations to prevent potential release of radioactive materials from containment.
- B. R-11 and R-12, CV Air and Plant Stack Monitors, to prevent potential release of radioactive materials from containment.
- C. non-essential containment ventilation penetrations due to delayed response time of R-11 and R-12 during an ATWS.
- D. R-11 and R-12, CV Air and Plant Stack Monitors, due to delayed response time of R-11 and R-12 during an ATWS.

ILC-11-1 NRC Exam

52. SW-739, CCW HEAT EXCHANGER "A" RETURN, and SW-740, CCW HEAT EXCHANGER "B" RETURN, are throttled in the closed direction.

Which ONE(1) of the following completes the statement below?

This will cause Service Water Header Pressure to (1) and CCW Heat Exchanger Outlet Temperature to (2) .

A. (1) lower

(2) lower

B. (1) lower

(2) rise

C. (1) rise

(2) lower

D. (1) rise

(2) rise

ILC-11-1 NRC Exam

53. Which ONE (1) of the following identifies the fail position of TCV-144, NON-REG HX OUTLET TEMP CONTROL, valve on a loss of Instrument Air AND the effect this will have on reactivity?

TCV-144 will fail (1) AND this will insert (2) reactivity.

- A. (1) OPEN
(2) Positive
- B. (1) OPEN
(2) Negative
- C. (1) CLOSED
(2) Positive
- D. (1) CLOSED
(2) Negative

54. Given the following plant conditions:

- The plant is at 100% RTP.
- APP-002-B7, CV NAR RANGE HI/LO PRESS illuminates.
- CV Pressure indicates -0.4 psig, lowering.

Which ONE (1) of the following describes the action necessary to clear the alarm IAW OP-921, Containment Air Handling?

Open the Containment

- A. Pressure Relief Valves V12-10 and V12-11 ONLY.
- B. Pressure Relief Valves V12-10 and V12-11 AND lower Service Water flow to the Containment HVH units.
- C. Vacuum Relief Valves V12-12 and V12-13 ONLY.
- D. Vacuum Relief Valves V12-12 and V12-13 AND lower Service Water flow to the Containment HVH units.

55. Given the following plant conditions:

- The RCS is at 275°F.
- All RCPs are running.
- CVC-381, RCP Seal Return Isolation, has been declared inoperable due to improperly set torque switches.

Which ONE (1) of the following statements is correct IAW the RNP ITS?

- A. Close CVC-381 ONLY.
- B. Close and deactivate CVC-381.
- C. CVC-381 operability is NOT required for the given plant conditions.
- D. Close CVC-380, Seal Water Return Filter Inlet, AND station a Dedicated Operator IAW OP-923, Containment Integrity.

56. Plant is at 100% RTP.

Which ONE (1) of the following describes an INITIAL effect of one control rod dropping fully into the core?

This will cause the Charging Pump Speed to initially (1) due to the Pressurizer Reference Level (2).

- A. (1) lower
(2) lowering
- B. (1) rise
(2) lowering
- C. (1) lower
(2) rising
- D. (1) rise
(2) rising

57. Given the following plant conditions:

- The plant is at 100% RTP.
- A loss of Inverter "A" occurs.

Which ONE (1) of the following identifies ALL the excore Nuclear Instrument channels that have lost power?

- A. N-41 and N-51
- B. N-43 and N-52
- C. N-32, N-36 and N-42
- D. N-31, N-35 and N-41

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58. The plant is at 50% RTP when the steam pressure input into the "A" S/G Level Control System fails high slowly.

Which ONE (1) of the following actions will occur?

Initially, feedwater flow to the "A" S/G will

- A. lower due to lower indicated steam flow.
The level error signal will NOT result in a rise in feedwater flow.
- B. lower due to lower indicated steam flow.
Eventually, the level error signal will result in a rise in feedwater flow.
- C. rise due to higher indicated steam flow.
The level error signal will NOT result in a reduction of feedwater flow.
- D. rise due to higher indicated steam flow.
Eventually, the level error signal will result in a reduction of feedwater flow.

ILC-11-1 NRC Exam

59. Which ONE (1) of the following identifies the *major* source of hydrogen following a design basis LOCA with Inadequate Core Cooling AND is listed in the UFSAR criteria for ECCS performance following a LOCA?

- A. Zirc-water reaction.
- B. Radiolysis of RCS water.
- C. Radiolysis of containment sump water.
- D. Degradation of non-metallic insulation material.

60. Given the following plant conditions:

- Plant is currently in Mode 6 during a scheduled refueling outage.
- Core re-load is in progress.
- The alarming radiation monitor on the refueling bridge loses power.

Which ONE (1) of the following identifies the impact to refueling operations and the proper actions of the refueling crew?

A. Fuel movement may continue as long as R-2, CV AREA, remains operable.

Replace the radiation monitor with an operable monitor with an alarm setpoint of 15 mr/hr.

B. Fuel movement may continue as long as R-2, CV AREA, remains operable.

Replace the radiation monitor with an operable monitor with an alarm setpoint of 25 mr/hr.

C. Fuel movement must be suspended until the radiation monitor is replaced.

Replace the radiation monitor with an operable monitor with an alarm setpoint of 15 mr/hr.

D. Fuel movement must be suspended until the radiation monitor is replaced.

Replace the radiation monitor with an operable monitor with an alarm setpoint of 25 mr/hr.

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61. Which ONE (1) of the following action(s) is necessary to utilize the steam dumps to cooldown the plant IAW GP-007, Plant Cooldown from Hot Shutdown to Cold Shutdown?
- A. Momentarily place the Steam Dump Mode Switch to RESET with Tave less than 543°F.
 - B. Momentarily place the Steam Dump Mode Switch to RESET with Tave less than 547°F.
 - C. Bypass the Low Tavg interlock by momentarily selecting BYPASS TAVG INTERLOCK on the Steam Dump Control switch with Tavg less than 543°F.
 - D. Bypass the Low Tavg interlock by momentarily selecting BYPASS TAVG INTERLOCK on the Steam Dump Control switch with Tavg less than 547°F.

62. Given the following plant conditions:

- Plant is at 100% RTP.
- Waste Gas Release of "A" Waste Gas Decay Tank is in progress.
- APP-010-B7, HVE-2A/2B AIR FLOW LOST/OVLD, is received.
- HVE-2A has tripped.

Which ONE (1) of the following describes the actions required by the operator AND the potential plant effect of a loss of the Reactor Auxiliary Building Exhaust Fan?

The operator will _____ (1) _____ AND the possible effect of a loss of Reactor Auxiliary Building Exhaust Fans is / has _____ (2) _____.

- A. (1) have to manually start HVE-2B
(2) an unmonitored release from the Reactor Auxiliary Building.
- B. (1) verify that HVE-2B starts automatically
(2) an unmonitored release from the Reactor Auxiliary Building.
- C. (1) have to manually start HVE-2B
(2) no impact since HVE-5A or HVE-5B will automatically start.
- D. (1) verify that the HVE-2B starts automatically
(2) no impact since HVE-5A or HVE-5B will automatically start.

63. Given the following plant conditions:

- Plant is stable at 60% RTP.
- Charging pumps "A" & "C" are in service.
- Letdown orifice valves CVC-200A and CVC-200B are open.
- A valid alarm has been received on R-9, LETDOWN LINE AREA.

Which ONE (1) of the following identifies the correct operator response to a valid alarm on R-9, LETDOWN LINE AREA, IAW AOP-005, Radiation Monitoring System?

- A. Shut CVC-200B to minimize letdown flow.
- B. Isolate letdown flow by closing LCV-460A / B.
- C. Secure Charging pump "C" and lower Charging pump "A" to minimal flow.
- D. Dispatch an operator to Loose Parts Monitoring Cabinet to monitor for abnormal indications.

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64. A plant shutdown is in progress with the plant at 20% RTP with the steam dumps in STEAM PRESSURE mode.

- "C" Circulating Water Pump is Out of Service for Maintenance.
- "A" and "B" Circulating Water Pumps are in operation.
- "B" Circulating Water Pump trips and V6-50B, CIRC WATER PMP "B" DISCH, remains full open and will not close.

What impact will this have on Condenser Vacuum and Steam Dump Operation AND what actions are required IAW AOP-012, Partial Loss of Condenser Vacuum or Circulating Water Pump Trip?

Condenser Vacuum will.....

- A. rapidly degrade. Steam dump operation may continue as long as ONE (1) Circulating Water Pump is running and Vacuum does not go below 19.7" Hg.

Dispatch an operator to manually close V6-50B.

- B. rapidly degrade. Steam dump operation may continue as long as ONE (1) Circulating Water Pump is running and Vacuum does not go below 18" Hg.

Manually trip the turbine and go to AOP-007, Turbine Trip Below P-8.

- C. slowly degrade. Steam dump operation may continue as long as ONE (1) Circulating Water Pump is running and Vacuum does not go below 18" Hg.

Dispatch an operator to manually close V6-50B.

- D. slowly degrade. Steam dump operation may continue as long as ONE (1) Circulating Water Pump is running and Vacuum does not go below 19.7" Hg.

Manually trip the turbine and go to AOP-007, Turbine Trip Below P-8.

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65. Which ONE (1) of the following lists the location(s) that the Motor Driven Fire Pump (MDFP) and the Engine Driven Fire Pump (EDFP) can be manually started?

The MDFP can be started at the (1) AND the EDFP can be started at the (2) .

- A. (1) Unit 2 Control Room AND Unit 2 Intake Structure.
 (2) Unit 2 Intake Structure ONLY.
- B. (1) Unit 2 Control Room AND Unit 2 Intake Structure.
 (2) Unit 2 Control Room AND Unit 2 Intake Structure.
- C. (1) Unit 2 Control Room ONLY.
 (2) Unit 2 Intake Structure ONLY.
- D. (1) Unit 2 Control Room ONLY.
 (2) Unit 2 Control Room AND Unit 2 Intake Structure.

66. Given the following plant conditions:

- The plant was at 42% RTP and rising IAW GP-005, Power Operation.
- A loss of feedwater occurs.
- All three S/G NR levels are at 0%.
- It is now 29 seconds later and the Reactor Trip Breakers have remained closed.

Which ONE (1) of the following is the expected response of the ATWS Mitigation System Actuation Circuitry (AMSAC) and the purpose of those actions?

AMSAC will start (1) and the purpose of AMSAC is to prevent (2)

- A. (1) ONLY MDAFW pumps
(2) exceeding the kW/ft limit of the fuel rods during an ATWS condition.
- B. (1) ONLY MDAFW pumps
(2) prevent voiding in the RCS during an ATWS condition and a loss of feedwater.
- C. (1) ALL AFW pumps
(2) exceeding the kW/ft limit of the fuel rods during an ATWS condition.
- D. (1) ALL AFW pumps
(2) voiding in the RCS during an ATWS condition and a loss of feedwater.

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67. In order to maintain an active license and qualification, a Reactor Operator must, at a **MINIMUM**, meet the following requirements:

- A. Stand a minimum of **four** 12 hour shifts per calendar quarter as RO.
Participate in LOCT and be evaluated as an RO or BOP in LOCT.
Have a current annual medical exam.
- B. Stand a minimum of **four** 12 hour shifts per calendar quarter as RO or BOP.
Participate in LOCT and be evaluated as an RO in LOCT.
Have a current biennial medical exam.
- C. Stand a minimum of **five** 12 hour shifts per calendar quarter as RO.
Participate in LOCT and be evaluated as an RO or BOP in LOCT.
Have a current annual medical exam.
- D. Stand a minimum of **five** 12 hour shifts per calendar quarter as RO or BOP.
Participate in LOCT and be evaluated as an RO in LOCT.
Have a current biennial medical exam.

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68. With the plant at 100% RTP what power level will be acceptable for performance of OST-206, Comprehensive Flow Test for the Steam Driven Auxiliary Feedwater Pump and what effects will forward flowing the S/G have on Reactor Power?

In accordance with OST-206, Reactor Power must be no greater than.....

A. 99%

Running the SDAFW Pump results in a rise in reactor power *solely* due to the additional feedwater flow.

B. 98%

Running the SDAFW Pump results in a rise in reactor power due to using steam to run the pump and cooler feedwater being supplied to the S/Gs.

C. 99%

Running the SDAFW Pump results in a rise in reactor power due to using steam to run the pump and cooler feedwater being supplied to the S/Gs.

D. 98%

Running the SDAFW Pump results in a rise in reactor power *solely* due to the additional feedwater flow.

69. Given the following information:

- Plant is at 100% RTP.
- The current plant Risk Profile (EOOS profile) is an elevated GREEN due to scheduled repairs to Reactor Protection related components. These repairs are in-progress and will take 5 hours to restore, test and return to service.

An Electrical System Engineer has coordinated with the Work Week Coordinator and Plant Management to inspect the fuses and wiring inside 480V-E1 Compartment 18A, PT'S & METERING EQUIPMENT to resolve a recent Vendor Notice as an Emergent Work Activity.

Which ONE (1) of the following describes the actions that must be taken prior to authorizing the Emergent Work Activity while the Reactor Protection work continues?

- A. EOOS Risk Assessment will NOT be performed since opening the 480V-E1 Compartment door does NOT render any equipment unavailable. EOOS Risk Assessment is not necessary. Work may be released.
- B. EOOS Risk Assessment will be performed assuming that 480V-E1 will be made unavailable. **IF** the assessment results in a **YELLOW** risk condition **THEN** the emergent work SHALL NOT be released.
- C. EOOS Risk Assessment will be performed assuming that 480V-E1 will be made unavailable. **IF** the assessment results in an **ORANGE** risk condition **THEN** the emergent work SHALL NOT be released.
- D. EOOS Risk Assessment will be performed assuming that 480V-E1 will be made unavailable. **IF** the assessment results in an **ORANGE** risk condition **THEN** the work may be released with SM approval.

70. Given the following plant conditions:

- The plant is in Mode 1.

Which ONE (1) of the following sets of conditions represents a violation of a Technical Specification Safety Limit and required action IAW Technical Specifications?

(Reference Provided)

- A. RTP - 10%, PZR Pressure - 2350 psig, RCS Highest Cold Leg Temp - 650°F
Restore compliance and be in Mode 3 within 1 hour.
- B. RTP - 80%, PZR Pressure - 2250 psig, RCS Highest Cold Leg Temp - 640°F
Restore compliance and be in Mode 3 within 1 hour.
- C. RTP - 10%, PZR Pressure - 2350 psig, RCS Highest Cold Leg Temp - 650°F
Restore compliance within 5 minutes.
- D. RTP - 80%, PZR Pressure - 2250 psig, RCS Highest Cold Leg Temp - 640°F
Restore compliance within 5 minutes.

ILC-11-1 NRC Exam

71. What Technical Specification OPERATIONAL MODE is the plant in with RCS temperature being maintained at 380°F AND how many Safety Injection Pump(s) are required to be operable?

The plant is in Mode _____ (1) _____ AND there must be at least _____ (2) _____ Safety Injection Pump(s) operable without entering a TS Action Statement.

A. (1) 3

(2) 1

B. (1) 4

(2) 1

C. (1) 3

(2) 2

D. (1) 4

(2) 2

72. Given the following plant conditions:

- A fuel handling accident occurs in containment and an evacuation is ordered via a PA announcement.
- R-14C, NG-LO, is reading normal with a steady reading.
- R-11 and R-12, Containment Particulate and Gas Radiation Monitors, indications are showing a slight rising trend.
- The Equipment Hatch is removed.

Which ONE (1) of the following is an action to be taken to mitigate the consequences of this event IAW AOP-013, FUEL HANDLING ACCIDENT?

- A. Verify Control Room Ventilation System shifted to Emergency Recirculation Mode.
- B. Place HVE-3 and HVE-4, CV Iodine RMVL Fan, in the PREPURGE position.
- C. Place the Upper Fuel Handling Building Ventilation System in service.
- D. Verify and maintain the CV Purge secured.

73. Given the following:

- A Progress Energy Mechanic has been assigned to repack a valve.
- Projected dose rate in the area is 500 mR/hr.
- The Mechanic has a current yearly dose of 0.5 Rem TEDE.

What is the MAXIMUM time that the mechanic can work on the valve before reaching the Progress Energy Annual Administrative Dose Limit?

- A. 1 hour
- B. 3 hours
- C. 4 hours
- D. 7 hours

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74. The plant was at 100% RTP when a LOCA occurred. The crew was implementing PATH-1 when a loss of offsite power occurred due to an internal failure in the Startup Transformer.

- Due to several equipment malfunctions, the following conditions exist:

- "A" S/G N/R level is 10%, AFW flow is 110 gpm.
- "B" S/G N/R level is 12%, AFW flow is 105 gpm.
- "C" S/G N/R level is 13%, AFW flow is 110 gpm.
- RCS pressure is 100 psig and lowering.
- Core exit thermocouples are 708°F.
- RVLIS Full Range is 43%.
- Containment pressure is 41 psig and lowering.
- Both CV spray pumps have tripped and cannot be restarted.

Which ONE (1) of the following identifies the proper procedure that will be entered based on priority of the procedures? (Assume that monitoring of CSFSTs is in effect.)

- A. FRP-H.1, Response to Loss of Secondary Heat Sink.
- B. FRP-J.1, Response to High Containment Pressure.
- C. FRP-C.1, Response to Inadequate Core Cooling.
- D. FRP-C.2, Response to Degraded Core Cooling.

ILC-11-1 NRC Exam

75. Which ONE(1) of the following identifies the mitigation strategy of EPP-12, "Post-SGTR Cooldown Using Backfill?"

EPP-12 cools down and depressurizes the plant to Cold Shutdown conditions and.....

- A. cools the ruptured S/G by filling to 85% to 91% WR level.
- B. cools the ruptured S/G by steaming with the steam line PORV.
- C. depressurizes the ruptured S/G by draining the ruptured S/G through S/G blowdown.
- D. depressurizes the ruptured S/G by draining the ruptured S/G through the ruptured tube(s).

Reference Material Table of Contents

1. ITS Section 2.0, Figure 2.1.1-1, Reactor Core Safety Limits

ANSWER KEY REPORT
for ILC-11-1 NRC Written Exam 2-15-11 Test Form: 0

Answers

#	ID	Points	Type	0
1	007 EK2.02 1	1.00	MCS	D
2	008 AK2.03 1	1.00	MCS	C
3	009 EK3.23 1	1.00	MCS	A
4	011 EK1.01 1	1.00	MCS	C
5	015 AK1.04 1	1.00	MCS	B
6	015 AK2.10 1	1.00	MCS	A
7	022 AA1.09 1	1.00	MCS	A
8	026 AA1.06 1	1.00	MCS	A
9	029 EG2.4.21 1	1.00	MCS	C
10	040 AK3.02 1	1.00	MCS	A
11	054 AA2.08 1	1.00	MCS	B
12	056 AG2.4.47 1	1.00	MCS	A
13	058 AA2.01 1	1.00	MCS	D
14	062 AA2.01 1	1.00	MCS	B
15	077 AG2.4.45 1	1.00	MCS	B
16	W/E 04 EK3.2 1	1.00	MCS	A
17	W/E 05EK1.2 1	1.00	MCS	C
18	W/E 11EA1.3 1	1.00	MCS	A
19	001 AA2.04 1	1.00	MCS	D
20	036 AK2.01 1	1.00	MCS	D
21	037 AG2.4.9 1	1.00	MCS	A
22	051 AA1.04 1	1.00	MCS	D
23	059 AK3.01 1	1.00	MCS	B
24	074 EA2.07 1	1.00	MCS	B
25	W/E 03 EK1.1 1	1.00	MCS	D
26	W/E 14EA1.1 1	1.00	MCS	D
27	W/E 15EK3.1 1	1.00	MCS	B
28	003 A3.04 1	1.00	MCS	C
29	004 A3.15 1	1.00	MCS	D
30	004 K3.08 1	1.00	MCS	A
31	005 K3.07 1	1.00	MCS	A
32	006 A1.07 1	1.00	MCS	C
33	006 K6.10 1	1.00	MCS	B
34	007 A1.03 1	1.00	MCS	A
35	007 A2.01 1	1.00	MCS	C
36	008 K4.09 1	1.00	MCS	D
37	010 K5.02 1	1.00	MCS	B
38	010 K6.01 1	1.00	MCS	B
39	012 A4.04 1	1.00	MCS	D
40	013 K5.01 1	1.00	MCS	B
41	022 A4.05 1	1.00	MCS	D
42	026 K2.01 1	1.00	MCS	A
43	039 G2.1.7 1	1.00	MCS	D
44	039 G2.4.20 1	1.00	MCS	C
45	059 A3.02 1	1.00	MCS	C
46	061 K5.01 1	1.00	MCS	D

ANSWER KEY REPORT
for ILC-11-1 NRC Written Exam 2-15-11 Test Form: 0

				Answers
#	ID	Points	Type	0
47	062 K2.01 1	1.00	MCS	C
48	063 A2.01 1	1.00	MCS	B
49	063 K4.02 1	1.00	MCS	D
50	064 A2.14 1	1.00	MCS	C
51	073 G2.4.18 1	1.00	MCS	A
52	076 K1.01 1	1.00	MCS	D
53	078 K3.02 1	1.00	MCS	A
54	103 A4.01 1	1.00	MCS	C
55	103 K1.02 1	1.00	MCS	B
56	001 K3.01 1	1.00	MCS	A
57	015 K2.01 1	1.00	MCS	C
58	016 K1.12 1	1.00	MCS	D
59	028 K5.03 1	1.00	MCS	A
60	034 K6.02 1	1.00	MCS	C
61	041 K4.09 1	1.00	MCS	C
62	071 A1.06 1	1.00	MCS	B
63	072 G2.1.20 1	1.00	MCS	A
64	075 A2.03 1	1.00	MCS	A
65	086 A4.01 1	1.00	MCS	A
66	G2.1.28 1	1.00	MCS	D
67	G2.1.4 1	1.00	MCS	D
68	G2.1.43 1	1.00	MCS	B
69	G2.2.20 1	1.00	MCS	C
70	G2.2.22 1	1.00	MCS	B
71	G2.2.35 1	1.00	MCS	C
72	G2.3.13 1	1.00	MCS	B
73	G2.3.4 1	1.00	MCS	B
74	G2.4.22 1	1.00	MCS	D
75	G2.4.6 1	1.00	MCS	D
SECTION 1 (75 items)		75.00		