

Final Submittal

(Blue Paper)

SEQUOYAH APRIL/MAY 2007 EXAM

**EXAM NOS. 05000327/2007301
AND 05000328/2007301**

**APRIL 9 - 11, 2007 AND
MAY 9, 2007 (written)**

Senior Operator Written Examination

U.S. Nuclear Regulatory Commission**Site-Specific SRO Written Examination****Applicant Information**

Name:

Date: 05/09/2007

Facility/Unit: Sequoyah

Region: I / II / III / IVReactor 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 overall, with a 70.00 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80.00 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

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

Applicant's Signature

Results

RO/SRO-Only/Total Examination Values ____ / ____ / ____ Points

Applicant's Score ____ / ____ / ____ Points

Applicant's Grade ____ / ____ / ____ Percent

ANSWER KEY REPORT
for SQN SRO Examination 5-2007 Test Form: 0

#	ID	Answers
1	001 AA2.04 1	C
2	001 K2.03 1	A
3	003 K4.04 1	C
4	004 A2.03 1	B
5	005 A1.01 1	A
6	005 AA2.02 1	B
7	005 K1.01 1	B
8	006 A3.01 1	C
9	006 K3.01 1	D
10	007 EA1.08 1	B
11	007 K1.03 1	B
12	008 A4.09 1	D
13	010 K2.03 1	C
14	011 EK3.14 1	D
15	012 K1.04 1	C
16	012 K2.01 1	A
17	013 K3.03 1	D
18	015 AA2.10 1	D
19	015 K1.08 1	B
20	017 A4.02 1	C
21	022 A4.01 1	B
22	022 AK3.03 1	B
23	025 A2.06 1	D
24	025 AK1.01 1	B
25	026 G2.4.6 1	B
26	026 K4.01 1	B
27	027 G2.4.6 1	C
28	028 AK3.05 1	B
29	028 K6.01 1	A
30	029 A4.01 1	B
31	029 G2.2.25 1	D
32	034 A3.02 1	A
33	035 K5.03 1	C
34	038 EK3.06 1	B
35	039 A2.04 1	D
36	039 A3.02 1	C
37	055 EK3.01 1	C
38	056 G2.4.31 1	A
39	057 AK3.01 1	A
40	058 AA1.01 1	B
41	059 A1.07 1	B
42	059 AK1.02 1	A
43	060 AK1.01 1	B
44	061 K6.02 1	A
45	062 AK3.01 1	B
46	062 G2.1.10 1	A

ANSWER KEY REPORT
for SQN SRO Examination 5-2007 Test Form: 0

#	ID	Answers
47	063 G2.2.22 1	B
48	064 K4.01 1	D
49	068 AK2.02 1	B
50	071 K3.04 1	D
51	073 A2.01 1	B
52	073 K5.01 1	B
53	074 EA1.08 1	D
54	075 G2.1.23 1	B
55	076 K1.16 1	A
56	078 K1.04 1	C
57	086 A2.01 1	C
58	103 A1.01 1	B
59	103 K3.03 1	C
60	E02 EA1.3 1	D
61	E04 G2.1.28 1	D
62	E05 EA1.3 1	C
63	E11 EK3.2 1	D
64	E12 G2.4.31 1	C
65	E13 EK2.1 1	B
66	G2.1.18 1	B
67	G2.1.2 1	A
68	G2.1.21 1	A
69	G2.2.12 2	A
70	G2.2.23 1	B
71	G2.2.26 1	A
72	G2.3.10 1	B
73	G2.3.2 1	D
74	G2.4.25 1	B
75	G2.4.9 1	C
SECTION 1 (75 items)		75.00

76	001 A2.12 1	C
77	007 EA2.06 1	B
78	007 G2.1.12 1	A
79	008 G2.4.4 1	B
80	011 EA2.10 1	C
81	022 A2.03 1	D
82	025 A2.01 1	A
83	026 G2.2.25 1	A
84	027 G2.4.49 1	B
85	039 G2.1.32 1	A
86	041 A2.03 1	A
87	045 G2.4.30 1	B
88	058 AA2.02 1	A
89	068 AA2.02 1	A

ANSWER KEY REPORT
for SQN SRO Examination 5-2007 Test Form: 0

#	ID	Answers
90	078 G2.4.6 1	A
91	E07 EA2.1 1	D
92	E09 G2.2.22 1	C
93	E15 G2.1.32 1	B
94	G2.1.13 1	B
95	G2.1.7 1	C
96	G2.2.5 1	A
97	G2.2.9 1	D
98	G2.3.4 1	D
99	G2.4.30 1	C
100	G2.4.49 1	C
SECTION BREAK (25 items)		25.00

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1. Given the following plant conditions:

- Unit 1 has just reached 90% power after a linear power ascension from 50% over the last four hours.
- Control Bank D continues to withdraw with no motion demanded.

Which ONE (1) of the following describes the initial effect on the unit?

- A. Reactor Power decreases AND OT Delta T setpoint decreases
- B. Reactor Power decreases AND OT Delta T setpoint increases
- C. Reactor Power increases AND OT Delta T setpoint decreases
- D. Reactor Power increases AND OT Delta T setpoint increases

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2. Which ONE (1) of the following is the primary source of power to the Rod Control Logic Cabinets?
- A. Rectified AC from the Rod Drive MG output.
 - B. Rectified AC from 120 VAC Instrument Bus
 - C. 125 VDC stepped down from station battery boards
 - D. 250 VDC stepped down from station battery boards

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3. On a loss of CCS to an RCP thermal barrier heat exchanger, which ONE (1) of the following choices contains parameters that indicate proper seal injection in accordance with AOP-M.03, Loss of Component Cooling Water?

	<u>Seal Injection Flow</u>	<u>VCT Outlet Temperature</u>
A.	6 GPM	126°F
B.	9 GPM	135°F
C.	12 GPM	128°F
D.	14 GPM	125°F

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4. Given the following plant conditions:

- Unit 1 is at 100% power.
- All control systems are in normal alignment.
- Charging flow is 92 GPM and rising.
- 1-TI-62-71, Regen HX Outlet Temp - Letdown, has decreased 5°F from its steady state value.
- VCT level is 33% and lowering.
- PZR level is 59% and lowering slowly.
- RCS temperature is 578°F and stable.

Which ONE (1) of the following describes the effect on the unit and the action required in accordance with AOP R.05, RCS Leak and Leak Source Identification?

- A. RCS leakage is from the charging line downstream of the regenerative heat exchanger. Make a containment entry to determine if the leak is isolable.
- B. RCS leakage is from the charging line downstream of the regenerative heat exchanger. Isolate Charging and Letdown.
- C. RCS leakage is from the charging line upstream of the regenerative heat exchanger. Initiate an investigation to determine if the leak is isolable.
- D. RCS leakage is from the charging line upstream of the regenerative heat exchanger. Isolate Charging and Letdown.

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5. Given the following plant conditions:

- Unit 1 cooldown in progress.
- RCS temperature is 225°F.
- Current RCS cooldown rate is 25°F per hour.

- The OATC is placing 1A-A RHR Pump in service in accordance with 0-SO-74-1, Section 5.5.2, Placing RHR in service for normal shutdown cooling.
- 1B-B RHR is out of service.

Which ONE (1) of the following actions is required to control **RHR HX temperature** in accordance with 0-SO-74-1, Residual Heat Removal System, and the reason?

	<u>RHR HX Flow Control</u>	<u>Reason</u>
A.	Throttle open RHR HX A CCS Outlet Valve FCV-70-156	To maintain RHR HX CCS outlet temperature <145°F.
B.	Throttle open RHR HX A CCS Outlet Valve FCV-70-156	To maintain RHR HX outlet to RCS temperature <235°F.
C.	Throttle open RHR HX A Outlet Valve FCV-74-16	To maintain RHR HX outlet to RCS temperature <235°F.
D.	Throttle open RHR HX A Outlet Valve FCV-74-16	To maintain RHR HX CCS outlet temperature <145°F.

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6. Given the following plant conditions:

- During a power decrease, ONE (1) Control Bank D rod becomes mispositioned 14 steps out from its group.
- The crew is attempting to realign the rod in accordance with the appropriate procedure.
- The rod has been misaligned for 40 minutes.

Assuming the rod can be moved, which ONE (1) of the following is the speed at which the rod will move when it is realigned?

- A. 32 steps per minute
- B. 48 steps per minute
- C. 64 steps per minute
- D. 72 steps per minute

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7. Given the following plant conditions:

- The Unit was in Mode 1, at 100% load.
- A LOCA is in progress.
- Step 11 (**DETERMINE** if RHR pumps should be stopped) of E-1, Loss of Reactor or Secondary Coolant, is in progress.
- RCS Pressure is 350 psig and dropping.
- Both RHR Pumps are running.

Which ONE (1) of the following procedural actions is required?

- A. Immediately stop both pumps and place handswitches in pull-to-lock .
- B. Open 1-FCV-70-153 and 156, CCS to the RHR Heat Exchangers.
- C. Transition to ECA-1.1, "Loss of RHR Recirc".
- D. Reset the Safety Injection Signal, stop both RHR Pumps, and place their Handswitches in A-Auto.

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8. Given the following plant conditions:

- A plant cooldown was in progress in accordance with 0-GO-7, Unit Shutdown from Hot Standby to Cold Shutdown.
- RCS pressure was at 800 psig when a LOCA occurred.
- RCS pressure is currently 450 psig and lowering slowly.

Which ONE (1) of the following describes the status of the ECCS equipment identified below?

- A. Cold Leg Accumulator level is stable;
RHR flow is rising
- B. Cold Leg Accumulator level is lowering;
RHR flow is zero
- C. Cold Leg Accumulator level is stable;
RHR flow is zero
- D. Cold Leg Accumulator level is lowering;
RHR flow is rising

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9. Given the following plant conditions:

- A LOCA has occurred.
- RCS pressure is 100 psig.
- All CETC's are reading approximately 810°F and rising slowly.
- Centrifugal Charging Pumps are running.
- Both SI pumps are tripped.
- RHR Pump 1A-A is tripped.
- RHR Pump 1B-B is running.
- RVLIS Lower Range Level is 55% and decreasing slowly.

In accordance with FR-0, Status Trees, which ONE (1) the following describes the current status of core cooling and the reason why?

- A. Core cooling is inadequate because both SI pumps are required to sustain core cooling.
- B. Core cooling is inadequate because RVLIS Lower Range level is too low to sustain core cooling.
- C. Core cooling is degraded because both SI pumps are required to sustain core cooling.
- D. Core cooling is degraded because RVLIS Lower Range level is too low to sustain core cooling.

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10. Given the following plant conditions:

- Unit 1 was operating at 40% power.
- 1A-A EDG was running in parallel for monthly surveillance testing.
- A reactor trip occurred due to a loss of offsite power.
- Tavg is 549°F and decreasing.
- All equipment is operating as designed.
- SG levels dropped to the following values:
 - SG 1 - 10% NR
 - SG 2 - 14% NR
 - SG 3 - 17% NR
 - SG 4 - 12% NR

Which ONE (1) of the following describes the operation of the 1A-A MDAFW and Turbine Driven AFW pumps?

	<u>1A-A MDAFW Pump</u>	<u>TDAFW Pump</u>
A.	OFF	OFF
B.	RUNNING	RUNNING
C.	RUNNING	OFF
D.	OFF	RUNNING

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11. Given the following plant conditions:

- A reactor trip has occurred.
- RCS pressure is 1810 psig and lowering.
- Containment Pressure is 1.5 psig and rising.

Which ONE (1) of the following describes the status of RCP #1 seal leakoff?

Directed to...

- A. VCT
- B. PRT
- C. RCDD
- D. Reactor Building Floor and Equipment Sump

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12. Given the following plant conditions:

- Unit 1 is operating at 100% RTP
- 0-XA-55-27B-B, Window A-5, "LETDOWN HX OUTLET FLOW/TEMP ABNORMAL" alarms.
- The RO determines that Letdown HX Outlet temperature is 132°F and rising slowly.

Which ONE (1) of the following describes the event that has occurred, and the effect on the unit prior to any action by the crew?

1-TCV-70-192, Letdown Heat Exchanger Temperature Control Valve,.....

- A. temperature input is failing high. Mixed Bed demins have automatically bypassed.
- B. temperature input is failing high. Letdown is aligned to the Mixed Bed demins.
- C. temperature input is failing low. Mixed Bed demins have automatically bypassed.
- D. temperature input is failing low. Letdown is aligned to the Mixed Bed demins.

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13. Which ONE (1) of the following describes the power supplies to the PZR PORVs and their associated MCR position indicating lights?

	<u>PORVs</u>	<u>Indicating Lights</u>
A.	120 VAC Vital Instrument Power	125 VDC Vital Battery Boards
B.	125 VDC Vital Battery Boards	120 VAC Vital Instrument Power
C.	125 VDC Vital Battery Boards	125 VDC Vital Battery Boards
D.	120 VAC Vital Instrument Power	120 VAC Vital Instrument Power

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14. Given the following plant conditions:

- A LOCA has occurred.
- Safety Injection has failed to actuate.
- The crew is performing E-0, Reactor Trip or Safety Injection.
- RCS pressure is 100 psig and lowering.
- Containment pressure is 5.5 psig and rising.
- The crew is attempting to initiate ECCS flow.

Which ONE (1) of the following describes the operation of RCPs for this event?

- A. Maintain RCPs running to provide core cooling until SI is actuated.
- B. Maintain RCPs running to prevent phase separation of RCS liquid.
- C. Trip all RCPs to minimize mass flow out of the RCS break.
- D. Trip all RCPs to prevent damage due to loss of cooling water flow.

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15. Given the following plant conditions:

- A secondary steam leak has occurred with Control Bank D initially at 220 steps.
- Over the past 5 minutes, reactor power has been slowly rising, followed by a sharp spike from 104% to approximately 109%.
- All equipment has operated as designed in response to the transient.

Which ONE (1) of the following describes the Control Bank D Rod Position and Group Demand indications following the termination of this event?

- A. Rod Bottom Lights extinguished; Group Demand indication at 220 steps.
- B. Rod Bottom Lights extinguished; Group Demand indication less than 220 steps.
- C. Rod Bottom Lights illuminated; Group Demand indication less than 220 steps.
- D. Rod Bottom Lights illuminated; Group Demand indication at 220 steps.

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16. Given the following plant conditions:

- Unit 1 is at 100% power.
- A loss of 125 VDC Vital Battery Board I occurs.

Which ONE (1) of the following describes the ^{direct} effect on the associated Reactor Trip Breaker? *RHE
5/9/07*

- A. Reactor Trip Breaker indication on the MCB is lost and RTA is NOT capable of tripping on a SHUNT trip.
- B. Reactor Trip Breaker indication on the MCB is lost and RTA trips OPEN.
- C. Reactor Trip Breaker indication on the MCB remains lit and RTA trips OPEN.
- D. Reactor Trip Breaker indication on the MCB remains lit and RTA is NOT capable of tripping on a SHUNT trip.

added "direct" to stem per telecon with Mont Bates

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17. Given the following plant conditions:

- A Loss of Off-Site Power has occurred.
- A steam line break generated a safety injection signal but only Train B of Safety Injection actuated.
- Containment pressure indicates 2.9 psig and rising.

Assuming no manual actions have been initiated, which ONE (1) of the following correctly describes a consequence of the failure of Train A of Safety Injection to actuate?

- A. 1A-A CCP will NOT be sequenced onto the Shutdown Board.
- B. Only two Main Steam Isolation Valves (MSIV's) will be closed.
- C. Only one Phase B Containment Isolation Valve in each penetration will be closed.
- D. Only one Phase A Containment Isolation Valve in each penetration will be closed.

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18. Given the following plant conditions:

- A malfunction has occurred that resulted in a reduction of Component Cooling Water (CCS) flow to the RCPs.
- The US has entered AOP-M.03, Loss of Component Cooling Water.
- The OATC is referring to AOP-R.04, Reactor Coolant Pump Malfunctions.
- Current parameters for ALL RCPs are as follows:
 - RCP Lower Bearing temperature is 222°F and rising.
 - RCP Seal Water Outlet temperature is 228°F and rising.

Based on current conditions, which ONE (1) of the following describes the action required in relation to the RCPs?

- A. Initiate a plant shutdown to Mode 3.
Trip RCPs based upon RCP Lower Bearing temperature exceeding an operating limit.
- B. Trip the reactor and enter E-0, Reactor Trip or Safety Injection.
Trip RCPs based upon RCP Lower Bearing temperature exceeding an operating limit.
- C. Initiate a plant shutdown to Mode 3.
Trip RCPs based upon RCP Seal Water Outlet temperature exceeding an operating limit.
- D. Trip the reactor and enter E-0, Reactor Trip or Safety Injection.
Trip RCPs based upon RCP Seal Water Outlet temperature exceeding an operating limit.

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19. Given the following plant conditions:

- Unit 1 is in Mode 5
- Operators are preparing for a plant heatup.

Which ONE (1) of the following describes the MINIMUM requirement for monitoring Source Range indications while starting RCPs, and the reason why, in accordance with the precautions and limitations of 1-SO-68-2, RCP Operations?

- A. Monitor indications during startup of the **first** RCP to monitor for indications of a cold water transient.
- B. Monitor indications during startup of the **first** RCP to monitor for indications of a boron dilution event.
- C. Monitor indications during startup of **all** RCPs to monitor for indications of a cold water transient.
- D. Monitor indications during startup of **all** RCPs to monitor for indications of a boron dilution event.

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20. Given the following plant conditions:

- A LOCA has occurred.
- RCS pressure is 200 psig.
- Due to equipment failures, the crew has transitioned to FR-C.1, Response to Inadequate Core Cooling.

Which ONE (1) of the following describes operation of the RCPs for this event?

- A. RCPs are only started following transition to SACRG-1.
- B. All available RCPs are started prior to performing secondary depressurization.
- C. If secondary depressurization is ineffective as determined by Core Exit Thermocouple temperature greater than 1200°F, then start one RCP at a time, if available.
- D. Following secondary depressurization and when its associated SG NR level is greater than 10% and support conditions are established per EA-68-2, Establishing RCP Start Conditions, then start each available RCP.

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21. Given the following plant conditions:

- Reactor Trip & Safety Injection occurred due to Large Break LOCA.
- Containment Phase B isolation has occurred
- All systems responded normally

Which ONE (1) of the following describes the response of the Lower Compartment Coolers when Phase B is reset?

Fans in A-P AUTO

Cooler ERCW Valves

A. remain off

Cooler ERCW containment isolation valves open.

B. start

Cooler ERCW containment isolation valves remain closed.

C. remain off

Cooler ERCW containment isolation valves remain closed.

D. start

Cooler ERCW containment isolation valves open.

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22. Given the following plant conditions:

- Unit 1 is at 100% RTP when a small RCS leak develops.
- The operating crew takes the necessary actions to stabilize PZR level.
- Subsequently, the crew attempts to determine the leakage source.
- After isolating charging and letdown, the crew observes the following parameters/indications:
 - Letdown flow 0 gpm;
 - Contmt pressure approximately 0.3 and decreasing;
 - RCS pressure approximately 2235 psig and stable;
 - Pzr level approximately 82% and increasing;
 - Charging flow 40 gpm;
 - Contmt radiation monitors trending downward slowly.

Which ONE (1) of the following actions will the operating crew perform next?

- A. Immediately trip the reactor and enter E-0, Reactor Trip or Safety Injection because PZR level exceeds the maximum limit.
- B. Place excess letdown in service and adjust seal injection flow to maintain PZR level within limits.
- C. Initiate Emergency Shutdown per AOP-C.03, Emergency Shutdown due to RCS leakage exceeding limits.
- D. Re-establish normal letdown and dispatch leak search team to identify leakage source.

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23. Given the following plant conditions:

- Unit 1 is at 100% power.
- Ice Condenser Floor Glycol Temperature Control Valve 1-TCV-61-71 setpoint fails.
- Ice Condenser floor temperature is 12°F and lowering.

Which ONE (1) of the following describes the potential effect of this failure, and the action(s) required in accordance with SO-61-1, Ice Condenser?

- A. Excessive sublimation of the ice bed; throttle closed 1-TCV-61-71 Bypass valve 1-61-751, Temperature Control Valve Bypass Valve.
- B. Excessive sublimation of the ice bed; close 1-TCV-61-71 isolation valve and operate 1-61-751, Temperature Control Valve Bypass Valve, to control temperature.
- C. Ice Condenser door binding; throttle closed 1-TCV-61-71 Bypass valve 1-61-751, Temperature Control Valve Bypass Valve.
- D. Ice Condenser door binding; close 1-TCV-61-71 isolation valve and operate 1-61-751, Temperature Control Valve Bypass Valve, to control temperature.

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24. Given the following plant conditions:

- Unit 2 is in Mode 6.
- RCS drained to elevation 701 feet.
- Upper internals are installed.
- RCS temperature is 110°F.
- Core decay heat is approximately 5 MW.
- A total loss of RHR cooling has occurred.

Which ONE (1) of the following is correct concerning the amount of time it will take to reach 200°F in the RCS using 0-GO-15, App. U, Time for RCS to reach 200°F?

Reference Provided

- A. 26 minutes
- B. 32 minutes
- C. 43 minutes
- D. 306 minutes

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25. The following plant conditions exist on Units 1 and 2:

- Unit 1 is at 100% RTP.
- 1 B-B Containment Spray Pump is tagged for maintenance.
- Unit 1 CCS is supplying the Spent Fuel Pool Cooling System.
- C-S CCS pump suffers catastrophic bearing failure.

Which ONE of the following describes the actions required, if any, to provide B train cooling for the given conditions in accordance with AOP-M.03, Loss of Component Cooling Water?

- A. No required actions.
- B. Only 2B-B CCS pump can be realigned for B train cooling.
- C. Only 1B-B CCS pump can be realigned for B train cooling.
- D. Either the 1B-B or 2B-B CCS pump can be realigned for B train cooling.

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26. Which ONE (1) of the following states the interlock(s) that must be satisfied before FCV-72-22 (Containment Spray Suction from RWST) ("B" train) can be opened?
- A. FCV-63-73 (RHR Suction from Containment Sump) closed.
 - B. FCV-72-23 (Containment Spray Suction from Containment Sump) closed.
 - C. FCV-74-21 **or** FCV-74-3 (RHR Pump Inlet from RWST) control valves closed.
 - D. FCV-74-21 **and** FCV-74-3 (RHR Pump Inlet from RWST) control valves closed.

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27. Given the following plant conditions:

- A reactor trip and safety injection has occurred on Low PZR pressure.
- The crew is performing E-0, Reactor Trip or Safety Injection.
- All Train A ECCS equipment is operating as required.
- Train B ECCS equipment has failed to start.
- All RCPs are running.
- While performing E-0 step 10, Check pressurizer PORVs, safety valves and spray valves, the following indications are observed by the OATC:
 - RCS pressure is 1200 psig.
 - PZR level is 100%.
 - PORV 68-340 red position indicator is **lit**.
 - Both PZR Spray Valve indicators are **not lit**.

Which ONE (1) of the following describes the actions that are required in accordance with E-0?

- A. Leave RCPs running, attempt to close the failed open PORV and/or block valve.
- B. Leave RCPs running, attempt to close the failed open PZR Spray Valve.
- C. Trip RCPs; attempt to close the failed open PORV and/or block valve.
- D. Trip RCPs; attempt to close the failed open PZR Spray Valve.

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28. Given the following plant conditions:

- Unit 1 is at 100% power.
- Load is being reduced to 50% to remove a Main Feedwater Pump from service.
- Pressurizer Level Control is selected to LI-68-339.
- The Pressurizer Level Master Controller setpoint fails at its current value.
- The load reduction is initiated.

Which ONE (1) of the following describes the effect on the unit and the action(s) required?

- A. Actual pressurizer level will be higher than program level for the actual power level as load is decreased;
Change the pressurizer level channel input to the master controller and restore Letdown.
- B. Actual pressurizer level will be higher than program level for the actual power level as load is decreased;
Take manual control of Charging flow.
- C. Actual pressurizer level will be lower than program level for the actual power level as load is decreased;
Take manual control of Charging flow.
- D. Actual pressurizer level will be lower than program level for the actual power level as load is decreased;
Change the pressurizer level channel input to the master controller and restore Letdown.

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29. Given the following plant conditions:

- Unit 1 was at 100% power
- A LOCA has occurred

Which ONE (1) of the following describes the effect on Containment if B train Hydrogen Recombiner is lost after SI initiates?

Containment hydrogen concentration will _____

- A. remain below 4%.
- B. increase to greater than 4% but less than 8%.
- C. increase to greater than 8% UNLESS Containment Purge is placed in service.
- D. increase to greater than 8% UNLESS Hydrogen Igniters are placed in service.

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30. Given the following plant conditions:

- Unit 1 is in Mode 6.
- A Containment Purge is planned.

Which ONE (1) of the following conditions requires a limit on the maximum flow for Containment Purge, and what is the maximum flow for the condition in accordance with SO-30-3, Containment Purge System Operation?

- A. Fuel Handling activities inside containment are in progress; 8,000 CFM
- B. Fuel Handling activities inside containment are in progress; 16,000 CFM.
- C. SFP Fuel Transfer Tube is open; 8,000 CFM
- D. SFP Fuel Transfer Tube is open; 16,000 CFM.

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31. Which ONE (1) of the following describes the purpose of the AMSAC system during an ATWS?
- A. ONLY prevents exceeding the Reactor Core Safety Limit .
 - B. ONLY prevents exceeding the RCS Pressure Safety Limit .
 - C. ONLY maintains Fuel Integrity.
 - D. Maintains Fuel Integrity AND prevents exceeding the RCS Pressure Safety Limits.

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32. Which ONE (1) of the following describes the function of the Unit 1 Manipulator Crane SENSOTEC load system interlock, SEN-8H, Light Assembly Overload Limit Switch?
- A. Stops upward motion of the hoist and illuminates the overload light.
 - B. Prevents gripper from disengaging.
 - C. Stops hoist travel in the down direction, if over the reactor core and the gripper is not disengaged.
 - D. Stops bridge travel at the edge of the reactor until the trolley is aligned with the transfer system centerline.

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33. Which ONE (1) of the following describes the basis for programmed SG level setpoints?
- A. 33% level at low power is low enough to prevent flooding of the moisture separators from a 10% step load increase.
 - B. 44% above 20% power is low enough to minimize water carryover from a postulated steam line break.
 - C. 44% above 20% power is high enough to minimize the probability of a reactor trip caused by shrink due to a load rejection at high power.
 - D. 33% at low power is high enough to keep the SG feed ring covered in the event of an inadvertent MSIV closure.

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34. When performing E-3, Steam Generator Tube Rupture, why is it important to isolate the ruptured steam generator from the intact steam generators?
- A. Ensures that RCS pressure, during the RCS depressurization following the cooldown, does not reach the RCP trip criteria.
 - B. Ensures RCS Subcooling is maintained when primary to secondary leakage is terminated in subsequent steps.
 - C. Ensures that the subsequent cooldown will NOT result in a challenge to the PTS Safety Function.
 - D. Ensures that the differential pressure between the intact and ruptured SGs remains high enough to ensure early detection of subsequent failures.

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35. Given the following plant conditions:

- Unit 2 is at 15% power during startup.
- Steam Dumps are operating in the Steam Pressure mode.
- Main Steam Header pressure instrument PT-1-33 fails **high**.

Which ONE (1) of the following describes the effect on the unit, and the actions required to control RCS temperature?

- A. Steam Dumps will fail closed.
Place and maintain the Steam Dump mode selector in OFF/RESET, then place the controller in MANUAL and throttle open the steam dumps.
- B. Steam Dumps will fail open.
Place and maintain the Steam Dump mode selector in OFF/RESET, then place the controller in MANUAL and throttle closed the steam dumps.
- C. Steam Dumps will fail closed.
Place and maintain the steam dump controller in MANUAL and throttle open the steam dumps.
- D. Steam Dumps will fail open.
Place and maintain the steam dump controller in MANUAL and throttle closed the steam dumps.

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36. Given the following plant conditions:

- A plant cooldown is in progress.
- RCS pressure is 1850 psig.
- RCS temperature is 505°F.
- All required actions have been taken for the cooldown in accordance with plant procedures.

An event occurs:

- RCS pressure is 1700 psig and lowering at 10 psi per second.
- SG pressures are 700 psig and lowering at 25 psi per second.
- Containment pressure is 1.2 psig and rising.

Assuming all equipment operates as designed, which ONE (1) of the following describes the ESF actuation status?

- A. Safety Injection has occurred; Main Steam Line Isolation has occurred.
- B. Safety Injection has occurred; Main Steam Line Isolation has NOT occurred.
- C. Safety Injection has NOT occurred; Main Steam Line Isolation has occurred.
- D. Safety Injection has NOT occurred; Main Steam Isolation has NOT occurred.

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37. Which ONE (1) of the following describes the minimum amount of time and reason why the station batteries (and load shedding instructions) are designed to ensure DC power is available after a loss of all AC power?

	<u>Time</u>	<u>Reason</u>
A.	2 Hours	station blackout rule
B.	2 Hours	technical specification requirement
C.	4 Hours	station blackout rule
D.	4 Hours	technical specification requirement

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38. Given the following plant conditions:

- Unit 1 is at 80% power.
- The following alarm is received:
 - 1-AR-M1-B, B3, 6900V UNIT BD 1C FAILURE OR UNDERVOLTAGE
- Unit Board 1C has an 86-1C relay, Unit Board Differential Lockout, actuated.

Which ONE (1) of the following describes the unit condition and the actions required in accordance with the alarm response?

- A. A fault on Unit Board 1C; The unit should have tripped; Trip the reactor and enter E-0, Reactor Trip or Safety Injection.
- B. A fault on Unit Board 1C; The board should have transferred to the alternate feeder; Verify the alternate feeder is closed and operate the normal feeder control switch to clear the disagreement light.
- C. Loss of Off-Site power to Unit Board 1C; The unit should have tripped; Trip the reactor and enter E-0, Reactor Trip or Safety Injection.
- D. Loss of Off-Site power to Unit Board 1C; The board should have transferred to the alternate feeder; Verify the alternate feeder is closed and operate the normal feeder control switch to clear the disagreement light.

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39. Given the following plant conditions:

- Unit 1 is at 100% RTP.
- A loss of 120V AC Vital Instrument Power Board 1-IV occurs.
- A reactor trip does NOT occur.

Which ONE (1) of the following describes the actions required and the reason for the actions in accordance with AOP-P.03, Loss of Unit 1 Vital Instrument Power Board?

- A. Place rod control in MANUAL due to loss of Auctioneered Tavg input; Control #4 Feedwater Reg Valve manually due to loss of AUTO control.
- B. Place rod control in MANUAL due to loss of Auctioneered Tavg input; Control #2 Feedwater Reg Valve manually due to loss of AUTO control.
- C. Place rod control in MANUAL due to loss of Tref input; Control #4 Feedwater Reg Valve manually due to loss of AUTO control.
- D. Place rod control in MANUAL due to loss of Tref input; Control #2 Feedwater Reg Valve manually due to loss of AUTO control.

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40. Given the following plant conditions:

- Unit 1 is steady-state at 100% power.
- Unit 2 is in Mode 6 with vessel upper internals removal in progress.
- 125V DC Vital Battery IV Output Breaker tripped and can't be reclosed.

Which ONE (1) of the following describes the required action(s) in accordance with AOP-P.02, Loss of 125V DC Vital Battery Board?

- A. Align 125V DC Vital Battery Bank V and Charger 1-S (spare) to Vital Battery Board IV.
- B. Align 125V DC Vital Battery Bank V and Charger 2-S (spare) to Vital Battery Board IV.
- C. Suspend core alterations on Unit 2 until 125V DC Channel IV is returned to OPERABLE status.
- D. Restore 125V DC Channel IV to OPERABLE status within 1 hour or initiate a shutdown of Unit 1.

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41. Given the following plant conditions:

- Unit 1 is at 100% power
- All controls in automatic
- All four main feedwater flows start increasing
- All four steam generator levels trending upwards.

For information:

- PT-1-33 is a Main steam header pressure transmitter
- PT-3-1 is a Main feedwater header pressure transmitter

Which ONE (1) of the following identifies the two instrument failures that would cause this transient? (consider each failure separately)

	<u>PT-1-33</u>	<u>PT-3-1</u>
A.	failed LOW	failed LOW.
B.	failed HIGH	failed LOW.
C.	failed LOW	failed HIGH.
D.	failed HIGH	failed HIGH.

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42. Given the following plant conditions:

- An accidental spill of the Monitor Tank has occurred in the Aux Building.
- Radiation levels in the area of the spill are 40 mRem per hour at 30 cm.
- Contamination levels on the floor around the tank are $1.2E^4$ DPM/100 cm².

Which ONE (1) of the following describes how the area will be posted?

- A. Radiation Area AND Contamination Area
- B. High Radiation Area AND Contamination Area
- C. Radiation Area AND High Contamination Area
- D. High Radiation Area AND High Contamination Area

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43. Which ONE (1) of the following describes a potential monitored location for airborne effluents of gaseous waste and the correct unit of measurement for the effluent?

	<u>Monitored Location</u>	<u>Unit of Measurement</u>
A.	Turbine Building Vent	counts per minute
B.	Service Building Vent	counts per minute
C.	Turbine Building Vent	mRem per hour
D.	Service Building Vent	mRem per hour

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44. Given the following plant conditions:

- Unit 2 is in Mode 1.
- The TDAFW Pump is tagged out of service.
- A Loss of Feedwater causes a reactor trip.
- Coincident with the trip, 2B-B Shutdown Board Bd Differential trip actuates.

Which ONE (1) of the following describes the Auxiliary Feedwater alignment and approximate flow rates?

- A. 1 and 2 SGs being fed at 220 GPM each
- B. 1 and 2 SGs being fed at 440 GPM each
- C. ALL SGs being fed at 110 GPM each
- D. ALL SGs being fed at 220 GPM each

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45. Given the following plant conditions:

- Unit 1 is tripped.
- The crew is performing actions of AOP-M.01, Loss of Essential Raw Cooling Water.
- ERCW Supply Header 2B to the Aux Building and 0-FCV-67-152, CCS OB1/OB2 Discharge Valve to header B, have been isolated to stop the leak.
- A Safety Injection signal is subsequently received.

Which ONE (1) of the following describes the position of 0-FCV-67-152 for these conditions, and status of flow through the OB1/OB2 CCS Heat Exchanger?

- A. The valve will open to its 35% open position. ERCW flow will be provided from Header 1B.
- B. The valve will open to its 35% open position. NO ERCW flow will be provided.
- C. The valve will open to its 50% open position. NO ERCW flow will be provided.
- D. The valve will open to its 50% open position. ERCW flow will be provided from Header 1B.

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46. Which ONE (1) of the following describes the MINIMUM Mode 5 requirements for operability of the AC Distribution system for Unit 1?
- A. Vital Instrument Power Boards 1-I, 1-III operable.
 - B. Vital Instrument Power Boards 1-I, 2-I, 1-III, 2-III operable.
 - C. Vital Instrument Power Boards 1-I, 1-IV operable.
 - D. Vital Instrument Power Boards 1-I, 1-II, 2-I, 2-II operable.

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47. Given the following plant conditions:

- Unit 2 is operating steady-state at 100% power
- All systems are normally aligned

Which ONE (1) of the following would result in the unit being in the action of Tech Spec LCO 3.8.2.3, DC Distribution, at the conclusion of the alignment?

- A. Battery Bank V is aligned to replace Vital Battery II supply to Vital Battery Board II.
- B. Battery Charger V is aligned to replace Charger III supply to Vital Battery Board III.
- C. The Spare Vital Battery Charger 1-S is aligned to 480V Shutdown Board 1B1-B while supplying Vital Battery Board II.
- D. The Spare Vital Battery Charger 2-S is aligned to 480V Shutdown Board 2A2-A while supplying Vital Battery Board III.

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48. Diesel Generator 1A-A has been started by the manual emergency start switch on the M-1 panel.

Which ONE (1) of the following conditions / actions will stop Diesel Generator 1A-A?

- A. Low lube oil pressure
- B. High jacket water temperature
- C. Actuation of the generator reverse power relay
- D. Actuation of the generator differential relay

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49. Given the following plant conditions:

- Unit 1 is at 100% RTP when a fire occurs in the cable spreading room.
- Due to the large amount of smoke in the main control room, it is decided by the Shift Manager that the main control room must be abandoned.

Which ONE (1) of the following responses below describes the proper operating crew actions for the given conditions?

- A. Prior to evacuation, trip the reactor in the Main Control Room and perform post trip actions in accordance with E-0, Reactor Trip or Safety Injection.
- B. Prior to evacuation, trip the reactor in the Main Control Room and dispatch personnel to perform applicable sections of AOP-C.04, Shutdown From Auxiliary Control Room, Appendix Z.
- C. Evacuate the Main Control Room, then trip the reactor from the Auxiliary Control Room after the Auxiliary Control Room is manned and perform post trip actions in accordance with E-0, Reactor Trip or Safety Injection.
- D. Evacuate the Main Control Room, then trip the reactor from the Auxiliary Control Room after the Auxiliary Control Room is manned and dispatch personnel to perform applicable sections of AOP-C.04, Shutdown From Auxiliary Control Room, Appendix Z.

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50. Given the following plant conditions:

- A Gas Decay tank release is in progress with A- A ABGTS running for dilution flow.
- A leak occurs on the waste gas compressor which results in a gas release to the Auxiliary Building.
- 0-RE-90-101, Auxiliary Building Vent Monitor, is in alarm.

Which ONE (1) of the following indicates the effect this leak will have on the plant?
(Assume no operator actions)

- A. Gas Decay Tank release will be terminated; ONLY A-A ABGTS will be running.
- B. Gas Decay Tank release will be terminated; BOTH A-A and B-B ABGTS will be running.
- C. Gas Decay Tank release will continue; ONLY A-A ABGTS will be running.
- D. Gas Decay Tank release will continue; BOTH A-A and B-B ABGTS will be running.

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51. Given the following plant conditions:

- Unit 1 is at 100% RTP.
- Alarm "1-RA-120B/121B STM GEN BLDN LIQ SAMP MON INSTR MALFUNC" annunciates.

Which ONE (1) of the following describes the cause of the alarm and the mitigating actions that the crew should implement?

<u>Cause</u>	<u>Mitigating Action</u>
A. Loss of power to the radiation monitor	Manually terminate S/G blowdown release. (there is no automatic termination)
B. Loss of power to the radiation monitor	Verify automatic termination of S/G blowdown release.
C. High flow through the radiation monitor	Verify automatic termination of S/G blowdown release.
D. High flow through the radiation monitor	Manually terminate S/G blowdown release. (there is no automatic termination)

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52. Which ONE (1) of the following describes the type of radiation detector used by the Condenser Vacuum Exhaust Radiation Monitor 1-RM-90-119, and whether condenser vacuum exhaust stack backpressure affects sample flow for 1-RM-90-119?
- A. Scintillation detector. Backpressure does not affect the sample flow.
 - B. Scintillation detector. Backpressure does affect the sample flow.
 - C. Geiger-Mueller detector. Backpressure does not affect the sample flow.
 - D. Geiger-Mueller detector. Backpressure does affect the sample flow.

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53. Given the following plant conditions:

- The crew is responding to a LOCA.
- RCS pressure is 400 psig.
- Containment pressure is 7.5 psig.
- Due to equipment failures, the crew has entered FR-C.1, Response to Inadequate Core Cooling.

Which ONE (1) of the following methods is the **highest** priority in restoring the Core Cooling CSF?

- A. Depressurize the RCS by venting to Containment.
- B. Initiate RHR flow to provide maximum cooling flow.
- C. Rapidly depressurize the secondary to facilitate RCS depressurization.
- D. Start available CCP and SI pumps and align ECCS valves as necessary.

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54. Given the following plant conditions:

- Unit 1 is in Mode 3.
- Condenser vacuum is being established.
- The crew is starting up the CCW system in accordance with 0-SO-27-1, Condenser Circulating Water System.

Which ONE (1) of the following describes the required sequence of actions to start the FIRST CCW Pump in accordance with 0-SO-27-1?

- A. 1-Verify Discharge valve 5% open
2-Place Control switch in START
3-Verify discharge valve travels full open
- B. 1-Verify discharge valve is closed
2-Place Control switch in START
3-STOP Discharge valve travel at 25% open
- C. 1-Verify discharge valve is closed
2-Place Control switch in START
3-Verify Discharge valve travels full open
- D. 1-Verify discharge valve is 5% open
2-Place Control switch in START
3-STOP Discharge valve travel at 25% open

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55. Given the following plant conditions:

- One ERCW pump is running off of each Shutdown Board.
- A Safety Injection occurs on Unit 1.
- After the SI, a loss of off-site power occurs.

Which ONE (1) of the following describes the preferred alignment of the ERCW pump selector switches per 0-SO-67-1, Essential Raw Cooling Water, and which pumps will be running after loads have sequenced on following the blackout?

	<u>Selector Switch Position</u>	<u>ERCW Pumps</u>
A.	Selected to the running pump	Pumps running prior to the blackout will be running
B.	Selected to the non-running pump	Pumps NOT running prior to blackout will be running
C.	Selected to the running pump	Pumps NOT running prior to blackout will be running
D.	Selected to the non-running pump	Pumps running prior to the blackout will be running

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56. Given the following plant conditions:

- Both units at 100% RTP.
- Aux Air Compressor "A" is running.
- Annunciator panel 1-XA-55-15B window C6 "LS-32-63 AUX AIR COMPR A LOW OIL LVL HI AIR TEMP" is in alarm.
- Auxiliary Building AUO reports a red indicating light for high discharge air temperature for Aux Air Compressor "A".

Which ONE (1) of the following is the correct crew response in accordance with 1-AR-M15B, C6?

- A. Verify Aux Air Compressor "A" automatically trips.
- B. Verify Aux Air Compressor "A" is running unloaded.
- C. Verify proper cooling valve alignment from ERCW supply header 1A to the compressor.
- D. Verify proper cooling valve alignment from ERCW supply header 1A and 1B cross-tie to the compressor.

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57. Given the following plant conditions:

- A fire has occurred on the Main Transformer.
- The Fire Brigade has extinguished the fire.
- The High Pressure Fire Protection System is being restored to normal in accordance with 0-SO-26-1 and 0-SO-26-2.
- An AUO is dispatched to the Fire Pump House to shut down the Fire Pump.
- System Header pressure is 100 psig when the order to shut down Fire Pump is given.

Which ONE (1) of the following describes the impact of the Fire Pump shutdown?

- A. The fire pump will **not** restart. HPFP tie to Potable Water will maintain system pressure at the normal standby value without Fire Pump operation.
- B. The fire pump will **not** restart. Jockey Pumps will operate to maintain system pressure at the normal standby value without Fire Pump operation.
- C. The fire pump will restart. Determine where system flow demand is coming from, and once corrected, attempt to shut down the Fire Pump again.
- D. The fire pump will restart. Ensure the HPFP header is repressurized to 105 psig prior to attempting another shutdown of the pump.

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58. Given the following plant conditions:

- The plant is in Mode 5.
- Containment Purge is in operation.
- The Personnel Airlock and Equipment Hatch are closed.
- The Containment Purge Exhaust Isolation valve is inadvertently closed.
- NO other components reposition.

Which ONE (1) of the following describes the containment parameter immediately affected by this failure and the design limit for that parameter?

	<u>Parameter</u>	<u>Design Limit</u>
A.	Temperature	250°F
B.	Pressure	12 psig
C.	Temperature	125°F
D.	Pressure	9.5 psig

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59. Given the following plant conditions:

- Unit 2 is in Mode 6.
- Core off-load is in progress.

Which ONE (1) of the following situations requires immediate suspension of irradiated fuel movement? (Consider each individually)

recently
^

*AMP
5/9/07*

- A. One Train of ABGTS is declared inoperable.
- B. Both Lower Containment Airlock doors are open.
- C. Equipment Hatch is closed with 2 bolts fastened.
- D. Containment Purge Supply Fan is declared inoperable

added "recently" to stem per telecom with Mark Bates.

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60. Given the following plant conditions:

Initial conditions:

- A steam break has occurred inside containment.
- Reactor trip and containment high-high pressure have actuated.
- The faulted S/G has completely blown down.
- The crew has entered ES-1.1, SI Termination.
- One containment spray pump is in service.

Current conditions:

- Containment pressure is 2.5 psig.
- The crew has just transitioned from ES-1.1 to the appropriate plant procedure.

Which ONE (1) of the following correctly describes the status of the CCPs and Containment Spray pump immediately upon transition from ES-1.1?

<u>CCP</u>	<u>Containment Spray Pump</u>
A. 1 CCP injecting via CCPIT	In Service
B. 1 CCP injecting via CCPIT	Stopped and placed in A-AUTO
C. 1 CCP injecting via seal injection and normal charging	Stopped and placed in A-AUTO
D. 1 CCP injecting via seal injection and normal charging	In Service

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61. Given the following plant conditions:

- Reactor Trip and Safety Injection have occurred on Unit 2.
- The crew has transitioned to ECA-1.2, LOCA Outside Containment.
- The leak location has NOT been identified and the crew is preparing to isolate Cold Leg Injection.
- Radcon reports increased radiation levels in the 690' Pipe Chase.

Which ONE (1) of the following describes how Cold Leg Injection is isolated, and how to determine if the leak has been stopped in accordance with ECA-1.2?

- A. Close FCV-63-93 and FCV-63-94, Cold Leg Injection Valves, simultaneously. Verify isolation by observing pressurizer level.
- B. Close FCV-63-93 and FCV-63-94, Cold Leg Injection Valves, simultaneously. Verify isolation by observing RCS pressure.
- C. Close FCV-63-93 and FCV-63-94, Cold Leg Injection Valves, one at a time. Verify isolation by observing pressurizer level.
- D. Close FCV-63-93 and FCV-63-94, Cold Leg Injection Valves, one at a time. Verify isolation by observing RCS pressure.

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62. Given the following plant conditions:

Unit 1 is responding to a Loss of Heat Sink per FR-H.1, Response to Loss of Secondary Heat Sink.

- All Steam Generator Wide Range levels are Off-Scale low.
- RCS temperature is approximately 588°F and rising slowly.

Which ONE (1) of the following describes the preferred method of initiating Auxiliary Feed flow for these conditions?

- A. Feed at the highest possible rate to one S/G to preclude initiation of RCS Bleed and Feed.
- B. Feed at the minimum required flow to prevent possible SG tube failures.
- C. Feed at the highest possible rate to one S/G to reestablish SG inventory and secondary heat sink.
- D. Feed at the minimum required flow to establish a controllable cooldown rate and prevent RCS pressure from reaching the PORV setpoint.

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63. Which ONE (1) of the following describes two objectives of procedure ECA-1.1, Loss of RHR Sump Recirculation?
- A. Ensure only one train of SI in service to prevent cavitation and initiate makeup to the RWST to ensure RCS inventory can be maintained.
 - B. Reduce SI flow to delay depletion of the RWST and stabilize RCS temperature to minimize RCS inventory requirements.
 - C. Perform necessary system alignments to restore emergency coolant recirculation capability and stabilize RCS temperature to minimize RCS inventory requirements.
 - D. Reduce SI flow to delay depletion of the RWST and perform necessary system alignments to restore emergency coolant recirculation capability

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64. Given the following plant conditions:

- A steam line rupture has occurred in the Unit 1 West Valve Vault Room.
- The crew was unable to isolate SGs.
- ECA-2.1, Uncontrolled Depressurization of All Steam Generators, is in progress.
- The crew has taken action to minimize the plant cooldown.
- AFW flow to S/Gs 1, 2, 3 and 4 are currently at 25 gpm.
- Thots are decreasing slowly.
- The following alarms are received:
 - 1-XA-M3-C3, STM GEN #1 LEVEL LOW
 - 1-XA-M3-C4, STM GEN #2 LEVEL LOW
 - 1-XA-M3-C5, STM GEN #3 LEVEL LOW
 - 1-XA-M3-C6, STM GEN #4 LEVEL LOW

Which ONE (1) of the following actions is required in accordance with ECA-2.1?

- A. Raise AFW flow to #1, #2, #3, and #4 SGs. The minimum NR level, per ECA-2.1, is 25%.
- B. Raise AFW flow to #1, #2, #3, and #4 SGs. The minimum NR level, per ECA-2.1, is 50%.
- C. Maintain AFW flow at its current value. If Thot starts to rise, raise AFW flow to stabilize RCS temperature.
- D. Maintain AFW flow at its current value. When 3 of 4 SGs are at the applicable setpoint, transition to FR-H.1, Response to Loss of Secondary Heat Sink.

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65. Given the following plant conditions:

- The crew entered FR-H.2, "Steam Generator Overpressure", due to an overpressure condition on S/G #2.
- SG #2 pressure is 1170 psig.
- S/G #2 narrow range level is 72%.

Which ONE (1) of the following describes the appropriate actions, in sequence, to mitigate this event in accordance with FR-H.2?

- A. First Verify Feedwater Isolation and then initiate SG Blowdown.
- B. First Verify Feedwater Isolation and then attempt to dump steam from the affected SG.
- C. First Isolate AFW flow and then initiate SG Blowdown.
- D. First Isolate AFW flow and then attempt to dump steam from the affected SG.

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66. In accordance with OPDP-1, Conduct of Operations, which ONE (1) of the following describes when the words 'LATE ENTRY' are required in eSOMS and how the 'LATE ENTRY' is made?

A late entry is required any time that required information was not entered at the time of event...

- A. if logs have NOT been approved since the time of the event.
Enter 'LATE ENTRY' followed by the event description.
- B. if logs have been approved since the actual time of the event.
Enter 'LATE ENTRY' followed by the event description.
- C. if logs have NOT been approved since the time of the event.
Enter the event description followed by 'LATE ENTRY'.
- D. if logs have been approved since the actual time of the event.
Enter the event description followed by 'LATE ENTRY'.

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67. OPDP-1, Conduct of Operations, describes the "Departure From License Condition" which can be invoked to protect the health and safety of the public.

As a minimum, which ONE (1) of the following conditions must ALWAYS be met when departing from a license condition or technical specification in accordance with 10 CRF 50.54 (x) and (y)?

- A. The action must be approved by a licensed SRO prior to taking the action.
- B. The action must be taken in accordance with the provisions of the Emergency Plan.
- C. The NRC must be notified prior to the action and must concur with the action to be taken.
- D. The Plant Manager must be notified prior to the action and must concur with the action to be taken.

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68. You are preparing to perform a control rod exercise surveillance on your shift.

BSL is not operating.

Which ONE (1) of the following describes the correct location(s) to obtain the current controlled copy revision of the procedure?

- A. Main Control Room ONLY
- B. Main Control Room, Operations Field Office ONLY
- C. Main Control Room, Work Control Center ONLY
- D. Main Control Room, Operations Field Office or Work Control Center

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69. Given the following plant conditions:

- Unit 2 is currently in MODE 4.
- At 0900 today, it is discovered that a routine 24-hour surveillance involving Shutdown Margin was last performed at 0600 on the previous day.

Which ONE (1) of the following is the LATEST time the surveillance may be performed in accordance with Technical Specification requirements?

- A. 1200 today
- B. 1500 today
- C. 0600 tomorrow
- D. 0900 tomorrow

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70. Which ONE (1) of the following describes the requirement for logging of LCO's in accordance with OPDP-8, Limiting Conditions for Operations Tracking, if the LCO is entered and exited during the same shift?

	<u>Unit Log</u>	<u>LCO Tracking Log</u>
A.	Log entry required	Log entry required
B.	Log entry required	Log entry NOT required
C.	Log entry NOT required	Log entry required
D.	Log entry NOT required	Log entry NOT required

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71. According to Tech Spec 3.9.3, Decay Time, which ONE (1) of the following describes when irradiated fuel movement in the reactor vessel would be allowed?

100 hours from _____

- A. Hot Standby
- B. Hot Shutdown
- C. Cold Shutdown
- D. Refueling Shtudown

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72. Given the following plant conditions:

- A rapid load reduction from 100% power to 60% power was performed on Unit 1 approximately 3 hours ago.
- Chemistry confirms that RCS I-131 activity exceeds Technical Specification limit of acceptable operation.
- The US directs a plant shutdown to be performed.

Which ONE (1) of the following post shutdown actions is subsequently performed to limit the release of activity?

- A. All MSIVs are closed
- B. RCS temperature is reduced below 500°F
- C. All S/G PORV setpoints are raised
- D. Maximum Condensate Polishers are placed in service

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73. Given the following conditions at a work site:

- Airborne activity - 3 DAC
- Radiation level - 40 mrem/hr.
- Radiation level with shielding - 10 mrem/hr.
- Time to place shielding - 15 minutes.
- Time to conduct task WITH respirator - 1 hour.
- Time to conduct task WITHOUT respirator - 30 minutes.

Assumptions:

- The airborne dose with a respirator will be zero.
- A dose rate of 40 mrem/hr will be received while placing the shielding.
- All tasks will be performed by one worker, including initial placement of shielding, if required.
- Shielding can be placed in 15 minutes with or without a respirator.
- The shielding will not be removed

Which ONE of the following would result in the lowest whole body dose?

- A. Conduct task WITHOUT respirator or shielding.
- B. Conduct task WITH respirator and WITHOUT shielding.
- C. Place shielding WITH respirator and conduct task WITH respirator.
- D. Place shielding WITH respirator but conduct task WITHOUT respirator.

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74. The following lines are observed on the 0-M-29 "Blue Goose" and printer:

- 2D43 A 50 IN 07-Nov-02 09:15 ZONE 85 CHARGING PUMP ROOM 2A CROSS ZONE W/ZONE 82 ACTUATES FSV-26-191;
- 2D46 A 50 IN 07-Nov-02 09:16 ZONE 82 U2 SI & CHARGING PUMP ROOMS CROSS ZONE W/ZONES 83, -84, -85, 86, & 87 ACTUATES FSV-26-191 ZN LOCATED IN PNL 0-L-606;
- 2H38 A 50 IN 07-Nov-02 09:16 PNL 0-L-670/ELECTRIC FIRE PUMP A RUNNING ZONE 528 FIRE PUMP HOUSE RM A NOT OPERATIONALLY REQUIRED ZONE SEND OPERATOR TO PUMP.

0-FCV-26-191 is an Auxiliary Building el 669' Pre-action Valve.

Which ONE (1) of the following describes the condition under which sprinkler flow occurs and the whether the fire brigade is required to be dispatched in accordance AOP-N.01, Plant Fires?

<u>Sprinkler Flow</u>	<u>Action Required</u>
A. sprinkler flow occurs with or without a heat source.	Fire Brigade is NOT immediately dispatched.
B. sprinkler flow occurs ONLY with a heat source.	Immediately dispatch the Fire Brigade.
C. sprinkler flow occurs with or without a heat source.	Immediately dispatch the Fire Brigade.
D. sprinkler flow occurs ONLY with a heat source.	Fire Brigade is NOT immediately dispatched.

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75. Given the following plant conditions:

- Unit 1 is in Mode 5.
- RCS temperature is 195°F.
- RCS pressure is 325 psig.
- Train "A" RHR in service.
- Train "B" RHR out of service for surveillance testing.
- SGs #2 and #3 are intact and at 33% NR.
- Pressurizer level at 30% cold cal.

Which ONE (1) of the following is the preferred method of core cooling if a loss of RHR shutdown cooling occurs with RCS temperature rising, in accordance with AOP-R.03, RHR System Malfunctions?

- A. RWST fill to RCS; bleed through Reactor Head Vents.
- B. Normal charging to RCS; bleed through RHR letdown.
- C. Natural or forced RCS flow while steaming intact S/Gs.
- D. Normal charging to RCS; bleed through the PZR PORVs.

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76. Given the following plant conditions:

- A reactor startup, using control rods, is in progress per 0-GO-2, Unit Startup From Hot Standby to Reactor Critical.
- RCS boron concentration value used in the ECP calculation is 1100 ppm.
- Actual current RCS boron concentration is 1000 ppm.

Which ONE (1) of the following describes the correct action?

The actual critical rod position will be.....

- A. LOWER than estimated. Immediately initiate Emergency Boration in accordance with EA-68-4, Emergency Boration.
- B. HIGHER than estimated. Immediately initiate Emergency Boration in accordance with EA-68-4, Emergency Boration.
- C. LOWER than estimated. Insert Control Banks and recalculate the ECP prior to re-initiating the startup if it becomes apparent that criticality will occur >1000 pcm below the Estimated Critical Rod Position.
- D. HIGHER than estimated. Insert Control Banks and recalculate the ECP prior to re-initiating the startup if it becomes apparent that criticality will occur >1000 pcm above the Estimated Critical Rod Position.

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77. Given the following plant conditions:

- A manual reactor trip was attempted.
- The following conditions exist:
 - Reactor Trip Breaker 'A' Red indication exists.
 - Reactor Trip Breaker 'B' Green indication exists.
 - Reactor Power is 3% and lowering.
 - Rod bottom lights are lit with the **exception** of FOUR control bank D rods. Their positions are as follows:
 - H-8 - 16 steps
 - K-2 - 220 steps
 - M-12 - 8 steps
 - M-8 - 20 steps

Which ONE (1) of the following describes the condition of the reactor, and the action that will be required?

- A. The reactor is tripped; perform normal RCS boration for the stuck rods as directed in ES-0.1, Reactor Trip Response.
- B. The reactor is tripped; initiate emergency boration for the stuck rods in accordance with EA 68-4, Emergency Boration, as directed in ES-0.1, Reactor Trip Response.
- C. The reactor is **not** tripped; manually insert control rods as directed in FR-S.1, Nuclear Power Generation/ATWS.
- D. The reactor is **not** tripped; initiate emergency boration for the stuck rods in accordance with EA 68-4, Emergency Boration, as directed in FR-S.1, Nuclear Power Generation/ATWS.

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78. Given the following plant conditions:

- The Control Room was evacuated due to a fire.
- The crew is preparing to cool down the RCS from the Aux Control Panel.
- All Pressurizer Relief Tank indications were lost during the fire.

Which ONE (1) of the following describes the impact, if any, on Technical Specification 3.3.3.5, Remote Shutdown Instrumentation, of the loss of PRT indication?

- A. Action will be entered for loss of PRT pressure indication ONLY.
- B. Action will be entered for loss of PRT level indication ONLY.
- C. Action will be entered for loss of PRT pressure and level indication.
- D. Action entry is NOT required.

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79. Given the following plant conditions:

- A LOCA has occurred.
- The crew has just entered E-1, Loss of Reactor or Secondary Coolant.
- The following parameters exist:
 - All SG pressures – 730 psig and slowly trending down.
 - All SG levels – being controlled at 40% NR.
 - PRZR level – off-scale high.
 - RVLIS Lower Range indicates 50%.
 - Containment Pressure – 2.5 psig.
 - RWST level – 74% and decreasing slowly.
 - RCS pressure – 875 psig and decreasing slowly.
 - Highest CET - 500°F.

Based on these indications, which ONE (1) of the following procedures will the crew enter next?

- A. ES-1.1, SI Termination
- B. ES-1.2, Post LOCA Cooldown and Depressurization
- C. ES-1.3, Transfer to RHR Containment Sump
- D. E-2, Faulted Steam Generator Isolation

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80. Given the following plant conditions:

- A Reactor Trip and Safety Injection have occurred.
- Containment pressure is 5.6 psig and stable.
- RCPs have been stopped.
- RVLIS Lower Range is indicating 35%.
- Core Exit Thermocouples are indicating 710°F.
- PZR level is off scale low.
- PZR pressure is 400 psig.
- RCS Wide Range Hot Leg Temperatures are indicating 680°F.

Which ONE (1) of the following conditions could currently exist, and which procedure would be required?

- A. A PZR vapor space break has occurred and a transition to FR-C.1, Response to Inadequate Core Cooling, is required.
- B. A PZR vapor space break has occurred and a transition to FR-C.2, Response to Degraded Core Cooling, is required.
- C. An RCS hot or cold leg break has occurred and a transition to FR-C.1, Response to Inadequate Core Cooling, is required.
- D. An RCS hot or cold leg break has occurred and a transition to FR-C.2, Response to Degraded Core Cooling, is required.

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81. Given the following plant conditions:

- Unit 1 is at 100% power.
- The following alarm is received:
 - 1-AR-M6E-E5, MOTOR TRIP OUT PNL 1-M-9
- Lower Compartment Cooling Fan 1B-B control switch has a white light illuminated.
- Fans 1A-A and 1C-A are running.

Which ONE (1) of the following describes the primary concern related to this failure, and the procedural action(s) required?

- A. Lower Ice Condenser doors may open due to high DP; Stop one Upper Compartment Cooling fan to equalize pressure in accordance with 1-AR-M6E-E5.
- B. Lower Ice Condenser doors may open due to high DP; Start any Lower Compartment Cooling fan in standby using the alarm response and 0-SO-30-5, Lower Compartment Cooling.
- C. PZR Enclosure may heat up and cause PZR Safety Valves to leak; Isolate the tripped cooler TCV and bypass the in-service Lower Compartment Cooler TCVs to increase cooling to the PZR Enclosure in accordance with 1-AR-M6E-E5.
- D. PZR Enclosure may heat up and cause PZR Safety Valves to leak; Start any Lower Compartment Cooling fan in standby using the alarm response and 0-SO-30-5, Lower Compartment Cooling.

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82. Given the following plant conditions:

- Unit 1 is at 100% power.
- The following alarm is received:
 - 1-AR-M6E, C7, FLOOR COOLANT DP LO

Which ONE (1) of the following describes the potential effect of this failure, and the action required to mitigate the effect?

- A. 1-AR-M6E, B6, FLOOR COOLANT TEMP HI, will alarm; Ensure at least 1 Glycol Floor Circ Pump is running in accordance with 1-AR-M6E, C7.
- B. 1-AR-M6E, B6, FLOOR COOLANT TEMP HI, will alarm; Swap Glycol Circ Pumps and chiller packages in accordance with 1-SO-61-1, Ice Condenser.
- C. 1-AR-M6E, B7, FLOOR COOLANT TEMP LO, will alarm; Ensure at least 1 Glycol Floor Circ Pump is running in accordance with 1-AR-M6E, C7.
- D. 1-AR-M6E, B7, FLOOR COOLANT TEMP LO, will alarm; Swap Glycol Circ Pumps and chiller packages in accordance with 1-SO-61-1, Ice Condenser.

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83. Given the following plant conditions:

- A loss of Component Cooling Water has occurred on Unit 1.
- The crew is performing actions of AOP M.03, Loss of Component Cooling Water.
- 1A Surge Tank level indicates 0%.
- 1B Surge Tank level indicates 57% and stable.

Assuming no other failures exist, which ONE (1) of the following describes the effect of this condition, and the action required?

- A. Component Cooling Water System operability meets safety analysis assumptions.
Trip the reactor.
- B. Component Cooling Water System operability meets safety analysis assumptions.
Reactor trip is NOT required.
- C. Component Cooling Water operability does NOT meet safety analysis assumptions.
Trip the reactor.
- D. Component Cooling Water operability does NOT meet safety analysis assumptions.
Reactor trip is NOT required.

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84. Given the following plant conditions:

- Unit 1 is operating at 100% RTP.
- Pressure Control Channel Selector Switch, 1-XS-68-340D is selected to PT-68-340 & 334 position.
- PT-68-340 fails **LOW**.
- All equipment functions as designed.

Which ONE (1) of the following statements describes (1) the effect on the plant, and (2) the required action?

- A. ONE (1) PZR PORV will be inoperable; direct a manual reactor trip and enter E-0, Reactor Trip or Safety Injection.
- B. PZR PORVs remain operable; direct manual control of PZR pressure and enter AOP I.04, Pressurizer Instrument Malfunctions.
- C. ONE (1) PZR PORV will be inoperable; direct manual control of PZR pressure and enter AOP I.04, Pressurizer Instrument Malfunctions.
- D. PZR PORVs remain operable; direct a manual reactor trip and enter E-0, Reactor Trip or Safety Injection.

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85. Given the following plant conditions:

- A reactor trip and safety injection has occurred.
- Prior to the trip, #1 Main Steam Line radiation was in alarm.
- The crew is preparing to transition from E-0, Reactor Trip or Safety Injection.
- The current conditions exist:
 - RCS pressure is 1550 psig and lowering slowly.
 - SG 1 pressure is 300 psig and lowering slowly.
 - SG 2, 3, and 4 pressures are 650 psig and stable.
 - Containment Pressure is 2.3 psig and rising slowly.

Which ONE (1) of the following describes the procedure transition required from E-0, and appropriate actions to be taken after the transition to mitigate the event?

- A. E-2, Faulted SG Isolation; SG 1 will NOT be used for a controlled RCS cooldown.
- B. E-2, Faulted SG Isolation; SG 1 MAY be used during a controlled RCS cooldown until no longer required for secondary heat sink.
- C. E-3, Steam Generator Tube Rupture; TDAFW Pump steam supply will be isolated from SG 1.
- D. E-3, Steam Generator Tube Rupture; TDAFW Pump steam supply may remain aligned to SG 1 until no longer required for secondary heat sink.

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86. Given the following plant conditions:

- Unit 1 is at 12% power during a plant startup.
- A loss of Essential and Non-Essential Control Air has occurred.
- The crew is attempting to restore Control Air in accordance with AOP-M.02, Loss of Control Air.
- RCS temperature is 559°F and rising.
- PZR level is 91% and rising.

Which ONE (1) of the following describes the effect on the unit, and identifies the procedure that will be used to control RCS temperature while performing EOPs?

Trip the reactor due to...

- A. pressurizer level approaching an RPS setpoint.
Manual actions to control RCS temperature are contained in EA-1-2, Local Control of S/G PORVs.
- B. pressurizer level approaching an RPS setpoint.
Manual actions to control RCS temperature are contained in AOP-M.02.
- C. OT Delta T approaching an RPS setpoint.
Manual actions to control RCS temperature are contained in EA-1-2, Local Control of S/G PORVs.
- D. OT Delta T approaching an RPS setpoint.
Manual actions to control RCS temperature are contained in AOP-M.02.

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87. Power is at 56% when a Main Generator Differential relay actuation occurs.

Which ONE (1) of the following describes the MOST LIMITING NRC reportability requirement, if any, for this event?

Reference Provided

- A. 1 hour notification
- B. 4 hour notification
- C. 8 hour notification
- D. No reportability required

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88. Given the following plant conditions:

- Unit 1 is in Mode 3.
- The following alarms are received in the control room:
 - AR-M-01-C, B4, 125V DC VITAL CHGR II FAILURE OR VITAL BAT II DISCHARGE.
 - AR-M-01-C, B5, 125V DC VITAL BAT BD II ABNORMAL.
- Battery Board II Voltage indicates 119 VDC and lowering slowly.
- Battery Charger II DC Output Breaker is tripped open.
- Reports from the AUO are that Battery Board II appears normal with the exception of the Charger Output Breaker trip

Which ONE (1) of the following describes the operability of the Battery Board, and the action required?

- A. Declare Battery Board II INOPERABLE. Align the Spare Charger in accordance with 0-SO-250-1, 125 Volt dc Vital Battery Boards.
- B. Declare Battery Board II INOPERABLE. Reduce Battery loading as necessary in accordance with 0-SO-250-1, 125 Volt dc Vital Battery Boards.
- C. Battery Board II remains OPERABLE. Align the Spare Charger in accordance with 0-SO-250-1, 125 Volt dc Vital Battery Boards.
- D. Battery Board II remains OPERABLE. Reduce Battery loading as necessary in accordance with 0-SO-250-1, 125 Volt dc Vital Battery Boards.

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89. Given the following plant conditions:

- Unit 1 is at 100%.
- A fire is in progress in the Control Building Cable Spreading Room.
- The Fire Brigade is on the scene and has requested backup assistance.
- *Multiple failures of various operations of plant equipment are occurring.*

XHT

Which ONE (1) of the following describes the correct procedure to be entered, and how RCS boration will be monitored throughout the RCS cooldown after the reactor is tripped? *5/9/07*

- A. Enter AOP-N.01, Plant Fires.
Initiate and monitor boration to cold shutdown conditions in accordance with AOP-C.04, Shutdown From Auxiliary Control Room.
- B. Enter AOP-N.08, Appendix R Fire Safe Shutdown.
Initiate and monitor boration to cold shutdown conditions in accordance with AOP-C.04, Shutdown From Auxiliary Control Room.
- C. Enter AOP-N.01, Plant Fires.
Initiate and monitor boration in accordance with 0-GO-7, Plant Cooldown from Hot Standby to Cold Shutdown.
- D. Enter AOP-N.08, Appendix R Fire Safe Shutdown.
Initiate and monitor boration in accordance with 0-GO-7, Plant Cooldown from Hot Standby to Cold Shutdown.

added 4th bullet per telecon with Mark BARRS.

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90. Given the following plant conditions:

- Unit 1 is in **MODE 3** following a shutdown.
- A loss of Auxiliary Air occurred.
- Auxiliary Feedwater was aligned as directed by AOP-M.02, "Loss Of Control Air" to support current plant operations.
- EA-3-4, "Local Alignment of TD AFW LCV Backup Air Supply" has been implemented.

Which ONE (1) of the following describes the actions necessary to **RESTORE** Auxiliary Feedwater normal and meet design basis requirements following the restoration of the plant air systems?

- A. Using EA-3-4, Local Alignment of TD AFW LCV Backup Air Supply; isolate the backup air supply and maintain bottle pressure at a minimum of 800 psig.
- B. Using EA-3-4, Local Alignment of TD AFW LCV Backup Air Supply; isolate the backup air supply and maintain bottle pressure at a minimum of 1500 psig.
- C. Using M.02, Loss of Control Air, Section 2.1 for Loss of Auxiliary Air; isolate the backup air supply and maintain bottle pressure at a minimum of 800 psig.
- D. Using M.02, Loss of Control Air, Section 2.1 for Loss of Auxiliary Air; isolate the backup air supply and maintain bottle pressure at a minimum of 1500 psig.

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91. Given the following plant conditions:

- A Steam Generator Tube Rupture has occurred on Unit 1.
- Due to equipment failures, the crew is performing actions contained in ECA-3.2, SGTR and LOCA - Saturated Recovery.
- The STA informs you that all CSF Status Trees are GREEN with the exception of the following:
 - Core Cooling - YELLOW path for FR-C.3, Saturated Core Cooling
 - Inventory - YELLOW path for FR-I.2, Voids in Reactor Vessel

Which ONE (1) of the following describes the required implementation of procedures for this event, and the reason?

- A. Transition from ECA-3.2 to FR-I.2 to restore the Inventory CSF to a green condition.
- B. Transition from ECA-3.2 to FR-C.3 to restore the Core Cooling CSF to a green condition.
- C. Remain in ECA-3.2. Implementation of Yellow Path procedures is **not** allowed in the ECA procedures in accordance with EPM-4, User's Guide.
- D. Remain in ECA-3.2. The actions contained in FR-C.3 and FR-I.2 conflict with ECA-3.2 actions.

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92. Given the following plant conditions:

- A reactor trip has occurred on Unit 1.
- Off-Site power has been lost.

- Plant Cooldown to Mode 5 will be performed.

Which ONE (1) of the following describes the Technical Specification Shutdown Margin requirements prior to, and after the cooldown, and the minimum action required if Shutdown Margin requirements are not met at any time during the cooldown?

- A. 1.0% delta k/k prior to RCS Cooldown;
1.6% delta k/k upon completion of RCS Cooldown;
Perform boration in accordance with EA-68-4, Emergency Boration, to restore Shutdown Margin.
- B. 1.0% delta k/k prior to RCS Cooldown;
1.6% delta k/k upon completion of RCS Cooldown;
Perform boration in accordance with SO-62-7, Boron Concentration Control, to restore Shutdown Margin.
- C. 1.6% delta k/k prior to RCS Cooldown;
1.0% delta k/k upon completion of RCS Cooldown;
Perform boration in accordance with EA-68-4, Emergency Boration, to restore Shutdown Margin.
- D. 1.6% delta k/k prior to RCS Cooldown;
1.0% delta k/k upon completion of RCS Cooldown;
Perform boration in accordance with SO-62-7, Boron Concentration Control, to restore Shutdown Margin.

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93. Given the following plant conditions:

A LOCA has occurred and the following containment conditions exist after transition to E-1, Loss of Reactor or Secondary Coolant:

- Pressure is 2.5 psig and rising.
- Sump level is 70% and rising.
- Upper and Lower Containment Radiation level is 102 Rem per hour.

Which ONE (1) of the following describes the procedure required to mitigate the above conditions?

- A. Transition to FR-Z.1, Response to High Containment Pressure.
- B. Transition to FR-Z.2, Response to Containment Flooding.
- C. Transition to FR-Z.3, Response to High Containment Radiation.
- D. Remain in E-1, Loss of Reactor or Secondary Coolant.

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94. A card reader is broken, prohibiting access to a vital area.

If conditions require immediate access, who by title, has control over Vital Area Access keys in accordance with SPP-1.3, Plant Access and Security and NSDP-8, Keys and Locks?

- A. Security ONLY
- B. Security or Shift Manager/Unit Supervisor ONLY
- C. Security or Duty Operations Manager ONLY
- D. Security or Duty Plant Manager ONLY

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95. Given the following plant conditions:

- A Normal Plant cooldown is in progress.
- The following table is a plot of the cooldown:

<u>TIME</u>	<u>RCS TCOLD</u>	<u>TIME</u>	<u>RCS TCOLD</u>
0800	547°F	0945	425°F
0815	530°F	1000	395°F
0830	520°F	1015	382°F
0845	505°F	1030	364°F
0900	498°F	1045	340°F
0915	478°F	1100	320°F
0930	447°F	1115	220°F

Which ONE (1) of the following describes the first time that the Technical Specification RCS Cooldown rate limit was exceeded, and the Technical Specification basis for the cooldown rate limit?

- A. 1000; brittle fracture of reactor vessel ONLY
- B. 1115; brittle fracture of reactor vessel and RCS pressure boundary
- C. 1000; brittle fracture of reactor vessel and RCS pressure boundary
- D. 1115; brittle fracture of reactor vessel ONLY

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96. Given the following plant conditions:

- A plant design change request form is in the approval process.
- The proposed modification will modify the control rod overlap setpoints in the logic cabinets.

Which ONE (1) of the following describes the final management position, by title, required to approve the change prior to implementation?

- A. Plant Manager
- B. Site Vice President
- C. Maintenance and Mods Manager
- D. Engineering and Support Manager

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97. Given the following plant conditions:

- Unit 2 is in Mode 3.
- Engineering has requested that the 2A SI pump be started with the discharge valve throttled to 75% open to determine starting current.
- The test is NOT described in the current test procedure or the Safety Analysis Report.
- The Operations Manager has determined that an Urgent Procedure change is required to support the outage critical path schedule.

The Shift Manager may approve the test procedure change _____.

- A. with concurrence from licensing ONLY.
- B. with concurrence from another SRO ONLY.
- C. with concurrence from licensing AND another SRO.
- D. after a written 10CFR50.59 safety evaluation has been approved.

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98. Given the following plant conditions:

A General Emergency has been declared.

A severely injured individual is in the Pipe Chase in a radiation field of 50 R/Hr.

Two individuals have volunteered for the rescue. BOTH of the volunteers have been briefed on the risks involved:

- Individual A is a 37 year old male.
- Individual B is a 46 year old male.

In accordance with EPIP-15, Emergency Exposure Guidelines, which volunteer should be selected for the rescue, and what is the maximum exposure the SED may authorize him to receive?

- A. Individual A; 10 Rem.
- B. Individual B; 10 Rem.
- C. Individual A; 25 Rem.
- D. Individual B; 25 Rem.

**Sequoyah Nuclear Plant
SRO NRC Examination
05/09/2007**

99. Given the following plant conditions on Unit 1:

<u>Time</u>	<u>Plant Status/Condition</u>
0955	Unplanned loss of 80% of MCR alarms and annunciator printer and CRT in horseshoe.
1025	SM determines that increased surveillance is required above current shift complement.
1040	Loss of ICS.

Which ONE (1) of the following correctly states the time requirement for notifying state and local authorities in accordance with EPIP-1, Emergency Plan Classification Matrix?

Assume that the REP classification is made as soon as conditions are met to make the declaration.

(Reference provided)

- A. 1010
- B. 1025
- C. 1040
- D. 1055

**Sequoyah Nuclear Plant
SRO NRC Examination
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100. Given the following plant conditions:

- Unit 1 is at 100% power with Control Rods in manual.
- A transient occurs resulting in the following alarms:
 - OTDT RUNBACK/ROD STOP ALERT
 - OVERPOWER ROD STOP
 - OPDT RUNBACK

- Reactor power indicates the following and is rising:
 - N41 – 105.2%
 - N42 – 106.2%
 - N43 – 105.9%
 - N44 – 106.1%
 - Tavg is 571°F

Which ONE (1) of the following identifies the procedure(s) required to be implemented?

- A. AOP-C.01, Rod Control Malfunctions, then E-0, Reactor Trip or Safety Injection.
- B. AOP-C.01, Rod Control Malfunctions ONLY.
- C. AOP-S.05, Steam Line or Feedwater Line Break/Leak, then E-0, Reactor Trip or Safety Injection.
- D. AOP-S.05, Steam Line or Feedwater Line Break/Leak ONLY.