ES-401-7 **Site-Specific RO Written Examination Cover Sheet**

U.S. Nuclear Regulatory Commission

Site-Specific RO Written Examination

Applicant Information	
Name:	
Date: **5/24/2011**	Facility/Unit: **FARLEY Units 1 & 2**
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	75	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

1. Unit 2 is at 55% power with the following conditions:

   - 2A BAT is on service, 2B BAT is on standby.

At 10:00:

- Control Rods are stepping out in AUTO and cannot be stopped.
- The Reactor cannot be tripped and FRP-S.1, Response to Nuclear Power Generation/ ATWT, has been entered.
- An emergency boration is in progress per FRP-S.1, with the 2A BAT pump running.

At 10:05:

- The 2A BAT pump trips.

Which one of the following completes the statements below?

Verify 2B BAT pump _(1)_ .

Per FRP-S.1, **minimum** boration flow is required to be greater than _(2)_ gpm.

	(1)	(2)
A.	autostarts	30
B.	is manually started	30
C.	autostarts	40
D.	is manually started	40

2. Given the following conditions on Unit 2:

- Reactor power is 90%.
- Rod Control is in AUTO.
- Control Bank D rods are at 200 steps.

Which one of the following describes how control rods will respond when N-44, PR NI, fails **LOW** quickly with no operator actions or automatic reactor trips?

A. Rods step **out** until Tavg/Tref mismatch causes them to step **back in**.

B. Rods step **in** until Tavg/Tref mismatch causes them to step **back out**.

C. Rods step **out** and stay **out**.

D. Rods step **in** and stay **in**.

3. Unit 2 is in Mode 4 with the following conditions:

At 10:00:

- 2C RCP was started, but tripped due to over-current during the start attempt.

At 10:45:

- The Shift Manager directs 4160V Bus Voltage raised and the 2C RCP restarted.

The following MCB parameters are observed:

- 2C RCP #1 SEAL PRESSURE is 240 psid.
- 2C RCP SHAFT SEAL FLOW is 6.5 gpm.
- VCT PRESS is 16.5 psig.

Which one of the following parameters, per SOP-1.1, Reactor Coolant System, will prevent the operator from starting the 2C Reactor Coolant Pump?

A. #1 Seal DP

B. VCT pressure

C. Seal injection flow

D. Insufficient idle time between start attempts

4. Unit 1 is at 100% power with the following conditions:

- Pressurizer level is stable and on program.
- Seal injection flow is in the green band.
- RCP #1 Seal leakoff flow is normal.
- Letdown is in service with HV-8149C, LTDN ORIF ISO 60 GPM, open.
- All control systems are in AUTO.

Which one of the following sets of indications for CVCS Charging and Letdown flow represent steady-state conditions with no RCS leakage?

	CHG FLOW FI-122A (gpm)	LTDN HX OUTLET FLOW FI-150 (gpm)
A.	60	75
B.	75	75
C.	60	84
D.	75	60

5. Unit 1 has experienced a **Safety Injection**.

Which one of the following completes the statement below?

RCP #1 Seal Leakoff will be directed to the ____ .

A. Reactor Coolant Drain Tank

B. Containment Sump

C. Pressurizer Relief Tank

D. Volume Control Tank

6. Unit 1 is in Mode 5 with the following conditions:

At 1000:

- RCS is in solid plant conditions.
- A Train RHR is in service in the cooldown mode.
- Low Pressure Letdown is aligned to A Train.
- Charging and Letdown flows are balanced.
- RCS pressure is stable at 250 psig.
- PK-145, LP LTDN PRESS controller, is in AUTO.

At 1010:

- A crud burst causes the **RCS Filter** to immediately clog.

Which one of the following completes the statement below?

RCS pressure will ____ .

A. rise until RHR suction reliefs lift

B. rise until the RHR loop suction isolation valves go closed

C. lower and the VCT will divert to the RHTs

D. lower and total Seal Injection flow will decrease

7. Unit 1 is at 100% power with the following conditions:

- 1B Charging pump is aligned to B Train.
- 1C Charging pump is Tagged Out.

At 1000:

- 1F 4160V Bus is de-energized and remains de-energized.

Which one of the following combinations lists the ECCS pumps that have power available?

	Charging pump with power	RHR pump with power
A.	1A	1A
B.	1A	1B
C.	1B	1A
D.	1B	1B

8. Unit 1 is at 100% power with the following conditions:

- HA5, PRZR PORV TEMP HI, is in alarm.
- Pressurizer pressure is 2225 psig and slowly going down.
- PRT pressure is slowly rising.
- Both PORV's indicate closed.

Which one of the following completes the statements below?

TI-463, PORV tailpipe temperature, will increase to _(1)_ .

PI-472, PRT PRESS, will reach a maximum pressure of _(2)_ .

	(1)	(2)
A.	between 220 and 340°F	100 psig
B.	greater than 600°F	100 psig
C.	greater than 600°F	75 psig
D.	between 220 and 340°F	75 psig

9. Unit 1 is in Mode 3 with the following conditions:

- 1A RHR pump is running for a boron sample.
- A and B Train CCW are in operation.
- Normal Letdown is in service with 75 gpm flow.
- Excess Letdown is in service in preparation for a Tag Out of the Normal Letdown line.

Which one of the following is the effect of a **loss of Instrument Air** to individual CCW components?

A loss of air to _(1)_ , would require _(2)_ .

A. 1) TCV-3083, LTDN HX CCW TEMP CONTROLLER

2) isolating Letdown per DF1, LTDN TO DEMIN DIVERTED-TEMP HI

B. 1) HV-3404A, RHR PUMP 1A SEAL HX CCW PRESS REG

2) securing 1A RHR pump per CG1, 1A RHR PUMP CCW FLOW LO

C. 1) HV-3095, CCW TO EXCESS LTDN/RCDT HX'S

2) isolating Excess Letdown per CH1, EXC LTDN HX OUTLET TEMP HI

D. 1) RCV-3028, CCW SURGE TANK AIR VENT

2) closing RCV-3028 with the manual jack per SOP-23.0, Component Cooling Water System

10. Unit 1 has experienced a small break LOCA with the following conditions:

- RCS pressure is 2100 psig.
- CETCs are 750°F.
- All RCP's are stopped.
- FI-943, A TRAIN HHSI FLOW, indicates 0 gpm.
- FI-940, HHSI B TRAIN RECIRC FLOW, indicates 0 gpm.

Which one of the following actions is required as the primary mitigation strategy per the applicable Functional Restoration Procedure?

A. Start a RCP.

B. Establish HHSI flow.

C. Perform a max rate cooldown.

D. Reduce RCS pressure by opening one PORV.

11. Unit 1 is at 100% power with the following conditions:

- HV-8145, RCS PRZR AUX SPRAY valve, has just started leaking by the seat at 10 gpm.
- HC1, PRZR PRESS HI-LO, is in alarm.

Which one of the following completes the statement below?

Indication on FI-122A, CHG FLOW, will **initially** __(1)__ .

Demand on PK-444A, PRZR PRESS REFERENCE controller, will __(2)__ .

	(1)	(2)
A.	increase	increase
B.	increase	decrease
C.	decrease	increase
D.	decrease	decrease

12. Unit 1 is at 100% power with the following conditions:

At 10:00:

- 1B Charging pump is aligned to B Train.
- 1A Charging pump is running.

At 10:10:

- Pressurizer level is falling.
- VCT level is rising.
- DD1, RCP SEAL INJ FLOW LO, alarm is LIT.
- DE1, REGEN HX LTDN FLOW DISCH TEMP HI, alarm is LIT.
- EA2, CHG HDR FLOW HI-LO, alarm is LIT.

Which one of the following events has occurred?

A. An RCS piping break has occurred causing an Auto Roll-over to the RWST.

B. PCV-145, LP LTDN Pressure Control Valve, has failed open.

C. FCV-122, CHG Flow control valve, has failed closed.

D. 1A Charging pump has tripped.

13. Unit 1 has had a Reactor Trip and Safety Injection actuation with the following conditions:

- A Large Break LOCA has occurred.
- Containment pressure has reached 29 psig.
- EEP-0, Reactor Trip or Safety Injection, is in progress.
- RCS pressure is 200 psig and dropping.

Which one of the following describes the reason for securing RCP's under the above conditions?

A. To delay two-phase flow in the RCS.

B. To prevent overheating RCP motor bearings.

C. To prevent a deeper and longer core uncovery later in the event.

D. To avoid the possibility of RCP motor overspeed and flywheel fracture.

14. Which one of the following completes the statements below?

The **minimum** coincidence (fewest number of channels or input signals) required to initiate an Intermediate Range High Flux Reactor Trip is __(1)__ .

The **minimum** coincidence (number of Throttle Valves closed) to initiate a Reactor Trip from Turbine Trip is __(2)__ .

	(1)	(2)
A.	1 out of 2	3 out of 4
B.	2 out of 2	3 out of 4
C.	1 out of 2	4 out of 4
D.	2 out of 2	4 out of 4

15. Unit 1 is at 100% power with the following conditions:

At 10:00:

- PT-950, CTMT PRESS, has failed **HIGH**.
- The appropriate Tech Spec actions of T.S. 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, have been completed.
- SPRAY ACTUATION BYPASS CH I TEST light is illuminated on the BYPASS & PERMISSVE panel.

At 10:30:

- PT-953, CTMT PRESS, fails **HIGH**.

Which one of the following automatic actuations, if any, will occur?

A. No automatic actuations

B. Safety Injection ONLY

C. Safety Injection and MSIV isolation ONLY

D. Safety Injection, MSIV isolation, Phase B and Ctmt Spray actuation ONLY

16. Unit 1 is at 25% power with the following conditions:

- 1C RCP trips.

Which one of the following completes the statements below?

1C Steam Generator narrow range level will __(1)__ .

After 1C RCP stops, 1C Loop delta T indication will be __(2)__ than 1A and 1B Loop delta T indications.

	(1)	(2)
A.	swell	higher
B.	swell	lower
C.	shrink	higher
D.	shrink	lower

17. Unit 1 tripped from 75% power with the following conditions:

- N-35, Intermediate Range NI, is overcompensated.

Which one of the following completes the statements below?

N-35 will indicate __(1)__ than actual power.

The Source Range NI's will energize as soon as __(2)__ , Intermediate Range NI, reaches the P-6 setpoint.

	(1)	(2)
A.	lower	N-35
B.	lower	N-36
C.	higher	N-35
D.	higher	N-36

18. Unit 1 is at 100% power with the following conditions:

- An **LOSP** occurs and 1B Diesel Generator trips.
- Containment pressure is 34 psig due to a steam line break.
- BA1, 1A CTMT CLR FAN FAULT, comes into alarm due to a trip of the 1A Containment Cooler.

Which one of the following completes the statements below?

The _(1)_ CTMT CLR FAN is required to be started per EEP-0, Reactor Trip or Safety Injection.

After the fan is started, Containment Pressure and Temperature _(2)_ exceed design limits.

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

19. Unit 1 is at 100% power with the following conditions:

At 10:00:
- All containment fan coolers are operating in FAST speed.

At 10:05:
- A steam leak occurs inside Containment.
- An automatic SI has occurred.

Which one of the following describes the expected operation of the Containment Coolers?

The Containment Coolers will be operating in _(1)_ speed.

The Containment Cooler discharge dropout plate opens when Containment _(2)_ .

	(1)	(2)
A.	FAST	pressure exceeds 4 psig
B.	SLOW	pressure exceeds 4 psig
C.	FAST	temperature exceeds 135°F
D.	SLOW	temperature exceeds 135°F

20. The following conditions exist on Unit 1:

- Mode 6.
- The RCS level is at midloop.
- Both RHR pumps are in operation.
- Low Pressure Letdown is in service on A Train.

At 10:00:
The 1A RHR pump is in the following configuration:
- HIK-603A, 1A RHR HX DISCH VLV, is 0%.
- FK-605A, 1A RHR HX BYP FLOW, is in manual with 75% demand.

The 1B RHR pump is in the following configuration:
- HIK-603B, 1B RHR HX DISCH VLV, is 50%.
- FK-605B, 1B RHR HX BYP FLOW, is in manual with 25% demand.

At 10:05:
- 1A RHR pump trips.

Which one of the following completes the statement below?

RCS level will _(1)_ , and RCS temperature will _(2)_ .

	(1)	(2)
A.	increase	increase
B.	increase	remain the same
C.	remain the same	remain the same
D.	remain the same	increase

21. Unit 1 is at 75% power with the following conditions:

- Automatic control of TK-144, LTDN HX OUTLET TEMP, has failed.
- Letdown temperature is 150°F and rising.

Which one of the following completes the statements below?

The alarm expected for this condition is _(1)_ .

The appropriate ARP will direct the operator to place TK-144 in MANUAL and _(2)_ controller demand.

	(1)	(2)
A.	DF1, LTDN TO DEMIN DIVERTED-TEMP HI	raise
B.	DE1, REGEN HX LTDN FLOW DISCH TEMP HI	raise
C.	DF1, LTDN TO DEMIN DIVERTED-TEMP HI	lower
D.	DE1, REGEN HX LTDN FLOW DISCH TEMP HI	lower

22. Unit 1 tripped from 100% power with the following conditions:

- Safety Injection is in progress due to a Large Break LOCA.
- Containment Spray has actuated.
- The following MCB annunciators are in alarm:
  - CH4, RWST LVL A TRN LO-LO
  - CH5, RWST LVL B TRN LO-LO

Which one of the following completes the statements below?

The setpoint for the RWST LO-LO alarms is (1) .

The operator is required to (2) using ESP-1.3, Transfer to Cold Leg Recirculation.

	(1)	(2)
A.	4' 6"	verify the CS sump suction MOV's automatically opened
B.	4' 6"	open the CS sump suction MOV's
C.	12' 6"	verify the RHR sump suction MOV's automatically opened
D.	12' 6"	open the RHR sump suction MOV's

23. Which one of the following completes the statement below?

The Containment Spray System **reduces radioactive iodine** in the Containment atmosphere during a LOCA by spraying water from the __(1)__ at a pH of approximately __(2)__ .

	(1)	(2)
A.	containment sump	4.5
B.	RWST	7.5
C.	containment sump	7.5
D.	RWST	4.5

24. Unit 1 is at 75% power with the following conditions:

- PK-444A, PRZR PRESS REFERENCE controller, is failed such that it senses a constant input pressure equivalent to 2219 psig.

Which one of the following describes the automatic response of the Pressurizer Pressure Control system?

A. PCV-445A, PRZR PORV, will cycle to control pressure.

B. The variable heaters will cycle on and off at a higher setpoint.

C. The spray valves will open to control pressure at a higher value.

D. PCV-444B, PRZR PORV, will open and remain open until 2000 psig.

25. Unit 1 has just lost power to 600V Motor Control Center (MCC) 1A.

Which one of the following components will **NOT** have power?

A. 1A Spent Fuel Pool pump

B. 1A Containment Cooler Fan - Fast speed

C. 1A Post LOCA Hydrogen Recombiner

D. MOV-8808A, 1A Accumulator Discharge Isolation Valve

26. Given the following conditions on Unit 1:

- RCS pressure is 2350 psig.
- All SG pressures are 1035 psig.
- The reactor is NOT tripped.
- The crew is currently in FRP-S.1, Response to Nuclear Power Generation/ATWT, performing the step, "Check pressurizer pressure LESS THAN 2335 psig."

Which one of the following completes the statements below per FRP-S.1?

Open PRZR PORVs and PRZR PORV ISO valves and lower RCS pressure to _(1)_ .

The reason for the pressure reduction is to _(2)_ .

	(1)	(2)
A.	2235 psig	increase charging flow into the RCS
B.	2235 psig	reduce the differential pressure between the SGs and the RCS
C.	2135 psig	increase charging flow into the RCS
D.	2135 psig	reduce the differential pressure between the SGs and the RCS

27. Which one of the following describes the Fuel Transfer System's **Pit-Crane Interlock** and the reason for the interlock?

A. Prevents the SFP lifting frame from being **lowered** while the SFP bridge crane is in the Transfer Canal area,

to prevent damage to a fuel assembly.

B. Prevents movement of the SFP Bridge Crane when the lifting frame is **up**,

to prevent damage to the SFP Bridge Crane Hoist.

C. Prevents the SFP lifting frame from being **raised** while the SFP bridge crane is in the Transfer Canal area,

to prevent damage to the lifting frame.

D. Prevents operation of the SFP Bridge Crane hoist when the lifting frame is **down**,

to prevent bumping a fuel assembly when the frame is raised.

28. The following conditions exist on Unit 1:

- AOP-2.0, Steam Generator Tube Leak, is in progress.
- The Control Room crew is preparing for an RCS cooldown.
- The affected SG pressure is 980 psig.
- Desired subcooling is 30-32°F.

1) Using steam tables, which one of the following is the temperature at which the RCS cooldown is required to be stopped?

2) Per AOP-2.0, what temperature indication is used?

Reference Provided

	(1)	(2)
A.	513°F	Core exit T/C monitor
B.	544°F	Core exit T/C monitor
C.	513°F	RCS Hot Leg Temperature
D.	544°F	RCS Hot Leg Temperature

29. Unit 1 is shutdown with the following conditions:

At 10:00:
- An SI was initiated due to a Small Break LOCA.
- ESP-1.2, Post LOCA Cooldown and Depressurization, is in progress.
- Normal charging has been established.
- All SG narrow range levels are 40% and stable.

At 10:15:
- 1A SG narrow range level is 48% and going up with no AFW flow to the SG.
- 1B and 1C SG narrow range levels are 40% and stable.
- Pressurizer level is 20% and trending down with maximum charging flow.

Which one of the following completes the statement below?

The foldout page of ESP-1.2 requires the crew to establish HHSI flow and ___ .

A. remain in ESP-1.2, Post LOCA Cooldown and Depressurization.

B. re-enter EEP-0, Reactor Trip or Safety Injection.

C. go to EEP-1, Loss of Reactor or Secondary Coolant.

D. go to EEP-3, Steam Generator Tube Rupture.

30. Unit 2 is performing the inital heatup of the RCS following a Refueling outage, with the following conditions:

- RCS temperature is 480°F.
- All MSIV's are closed.
- The Unit Operator is preparing to open the MSIV's per SOP-17.0, Main and Reheat Steam.
- ALL MSIV Bypass valves are open.
- The steam dumps are aligned in the STM PRESS mode per SOP-18.0, Steam Dump System.
- All required testing and maintenance activities have been completed.

Which one of the following completes the statements below?

1) When 'A' steam line MSIV's are opened, 'A' MSIV Bypass valves will __(1)__ .

2) When opening MSIV's, Main Steam header pressure should be monitored closely to prevent a Safety Injection due to __(2)__ .

	(1)	(2)
A.	be manually closed	Low Steam Line pressure
B.	be manually closed	Steam Line Differential pressure
C.	automatically close	Low Steam Line pressure
D.	automatically close	Steam Line Differential pressure

31. Unit 2 is at 12% power with the following conditions:

At 10:00:

- Tavg is 550°F and stable.
- Steam Dumps are in the STM PRESS mode.
- PK-464, STM HDR PRESS controller, is in AUTO.

At 10:05:

- PT-464, STM HDR PRESS, fails HIGH.

Which one of the following completes the statements below, with no operator action?

Steam flow will increase and then _(1)_ .

PK-464, STM HDR PRESS controller, will _(2)_ .

	(1)	(2)
A.	stabilize at 40% steam flow	remain in AUTO
B.	decrease to zero	shift to MANUAL at 543°F
C.	decrease to zero	remain in AUTO
D.	stabilize at 40% steam flow	shift to MANUAL at 543°F

32. Unit 1 is at 32% power with the following conditions:

At 10:00:

- Steam dumps are Tagged Out to prevent operation due to a maintenance test in progress.
- The control rods are in MANUAL.

At 10:05:

- A malfunction of the DEH control system results in a Main Turbine trip.

Which one of the following completes the statements below?

SG water levels will _(1)_ due to the Turbine trip.

The OATC is required to _(2)_ .

	(1)	(2)
A.	swell	reduce Reactor power to < 8%
B.	swell	trip the Reactor and enter EEP-0, Reactor Trip or Safety Injection
C.	shrink	reduce Reactor power to < 8%
D.	shrink	trip the Reactor and enter EEP-0, Reactor Trip or Safety Injection

33. **Unit 2** is ramping up with the following conditions:

At 10:00:

- KK1, TURB COND VAC LO, comes into alarm.
- Condenser vacuum is degrading.
- AOP-8, Partial Loss of Condenser Vacuum, actions are in progress.

At 10:15:

- KK2, TURB COND VAC LO-LO, comes into alarm.
- Main Turbine load is 225 MWe.
- Condenser vacuum is 2.1 psia and stable.

Which one of the following is/are the required action(s) per AOP-8.0?

A. Trip the reactor and perform EEP-0, Reactor Trip or Safety Injection.

B. Trip the Main Turbine and perform AOP-3.0, Turbine Trip Below P-9 Setpoint.

C. Reduce load at the maximum controllable rate per AOP-17, Rapid Load Reduction.

D. Stop the ramp in progress and stabilize the plant.

34. Unit 1 is shutdown with the following conditions:

At 10:00:

- There is a complete loss of all AC power.
- A Safety Injection has occurred.
- ECP-0.0, Loss of All AC Power, is in progress.
- 1B Diesel Generator (DG) is Tagged Out.
- 1-2A DG tripped on Low Lube Oil Pressure due to a clogged strainer.

At 10:15:

- 1-2A DG's on service lube oil strainer has been swapped.
- 1-2A DG will be started locally in Mode 4 per SOP-38.1, Emergency Starting of a Diesel Generator.

Which one of the following completes the statements below?

Prior to starting the 1-2A DG in Mode 4, the __(1)__ must be depressed.

To close the 1-2A DG output breaker from the EPB, the 1-2A DG EPB Mode Selector Switch is required to be in the __(2)__ position per SOP-38.0-1-2A, 1-2A Diesel Generator and Auxiliaries.

A. 1) 1-2A DG ENGINE RESET pushbutton on the Local Control Panel

   2) Mode 2

B. 1) 1-2A DG ENGINE RESET pushbutton on the Local Control Panel

   2) Mode 3

C. 1) SIAS RESET pushbutton on the B1F Sequencer

   2) Mode 2

D. 1) SIAS RESET pushbutton on the B1F Sequencer

   2) Mode 3

35. Unit 1 is at 70% power with the following conditions:

- R-15A, SJAE EXH, is in alarm.
- AOP-2.0, Steam Generator Tube Leakage, is in progress.
- The Turbine Building SO has placed the SJAE Filtration System in service.

Which one of the following completes the statement below?

After the SJAE Filtration system is placed in service, the reading on R-15A will _(1)_ and the SJAE Filtration system will _(2)_ .

	(1)	(2)
A.	decrease	be aligned in a recirc alignment
B.	remain the same	be aligned in a recirc alignment
C.	decrease	discharge to the Turbine Bldg roof
D.	remain the same	discharge to the Turbine Bldg roof

36. Unit 1 is at 100% power with the following conditions:

At 10:00:

- 1B Condensate pump is in Standby and has a Caution tag stating that the pump has a degraded head condition.

At 10:05:

- 1C Condensate Pump trips.
- PR-4039, SGFP Suction Pressure recorder, indication drops to 274 psig for 20 seconds and then starts rising rapidly.
- KB4, SGFP SUCT PRESS LO, clears 25 seconds after the 1B condensate pump starts.

Which one of the following completes the statements below?

The 1B Condensate Pump started _(1)_ .

The Control Room Crew is required to _(2)_ per AOP-13, Condensate and Feedwater Malfunction.

A. 1) immediately following the trip of the 1C Condensate pump

2) trip the Reactor

B. 1) immediately following the trip of the 1C Condensate pump

2) stabilize Steam Generator levels

C. 1) following a drop in SGFP suction pressure ONLY

2) trip the Reactor

D. 1) following a drop in SGFP suction pressure ONLY

2) stabilize Steam Generator levels

37. Unit 2 is in Mode 3 with the following conditions:

- A Grid disturbance caused a dual unit LOSP.
- The following 230KV High Voltage lines are **out of service**:
  - Sinai Cemetery
  - Bainbridge
  - Webb
- #2 Auto Bank Transformer is **out of service**.
- The Shift Manager has directed performance of STP-27.1, A.C. Source Verification, on Unit 2.

Which one of the following completes the statements below?

The Unit 2 Startup Transformers are powered from the _(1)_ side of the High Voltage Switchyard.

Per STP-27.1, _(2)_ available to supply power to the Unit 2 Startup Transformers.

	(1)	(2)
A.	230KV	one off-site circuit is
B.	500KV	one off-site circuit is
C.	230KV	two off-site circuits are
D.	500KV	two off-site circuits are

38. The following conditions exist on Unit 1:

At 10:00:

- Reactor power is 80% and stable.
- Rod control is in AUTO with Bank D rods at 184 steps.
- LT-115, VCT LEVEL, is failed LOW.
- N-43, POWER RANGE NUCLEAR INSTRUMENT, has failed HIGH.
- All actions of AOP-100, Instrument Malfunction, have been completed for N-43.

At 10:15:

- Power is lost to the 1C 120V AC Vital Panel due to an Inverter malfunction.

Which one of the following conditions will occur due to 1C 120V AC Vital Panel being de-energized?

A. A reactor trip will occur.

B. An Auto makeup will commence.

C. Automatic rod withdrawal is blocked.

D. LCV-115B and D, RWST to CHG PUMP, will open.

39. The following conditions exist on Unit 2:

At 10:00:

- LB18, 2B BATTERY SUPPLY BREAKER, is open and Tagged Out for Battery cell replacement.

At 10:05:

- An LOSP occurs.

Which one of the following completes the statement below?

_(1)_ Diesel Generator can be started **and** used to supply power to the Unit 2 B Train 4160V ESF busses because it has a(n) _(2)_ .

	(1)	(2)
A.	2C	power seeking ATS (Automatic Transfer Switch)
B.	2C	emergency Air Start Solenoid
C.	2B	power seeking ATS (Automatic Transfer Switch)
D.	2B	emergency Air Start Solenoid

40. Unit 1 is at 13% power with the following conditions:

- The Main Generator output breakers have been closed.
- JF1, 1A SG LVL DEV, is in alarm.
- A Systems Operator in the Main Steam Valve Room reports that the air supply line to FCV-479, 1A SG FW BYP FLOW, has blown off.

Which one of the following completes the statements below?

FCV-479 will fail __(1)__ .

Per AOP-13.0, Condensate and Feedwater Malfunctions, the operator is required to trip the __(2)__ if Steam Generator level can NOT be maintained.

	(1)	(2)
A.	open	Main Turbine
B.	open	Reactor
C.	closed	Reactor
D.	closed	Main Turbine

41. Which one of the following completes the statements below?

The purpose of TRSH-2293, AFW CHECK VALVE TEMPERATURE RECORDER, is to monitor the temperature on the discharge line of _(1)_ .

Temperatures are monitored to determine if actions need to be taken to protect against _(2)_ .

	(1)	(2)
A.	ALL AFW pumps	water hammer or steam binding
B.	ALL AFW pumps	water hammer ONLY
C.	ONLY the TDAFW pump	water hammer or steam binding
D.	ONLY the TDAFW pump	water hammer ONLY

42. Unit 1 is at 100% power with the following conditions:

At 10:00:
- Unit 1 trips due to a Loss of Site Power (LOSP).

At 10:20:
- The 1A Steam Generator narrow range water level is 25%.
- The 1B and 1C Steam Generator narrow range water levels are 31%.
- The Rover reports that smoke is coming from the 1A MDAFW pump.
- The UO takes the handswitch for the 1A MDAFW pump to stop.

Which one of the following completes the statement below?

When the 1A MDAFW pump handswitch is taken to stop and released, the 1A MDAFW pump will _(1)_ because the _(2)_ signal is present.

	(1)	(2)
A.	stop and remain stopped	SG LO-LO level
B.	stop and then restart	SG LO-LO level
C.	stop and then restart	LOSP
D.	stop and remain stopped	LOSP

43. Unit 1 is at 100% power, with the following conditions:

- A failure has occurred in the controller/positioner for HV-3235A, TDAFWP STM SUPP FROM 1B SG, such that air is continuously supplied to HV-3235A.

Which one of the following completes the statement below?

The TDAFW pump will _____

A. **NOT** autostart under any condition.

B. immediately start and operate at full design capacity.

C. autostart when a signal occurs and operate at full design capacity.

D. autostart when a signal occurs, but **NOT** operate at full design capacity.

44. Unit 1 has experienced a Reactor Trip and Safety Injection with the following alarms:

- AF4, CTMT CLR SW FLOW HI-LO
  SETPOINT: Lo Flow Range (< 1980 gpm): Diff Flow HI: 300 +0, -75 gpm
  Hi Flow Range (≥ 1980 gpm): Diff Flow HI: 750 +0, -30 gpm

- AD4, SW PRESS A TRN LO -
  SETPOINT: 60 ± 1 psig

Which one of the following would cause the conditions described above?

A. The 1A Service Water Pump has degraded head.

B. A piping failure has occurred upstream of the 1A containment cooler.

C. A piping failure has occurred downstream of the 1C containment cooler.

D. MOV-3024A, EMERG SW FROM 1A CTMT CLR, has failed to open on the SI.

45. Unit 1 has experienced a Reactor trip with the following conditions:

- An LOSP has occurred.
- A DG failure has occurred, and the A Train 4160V busses are de-energized.

Which one of the following states the **minimum** time that the A Train Auxiliary Building 125V DC System Battery is designed to carry the required DC loads in this condition?

A. 30 minutes

B. 2 hours

C. 8 hours

D. 12 hours

46. Unit 1 has experienced a Reactor trip with the following conditions:

- A Loss of All AC has occurred.
- ECP-0.0, Loss of All AC Power, is in progress.

Which one of the following completes the statements below?

The 1B Aux Building DC bus voltage will __(1)__ .

DC loads are minimized in ECP-0.0 to __(2)__ .

A. 1) drop slowly at first; then later drop rapidly as the battery nears exhaustion

2) prolong battery life ONLY

B. 1) drop slowly at first; then later drop rapidly as the battery nears exhaustion

2) prevent damage to the DC components AND prolong battery life

C. 1) drop at a constant, linear rate the entire time the battery discharges

2) prolong battery life ONLY

D. 1) drop at a constant, linear rate the entire time the battery discharges

2) prevent damage to the DC components AND prolong battery life

47. Unit 1 is in Mode 3 with the following conditions:

- The 1B MDAFW pump is operating to provide secondary inventory.
- The B Train Auxiliary Building 125V DC bus becomes de-energized.

Which one of the following completes the statements below?

The 1B MDAFW pump Main Control Board switch indication will __(1)__ .

The 1B MDAFW pump will __(2)__ .

	(1)	(2)
A.	**NOT** be LIT	continue to run
B.	**NOT** be LIT	trip
C.	be LIT	continue to run
D.	be LIT	trip

48. Unit 1 is in Mode 3 with the following conditions:

- An LOSP has occurred on Unit 1 ONLY.

The Diesel Building SO reports that crankcase pressure is out of spec on the 1C DG.

Which one of the following completes the statement below?

The __(1)__ CRANKCASE PRESSURE alarm comes in when 1C DG crankcase pressure reaches + 2" H_20 gauge and the 1C DG will __(2)__ .

	(1)	(2)
A.	HIGH	TRIP
B.	LOW	TRIP
C.	HIGH	NOT trip
D.	LOW	NOT trip

49. Unit 1 tripped from 100% power with the following conditions:

- A steam line break occurred in Containment.
- In addition, a complete loss of all AFW occurred.
- FRP-H.1, Response To Loss Of Secondary Heat Sink, is in progress.
- Bleed and Feed criteria has been met.
- Containment pressure is 31 psig.

Which one of the following completes the statements below?

Bleed and Feed criteria was met as soon as two SG wide range levels were LESS THAN __(1)__ .

Phase B isolation is reset in FRP-H.1 to __(2)__ .

	(1)	(2)
A.	12%	restore CCW cooling to the RCPs
B.	12%	restore Instrument Air to Containment
C.	31%	restore CCW cooling to the RCPs
D.	31%	restore Instrument Air to Containment

50. Unit 1 was operating with PT-474, 1A SG PRESS, failed LOW when the following occurred:

- A fire onsite has required the Control Room to be evacuated.
- The crew has implemented AOP-28.2, Fire in the Control Room.
- Steam is coming from the MSVR roof.
- The crew has closed all MSIVs.

The crew is evaluating PCV-3371A, 1A SG ATMOSPHERIC RELIEF VLV, to determine if it is OPEN or leaking by.

Which one of the following completes the statement below?

The 1A SG Pressure indication _(1)_ available for monitoring on the Hot Shutdown Panels.

Low Steam Line Pressure SI signal _(2)_ be blocked on the Hot Shutdown Panels.

	(1)	(2)
A.	is NOT	can NOT
B.	is NOT	CAN
C.	IS	can NOT
D.	IS	CAN

51. Unit 1 is at 100% power with the following conditions:

- Containment Mini-Purge is in service.
- R-24B, CTMT PURGE, has failed HIGH.

Which one of the following completes the statements below?

Mini-Purge dampers inside __(1)__ will isolate.

Mini-Purge supply and exhaust fans __(2)__.

	(1)	(2)
A.	Containment	remain running
B.	Containment	automatically stop
C.	the Piping Penetration room	remain running
D.	the Piping Penetration room	automatically stop

52. The following conditions exist on Unit 1:

- The 1B MDAFW pump has been started from the MCB and is running for STP-22.2, 1B MDAFW Pump Quarterly Inservice Test.
- R-19, SGBD SAMPLE, radiation monitor is in alarm and indication is stable above the alarm setpoint.
- The Shift Radio Chemist requests to sample the Steam Generators.

Which one of the following describes the actions that will allow the Shift Radio Chemist to obtain a sample of the Steam Generators per SOP-45.0, Radiation Monitoring System?

A. Pull the INSTRUMENT power fuses for R-19, then open the sample valves.

B. Pull the DC power fuses to each sample valve solenoid to fail the valve open.

C. Place 1B MDAFW pump handswitch to the STOP position, then open the sample valves.

D. Place R-19 Operation Selector Switch to the RESET position, then open the sample valves.

53. **Unit 2** is at 31% power with the following conditions:

- A lightning strike causes the 2A **AND** 2B Circulating Water pumps to trip.
- Main Condenser pressure is 6.0 psia and degrading rapidly.
- All Steam Generator narrow range levels are 50% and slowly falling.

Which one of the following completes the statement below?

An automatic Reactor trip _(1)_ occurred, _(2)_ .

	(1)	(2)
A.	HAS	Steam Dumps have opened
B.	HAS	MDAFW pumps have started
C.	has NOT	Steam Dumps have opened
D.	has NOT	MDAFW pumps have started

54. Unit 1 is at 25% power with the following conditions:

At 10:00:
- The 1A S/U transformer is de-energized.
- The 1-2A DG restores power to the Unit 1 ESF busses.

At 10:15:
- A Safety Injection occurs.

Which one of the following describes the position of SW TO TURB BLDG ISO MOVs, 514, 515, 516, 517, following the Safety Injection?

A. MOV's powered from A Train are throttled,
   MOV's powered from B Train are closed.

B. MOV's powered from A Train are closed,
   MOV's powered from B Train are throttled.

C. All MOV's are throttled.

D. All MOV's are closed.

55. Unit 1 has high reactor coolant activity due to failed fuel as indicated by an upscale reading on the Gross Failed Fuel Detector (GFFD).

Which one of the following completes the statements below?

The GFFD provides indication of failed fuel by detection of __(1)__ .

The GFFD __(2)__ on a high radiation signal.

	__(1)__	__(2)__
A.	N-16 gamma radiation	automatically isolates the RCS sample system
B.	N-16 gamma radiation	provides **NO** automatic isolation
C.	delayed neutrons	automatically isolates the RCS sample system
D.	delayed neutrons	provides **NO** automatic isolation

56. Which one of the following completes the statement below?

MOV-515, SW TO TURB BLDG ISO, on Unit 1 is powered from 600V _(1)_ , which is supplied from a(n) _(2)_ Diesel Generator during an LOSP.

	(1)	(2)
A.	MCC 1N	A Train
B.	MCC 1T	A Train
C.	MCC 1N	B Train
D.	MCC 1T	B Train

57. The following conditions exist on Unit 2:

At 10:00:
- Reactor power is 25% and stable.
- PCC (Power Control Center) has notified the Control Room that the offsite grid has become degraded.

At 10:05:
- Multiple alarms occur in the Unit 2 Control Room.

Which one of the following alarms that are **LIT**, will be addressed and actions performed **FIRST**?

A. EF1, 2A RCS LOOP FLOW LO OR 2A RCP BKR OPEN (Red Window)

B. YE2, 2G 4KV BUS OV-OR-UV OR LOSS OF DC (White Window)

C. KG2, EH FLUID LEVEL LO-LO (Red Window)

D. MB1, 2B S/U XFMR UV (White Window)

58. **Unit 1** Air Compressors are aligned in the following configuration:

- The 1A air compressor panel key switch is in the **MCB** position and the AUTOMATIC OPERATION LED (green light) is LIT.
- The 1B and 1C air compressors are aligned to the sequencer panel.

Which one of the following describes the reason for this alignment?

A. To prevent a complete loss of Instrument Air pressure due to a failure of the sequencer panel pressure transducer.

B. To prevent a complete loss of Instrument Air pressure due to a loss of power to the sequencer panel.

C. To ensure that the 1A air compressor is available to be started from the ESS or LOSP Sequencer.

D. To ensure that all three air compressors do not run at the same time and possibly overheat due to insufficent Service Water flow.

59. Which one of the following describes the correct configuration for the Containment Main Personnel Access Hatch doors and equalizing valves while the airlock is in use for entering/exiting Containment?

A. Outer door OPEN
Outer door equalizing valve OPEN

Inner door CLOSED
Inner door equalizing valve CLOSED

B. Outer door OPEN
Outer door equalizing valve OPEN

Inner door CLOSED
Inner door equalizing valve OPEN

C. Outer door CLOSED
Outer door equalizing valve OPEN

Inner door OPEN
Inner door equalizing valve CLOSED

D. Outer door CLOSED
Outer door equalizing valve CLOSED

Inner door OPEN
Inner door equalizing valve CLOSED

60. Unit 1 has experienced a Reactor Trip and Safety Injection due to a LOCA, with the following conditions:

- EEP-0, Reactor Trip or Safety Injection, has been completed and EEP-1, Loss of Reactor or Secondary Coolant, has been entered.
- AOP-34.0, Malfunction of RCS Wide Range Pressure Indication, has been implemented to determine actual RCS pressure.
- PT-455, 456, 457, PRZR PRESS, all indicate 1700 psig.
- PT-402, RCS WR PRESS, indicates 1600 psig.
- PT-403, RCS WR PRESS, indicates 750 psig.
- FI-943, A TRN HHSI FLOW, indicates 550 gpm.

Which one of the following completes the statements below?

AOP-34.0 will require Charging Pump Miniflow valves to be __(1)__ prior to RCS pressure determination.

Actual RCS pressure is __(2)__ .

References Provided

	(1)	(2)
A.	open	750 psig
B.	open	1600 psig
C.	closed	750 psig
D.	closed	1600 psig

61. Unit 1 is in Mode 1 at 100% power with the following conditions.

- Chemistry reports that RCS Dissolved Oxygen is 50 ppm.

Which one of the following completes the statements below?

Per TRM 13.4.1, RCS Chemistry, the RCS Dissolved Oxygen limit __(1)__ been exceeded.

__(2)__ is used to control RCS Dissolved Oxygen in Mode 1.

	(1)	(2)
A.	has **NOT**	Hydrazine
B.	**HAS**	Hydrazine
C.	has **NOT**	Hydrogen
D.	**HAS**	Hydrogen

62. A one step Tagout has been issued to place a Danger Tag on an MOV handwheel.

The following condition exists:

- A Caution Tag is on the handwheel of the MOV.

Which one of the following completes the statement below?

Per NMP-AD-003-001, Tag Standards, the operator is required to ____

A. return the Tagout to the Tagging Official because two tags cannot exist on the same component.

B. place the Danger tag on the MOV handwheel, remove the Caution Tag, and return it to the Tagging Official.

C. place the Danger tag on the MOV handwheel and ensure the Danger Tag is visible on top of the Caution Tag.

D. place the Danger tag on the MOV handwheel and move the Caution Tag to another visible location on the MOV.

63. Unit 2 is shutdown with the following conditions:

- All Reactor Trip breakers are open.
- RCS pressure is 2200 psig.
- RCS temperature is 540°F and slowly decreasing.
- N-31, Source Range NI, is out of service for repairs.
- N-32, Source Range NI, has just failed LOW.
- A channel check on Gamma Metrics Source Range instrumentation has been performed.

Which ONE of the following describes Tech Spec 3.3.1, Reactor Trip System (RTS) Instrumentation, REQUIRED ACTION due **within one hour** for these conditions?

A. Verify shutdown margin.

B. Verify interlock is in required state.

C. Commence an RCS heatup to 547°F.

D. Place channel N-32 in the tripped condition.

64. Unit 1 is in Mode 5 for a refueling outage. A small accessible area in containment has a general area dose rate of 1150 mrem/hr. The top of this area cannot be enclosed for the purpose of locking the area.

Which one of the following completes the statement below?

Per Tech Spec 5.7.3, in addition to the area being barricaded off, the **minimum** control(s) required for this area is/are to ____ .

A. be conspicuously posted **ONLY**

B. be conspicuously posted **AND** have a flashing light

C. have continuous surveillance by closed circuit TV **ONLY**

D. have continuous surveillance by closed circuit TV **AND** have a flashing light

65. You have been given a task to perform an inspection of the Containment Equipment Sump. P017A & B, CTMT SUMP PUMP handswitches are in the "Pull-to-Lock" position on the BOP.

Which one of the following is a condition that would result in excessive radiation exposure rates in the Containment Equipment Sump Area?

A. Draining the RCS to mid-loop prior to core off load.

B. Withdrawal of the Incore Detectors from the core.

C. Movement of irradiated fuel in the reactor vessel.

D. A leak in the Auxiliary Building results in lowering Reactor Cavity level.

66. Which one of the following completes the statement below?

The maximum allowable exposure that may be required when performing emergency on-site actions **to protect valuable property is** ____ per EIP-14.0, Personnel Movement, Relocation, Re-entry and Site Evacuation.

A. 5 Rem

B. 10 Rem

C. 25 Rem

D. 100 Rem

67. Unit 1 has entered ESP-1.3, Transfer To Cold Leg Recirculation.

Which one of the following states the action required for implementing the Functional Restoration Procedures (FRP's) while in ESP-1.3, and the basis for the action?

A. FRP's **should not** be implemented until RHR and Charging pumps are aligned for recirculation and flow is stable.

   This is because of the limited amount of water in the RWST available for maintaining suction to ECCS pumps.

B. FRP's **should not** be implemented while in ESP-1.3 until RWST level is < 4.5 feet.

   This is because insufficient water may be present in the Containment Sump to prevent cavitation while on recirculation.

C. FRP's **should** be implemented immediately at any time while in ESP-1.3.

   This is because of the limited amount of water in the RWST available for maintaining suction to ECCS pumps.

D. FRP's **should** be implemented immediately at any time while in ESP-1.3.

   This is because they are always the highest priority while in the Emergency Procedures.

68. The following conditions exist on UNIT 1.

- MH1, FIRE, annunciator on the Unit 1 Main Control Board is in alarm and is LIT solid (NOT flashing).
- The Control Room Fire Alarm Panel has a single window in alarm, which contains the following information:

"Aux Bldg El 139 W Side
Det 1A-39, 43, 46, 53
1A-55, 59, 106"

- At the PYR-A-LARM Panel, the window for 1A-59 panel is lit.

Which one of the following describes the **MINIMUM** actions required to enable MH1, FIRE, to reflash for a fire detection system actuation in zone 1A-106 per SOP-0.4, Fire Protection Administration Procedure?

A. The Control Room Fire Alarm Panel must be acknowledged AND Zone 1A-59 placed in OVERRIDE at the PYR-A-LARM Panel.

B. The Control Room Fire Alarm Panel must be acknowledged AND the Local Reflash Panel alarm for detection system 1A-59 must be acknowledged.

C. ONLY the Control Room Fire Alarm Panel must be acknowledged.

D. ONLY the Local Reflash Panel alarm for detection system 1A-59 must be acknowledged.

69. Unit 1 has had a Reactor trip and Safety Injection actuation with the following conditions:

- A LOCA has occurred in containment.
- EEP-0, Reactor Trip or Safety Injection, is in progress.
- RCS pressure is 1100 psig and stable.
- Containment pressure is 12 psig and slowly rising.

Which one of the following is an annunciator that will be in alarm at this time?

A. MCB alarm JH1, 1A SG MSIV CLOSED

B. MCB alarm CD1, 1A ACCUM PRESS HI-LO

C. MCB alarm HD2, PRZR PRESS SI PORV BLOCK P-11

D. BOP alarm LB3, RCP THRM BARR ISO HV-3184 AIR PRESS LO

70. The following conditions exist on Unit 1:

- A Small Break LOCA has occurred.
- Natural circulation has been established.
- The crew is performing ESP-1.2, Post LOCA Cooldown and Depressurization.

Which one of the following completes the statements below per ESP-1.2?

Opening __(1)__ may cause voiding to occur.

Voiding is detected by __(2)__ .

A. 1) the steam dumps to establish a cooldown rate of 85°F/hr

2) LI-460, PRZR LVL, rapidly increasing

B. 1) one PORV to reduce RCS pressure to refill the pressurizer

2) LI-460, PRZR LVL, rapidly increasing

C. 1) the steam dumps to establish a cooldown rate of 85°F/hr

2) TI-2301, CORE EXIT THERMOCOUPLE MONITOR, rapidly increasing

D. 1) one PORV to reduce RCS pressure to refill the pressurizer

2) TI-2301, CORE EXIT THERMOCOUPLE MONITOR, rapidly increasing

71. The crew has transitioned to ECP-1.2, LOCA Outside Containment.

Which one of the following completes the statements below per ECP-1.2?

__(1)__ piping will be isolated.

The instrumentation used to determine when the intersystem LOCA has been isolated is __(2)__ .

A. 1) Low Head Safety Injection

2) Auxiliary Building radiation monitors decreasing

B. 1) High Head Safety Injection

2) Auxiliary Building radiation monitors decreasing

C. 1) Low Head Safety Injection

2) RCS LOOP Wide Range pressure indicators increasing

D. 1) High Head Safety Injection

2) RCS LOOP Wide Range pressure indicators increasing

72. A loss of ALL feedwater has occurred on Unit 1. The team is implementing FRP-H.1, Response to Loss of Secondary Heat Sink, and the following conditions exist:

- SI has **NOT** actuated.
- RCS temp is 547°F.
- 1A SGFP has just been started and has been aligned to feed all SGs.
- Attachment 1, MAIN FEEDWATER BYPASS VALVES AUTOMATIC CLOSURE DEFEAT, has been completed.
- The red light is LIT on the following handswitches:
  - MOV-3232A, MAIN FW TO 1A SG STOP VLV
  - MOV-3232B, MAIN FW TO 1B SG STOP VLV
  - MOV-3232C, MAIN FW TO 1C SG STOP VLV

Immediately upon feeding the SGs, GB5, STM LINE LO PRESS RX TRIP SI, annunciator comes into alarm.

Which one of the following completes the statement below?

The 1A SGFP __(1)__ trip.

MOV-3232A, B, C __(2)__ automatically close.

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

73. FRP-P.1, Response to Imminent Pressurized Thermal Shock Conditions, has been entered on Unit 1.

A one hour soak is required.

Which one of the following completes the statements below per FRP-P.1?

The soak allows thermal gradients on the _(1)_ to be reduced, thus reducing corresponding stresses.

If a cooldown is required **AFTER** the soak, the maximum cooldown rate is _(2)_ in any 60 minute period.

A. 1) Steam Generator shell wall

2) < **50**°F

B. 1) Steam Generator shell wall

2) < **100**°F

C. 1) Reactor Vessel wall

2) < **50**°F

D. 1) Reactor Vessel wall

2) < **100**°F

74. Unit 1 has experienced a Reactor trip and Safety Injection with the following conditions:

At 10:00:
- EEP-1.0, Loss of Reactor or Secondary Coolant, is entered due to a LOCA.

The following equipment problems have occurred:
- 1A RHR pump is tripped.
- MOV-3185A, CCW TO 1A RHR HX, will not open.
- 1C Charging Pump is tripped (1B Charging Pump is on A Train).
- MOV-8827B, CTMT SUMP TO 1B CS PUMP, breaker is tripped.
- MOV-8706B, 1B RHR HX TO CHG PUMP SUCT, breaker is tripped.

At 10:10:
- ECP-1.1, Loss of Emergency Coolant Recirculation, is entered.

Which one of the following equipment failures, if corrected, will restore Emergency Coolant Recirculation and allow exit of ECP-1.1?

A. Power restored to MOV-8827B.

B. 1A RHR pump returned to service.

C. Power restored to MOV-8706B.

D. 1C Charging pump returned to service.

75. Unit 1 has experienced a Large Break LOCA with the following conditions:

- Containment pressure is 32 psig.
- Containment sump level is 7.2 feet.
- ONLY 1B Containment Spray pump is running.
- Containment Spray flow is 1600 gpm.

Which one of the following completes the statement below?

A Containment CSF Status Tree ORANGE path ____ .

A. exists for **BOTH** FRP-Z.1, Response To High Containment Pressure **AND** FRP-Z.2, Response To Containment Flooding

B. does **NOT** exist for **EITHER** FRP-Z.1, Response To High Containment Pressure **OR** FRP-Z.2, Response To Containment Flooding

C. exists for **ONLY** FRP-Z.2, Response To Containment Flooding

D. exists for **ONLY** FRP-Z.1, Response To High Containment Pressure

RO Key

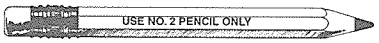
LAST NAME	FIRST NAME	MI
RO KEY		

PLATEAU ID
A A A A 0 0 0 0 A
B B B B 1 1 1 1 B
C C C C 2 2 2 2 C
D D D D 3 3 3 3 D
E E E E 4 4 4 4 E
F F F F 5 5 5 5 F
G G G G 6 6 6 6 G
H H H H 7 7 7 7 H
I I I I 8 8 8 8 I
J J J J 9 9 9 9 J

TEST FORM
0 1 2 3 4 5 6 7 8 9

TEST VERSION
0 1 2 3 4 5 6 7 8 9

SOUTHERN COMPANY



- EXAMPLE: A B ● D E
- ERASE COMPLETELY TO CHANGE

	(T)	(F)		
1.	A	●	C	D
2.	●	B	C	D
3.	A	●	C	D
4.	●	B	C	D
5.	A	B	●	D
6.	●	B	C	D
7.	A	B	C	●
8.	●	B	C	D
9.	A	B	●	D
10.	A	●	C	D
11.	●	B	C	D
12.	A	B	C	●
13.	A	●	C	D
14.	A	B	●	D
15.	●	B	C	D
16.	A	B	C	●
17.	A	●	C	D
18.	A	B	C	●
19.	A	B	C	●
20.	A	●	C	D
21.	A	B	●	D
22.	A	●	C	D
23.	A	B	●	D
24.	●	B	C	D
25.	A	B	●	D

	(T)	(F)		
26.	A	B	●	D
27.	●	B	C	D
28.	●	B	C	D
29.	A	B	C	●
30.	A	B	C	●
31.	A	●	C	D
32.	A	B	●	D
33.	A	●	C	D
34.	●	B	C	D
35.	A	B	C	●
36.	A	●	C	D
37.	A	B	●	D
38.	A	B	C	●
39.	●	B	C	D
40.	A	B	●	D
41.	●	B	C	D
42.	A	B	C	●
43.	A	B	●	D
44.	A	●	C	D
45.	A	●	C	D
46.	●	B	C	D
47.	●	B	C	D
48.	A	B	●	D
49.	A	B	C	●
50.	A	B	●	D

	(T)	(F)		
51.	●	B	C	D
52.	A	B	C	●
53.	A	B	C	●
54.	A	B	C	●
55.	A	B	C	●
56.	●	B	C	D
57.	●	B	C	D
58.	●	B	C	D
59.	●	B	C	D
60.	A	B	C	●
61.	A	B	C	●
62.	A	B	●	D
63.	●	B	C	D
64.	A	●	C	D
65.	A	●	C	D
66.	A	●	C	D
67.	●	B	C	D
68.	A	●	C	D
69.	A	B	●	D
70.	A	●	C	D
71.	A	B	●	D
72.	A	B	C	●
73.	A	B	●	D
74.	A	B	●	D
75.	A	●	C	D

	(T)	(F)		
76.	A	B	C	D
77.	A	B	C	D
78.	A	B	C	D
79.	A	B	C	D
80.	A	B	C	D
81.	A	B	C	D
82.	A	B	C	D
83.	A	B	C	D
84.	A	B	C	D
85.	A	B	C	D
86.	A	B	C	D
87.	A	B	C	D
88.	A	B	C	D
89.	A	B	C	D
90.	A	B	C	D
91.	A	B	C	D
92.	A	B	C	D
93.	A	B	C	D
94.	A	B	C	D
95.	A	B	C	D
96.	A	B	C	D
97.	A	B	C	D
98.	A	B	C	D
99.	A	B	C	D
100.	A	B	C	D

RO Key

FIGURE 1

ONE CHARGING PUMP RUNNING IN SI MODE

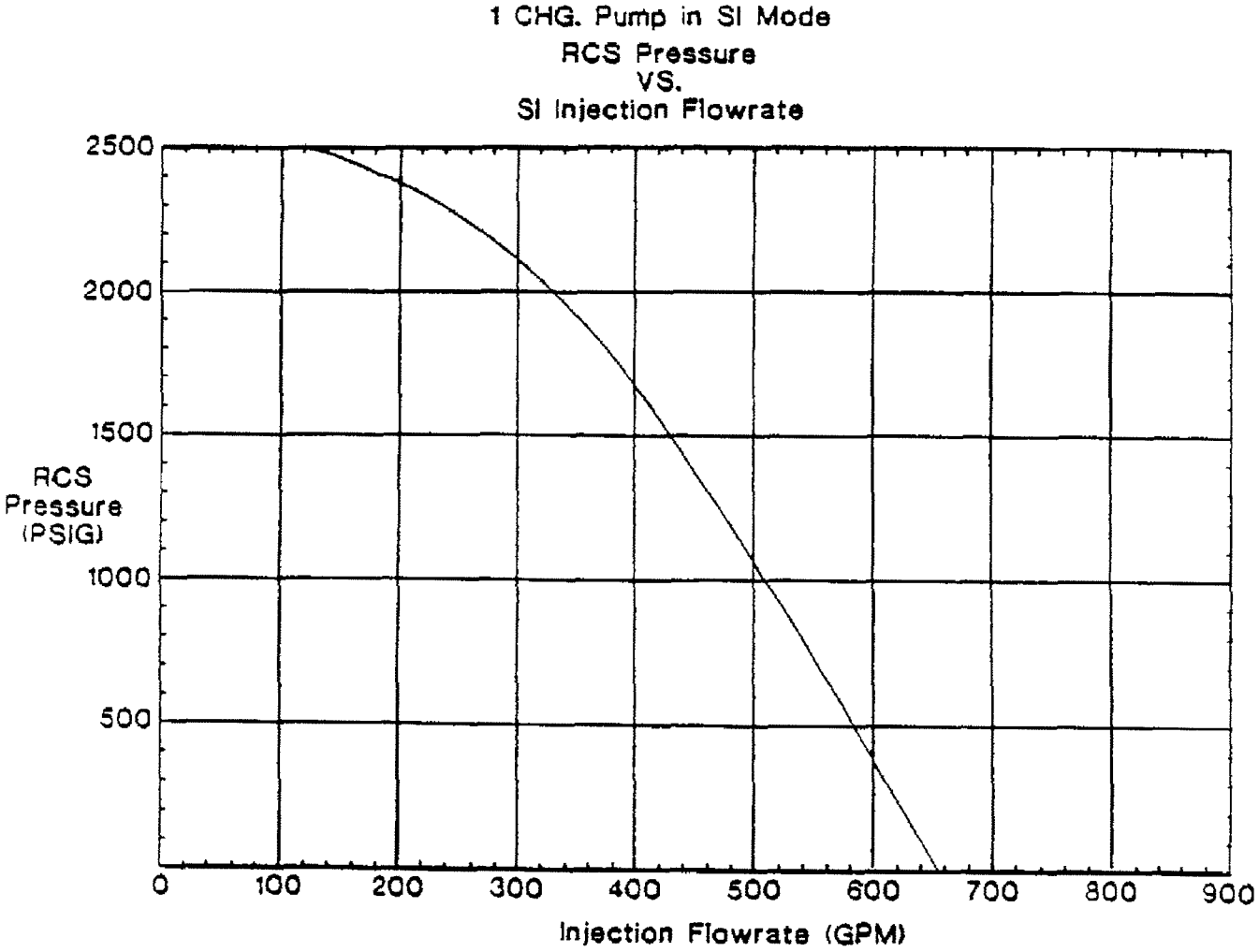


FIGURE 2

TWO CHARGING PUMPS RUNNING IN SI MODE

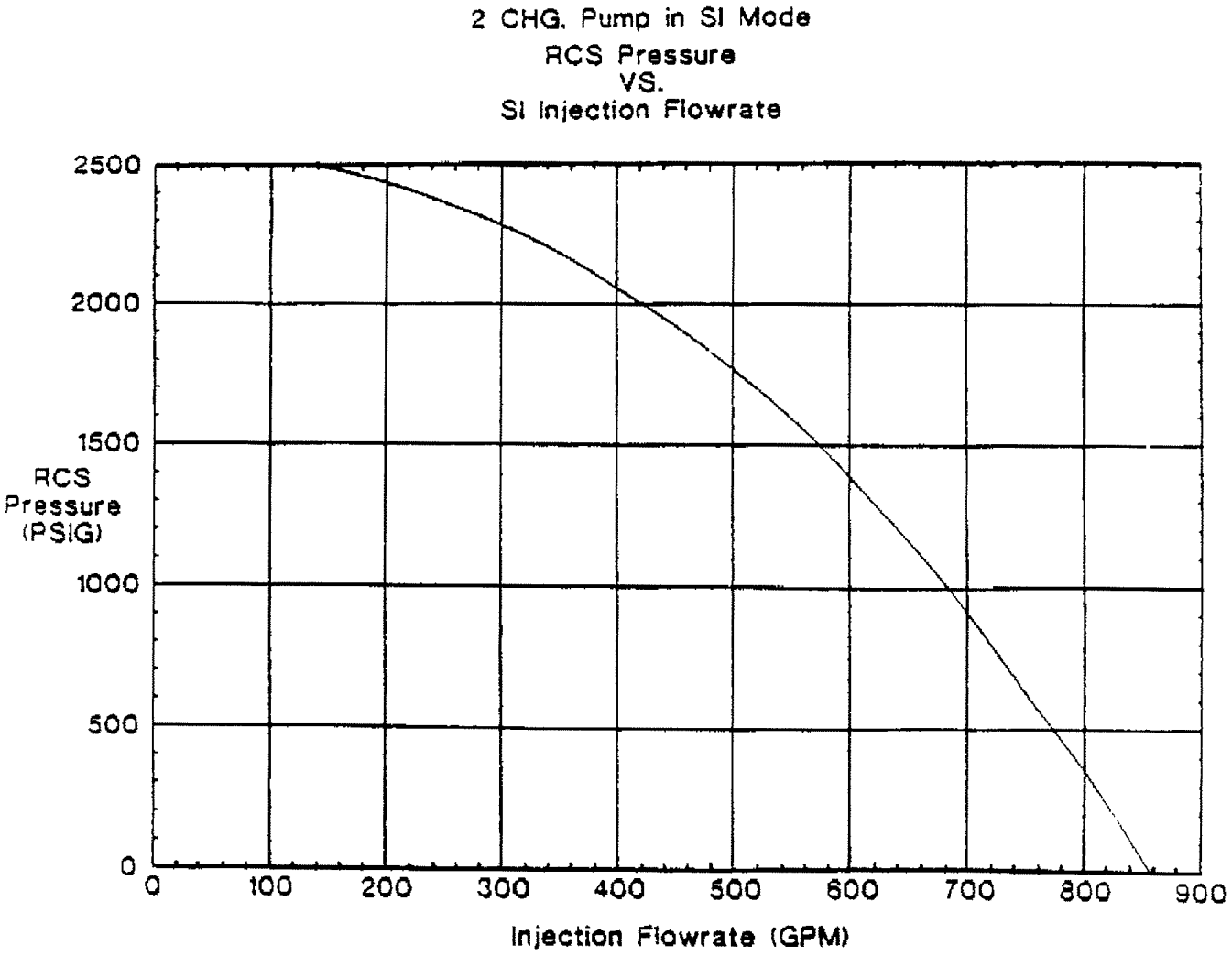


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FIGURE 3

THREE CHARGING PUMPS RUNNING IN SI MODE