

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: SYS A

**TITLE: PZR Pressure Control Using
Auxiliary Spray**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Establish Auxiliary Pressurizer Spray IAW EOP Supplement 37

Alternate Path: Charging Pump P-55A trips while attempting to control PZR Pressure using auxiliary spray requiring operator to start P-55C Charging Pump.

Facility JPM #: NEW

K/A: 010K6.03 Importance: RO: 3.2 SRO: 3.6

K/A Statement: Knowledge of the effect of a loss or malfunction of the following will have on the PZR PCS: PZR sprays and heaters.

Task Standard: PZR Pressure controlled within given band.

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: EOP-8.0, revision 14
EOP Supplement 37, revision 7
ARP-4, revision 56

Validation Time: 10 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- EOP Supplement 37, revision 7

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The plant has entered EOP-8.0, "Loss of all Forced Circulation" due to a loss of off-site power. EDGs 1-1 and 1-2 have started and loaded buses 1C and 1D. Charging pump P-55B is OOS for corrective maintenance.

INITIATING CUES:

The Control Room Supervisor has directed you to perform EOP Supplement 37 to control PZR Pressure using Auxiliary Spray between 1700 psia and 1800 psia.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Operator locates EOP Supplement 37	EOP Supplement 37 is located	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
1	<p>MONITOR PZR Auxiliary spray line ΔT using the following instruments:</p> <ul style="list-style-type: none"> TI-0101, PZR Vapor Phase Temperature TI-0212, Charging Temperature 	<p>Operator locates instrument readings:</p> <p>___ TI-0101 on panel C-12</p> <p>___ TI-0212 on panel C-02</p> <p style="text-align: center;"><u>OR</u></p> <p>Operator monitors instrument readings on the PPC</p>	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
2	<p>IF PZR Auxiliary Spray is operated when differential temperature between spray water and PZR vapor phase is greater than 200°F, THEN PERFORM the following:</p> <ol style="list-style-type: none"> LOG the time, differential temperature, and PZR pressure in the Narrative Log. RECORD the cumulative total of spray cycles with greater than 200°F differential temperature in the Narrative Log. INITIATE an Action Request. 	<p>Operator monitors and determines if spray water and PZR vapor phase temperature ΔT is >200°F, then operator:</p> <p>___ Logs the time, differential temperature, and PZR Pressure.</p> <p>___ Records the cumulative total of spray cycles with ΔT >200°F.</p> <p>___ Recognizes the need to initiate an action request.</p>	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
3	ENSURE BOTH Pressurizer Spray valve Auto/Manual Switches in CLOSE: <u>PZR SPRAY VALVE</u> <u>AMS</u> CV-1057 AMS-1057 CV-1059 AMS-1059	Operator places AMS-1057 and 1059 in CLOSE.	S U
Comment:			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
4	ENSURE OPERATING at least one Charging Pump.	Operator ensures charging pump P-55A in service.	S U
Comment:			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
5	ALIGN PZR Auxiliary Spray as follows: a. ENSURE OPEN HS-2111, Charging Line Stop Valve. b. ENSURE CLOSED MO-3072, Charging Pumps Discharge to Train 2.	Operator ensures: ___ CV-2111 is open (HS-2111) ___ MO-3072 is closed	S U
Comment:			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
6	OPERATE HS-2117, Aux Spray CV-2117 key switch, as desired. (Key: 151)	Operator takes handswitch HS-2117 to OPEN using Key 151 to lower PZR Pressure to within control band per initiating cue.	S U
<p>Comment:</p> <p>Evaluator Note: Five seconds after HS-2117 is taken to open, charging pump P-55A will trip. Operator will determine that step 7 is required to be performed to raise charging flow.</p> <p>CRITICAL STEP</p>			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
7	<p>IF additional flow through the PZR Auxiliary Spray Valve is required, THEN PERFORM ANY the following:</p> <p>a. START additional Charging Pumps as necessary.</p> <p>b. IF emergency boration is in progress, THEN CLOSE only one Charging Distribution Stop Valve:</p> <ul style="list-style-type: none"> • CV-2113 • CV-2115 <p>c. IF emergency boration is NOT required, THEN CLOSE the following Charging Distribution Stop valves, one at a time, until the desired flow is obtained:</p> <ul style="list-style-type: none"> • CV-2113 • CV-2115 	<p>Operator determines that step 'a' is applicable because there is currently zero charging flow. Operator then places charging pump, P-55C, in service by performing the following:</p> <p>___ Places P-55C Control select switch on panel C-12 to MANUAL position.</p> <p>___ Places P-55C control switch to CLOSE</p> <p>Operator determines that steps 'b' and 'c' are not applicable because there was zero charging flow</p>	S U
<p>Comment:</p> <p>CRITICAL STEP</p>			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
(6)	OPERATE HS-2117, Aux Spray CV-2117 key switch, as desired. (Key: 151)	Operator takes HS-2117 to CLOSE when PZR pressure is within control band given in initiating cue.	S U
<p>Comment:</p> <p>Evaluator Cue: Terminate the JPM when PZR pressure is lowering as indicated on PI-0104.</p>			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant has entered EOP-8.0, "Loss of all Forced Circulation" due to a loss of off-site power. EDGs 1-1 and 1-2 have started and loaded buses 1C and 1D. Charging pump P-55B is OOS for corrective maintenance.

INITIATING CUES:

The Control Room Supervisor has directed you to perform EOP Supplement 37 to control PZR Pressure using Auxiliary Spray between 1700 psia and 1800 psia.

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17
- Manually trip the reactor.
- Perform EOP-1.0 actions
- Ensure Pressurizer pressure is >1850 psia.
- Secure all PCPs.
- Secure P-55C charging pump, if operating
- Open 152-203 and 152-105 to cause the EDGs to start and load
- Take manual control of ADVs to stabilize PCS Temperature @ 538 - 540°F
- De-energize buses A, B, E, F, G
- Close MSIVs
- Place P-55B in MANUAL
- Isolate Letdown
- Set Remote CV33 on PID CVC01 (P-55B Breaker Rackout) to RACKOUT
- Insert OR P-55B-G to OFF.
- Hang caution tag on P-55B hand switch that states "P-55B out of service"
- Create event trigger 1 per the following
 - Enter ZDI2P(159) for event
 - Leave action blank
- Insert Malfunction CV03A (P-55A trip) with a 5 second delay and assign to event trigger 1

REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM: SYS B

TITLE: MAKEUP TO SIRWT

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform Safety Injection Refueling Water Tank Operations

Alternate Path: NO

Facility JPM #: PL-OPS-SIS-001J

K/A: 006A1.15 Importance: RO: 3.3 SRO: 3.9

K/A Statement: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ECCS controls including: RWST Level and temperature

Task Standard:

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: SOP-2A, revision 64

Validation Time: 20 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-2A, revision 64

Also see **Simulator Operator Instructions** (last page of this document).

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INITIAL CONDITIONS:

- Plant is at full power operation.
- The Shift Engineer has calculated a blend ratio for raising SIRWT Level per SOP-2A section 7.6.1.a
- 35 gallons of Boric Acid from T-53B and 150 gallons of Primary Makeup water are to be added to the SIRWT.

INITIATING CUES:

- The Control Room Supervisor directs you to perform SOP-2A section 7.6.1.b through 7.6.1.h to add 185 gallons of borated water to SIRWT using the above blend ratio.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locate SOP-2A step 7.6.1.b	SOP-2A step 7.6.1.b located	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.6.1.b.1	IF adding boric acid to SIRW Tank, THEN perform the following: Ensure CV-2155 closed	CV-2155 checked closed.	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.6.1.b.2	Push reset button on FIC-0210B	Reset push button on FIC-0210B depressed	S U
Comment: Candidate may also refer to Operator Aid 116 for controller operation.			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.6.1.b.3	Ensure in AUTO FIC-0210B	FIC-0210B in AUTO	S U
Comment:			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
7.6.1.b.4	Ensure FIC-0210B output signaling fully closed (zero output).	FIC-0210B signaling fully closed	S U
Comment:			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
7.6.1.b.5	SET BATCH on FIC-0210B, Concentrated Boric Acid Controller, to the desired quantity of Concentrated Boric Acid.	35 gallons inputted in Batch mode of FIC-0210B	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
7.6.1.b.6	Set flow limit on FIC-0210B to desired flow rate.	Flow rate on FIC-0210B set at ≤ 25 gpm.	S U
Comment:			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
7.6.1.c.1	IF adding Primary Makeup Water to SIRW Tank, THEN perform the following: ENSURE CLOSED CV-2155, Boric Acid Blender Outlet Control Valve.	CV-2155 closed	S U
Comment:			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
7.6.1.c.2	PUSH RESET button FIC-0210A, Primary Makeup Water Controller.	Reset push button on FIC-0210A depressed	S U
Comment:			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
7.6.1.c.3	ENSURE in AUTO FIC-0210A, Primary Makeup Water Controller.	FIC-0210A in AUTO	S U
Comment:			

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
7.6.1.c.4	ENSURE FIC-0210A, Primary Makeup Water Controller, output signaling full closed.	FIC-0210A signaling fully closed.	S U
Comment:			

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
7.6.1.c.5	SET BATCH on FIC-0210A, Primary Makeup Water Controller, to the desired quantity of Primary Makeup Water.	150 gallons inputted in Batch mode of FIC-0210A	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
7.6.1.c.6	SET FLOW LIMIT on FIC-0210A, Primary Makeup Water Controller, to the desired Primary Makeup Water flow rate.	Flow rate on FIC-0210A set at ≥ 30 gpm.	S U
Comment:			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
7.6.1.d	OPEN MV-CVC2157, Blended Boric Acid to SIRW Tank T-58 Isolation Valve.	Operator calls AO and directs MV-CVC-2157 to be opened.	S U
Comment: Simulator Operator: Use CV28 on PID CV01 to open MV-CVC2157 CRITICAL STEP			

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
7.6.1.e.1	ENSURE 100% OPEN the appropriate Recirculation Control Valve: <ul style="list-style-type: none"> CV-2136, P-56B (preferred) CV-2130, P-56A 	Operator verifies CV-2136 100% open.	S U
Comment:			

Proc. Step	TASK ELEMENT 16	STANDARD	Grade
7.6.1.e.2	START a Boric Acid Pump. <ul style="list-style-type: none"> P-56B (preferred) P-56A 	Operator takes P-56B hand switch to start and verifies pump running.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 17	STANDARD	Grade
7.6.1.e.3	PUSH the START button on FIC-0210B, Concentrated Boric Acid Controller.	START pushbutton on FIC-0210B is depressed.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 18	STANDARD	Grade
7.6.1.e.4	WHEN FIC-0210B, Concentrated Boric Acid Controller, reaches its batch set value, THEN ENSURE: (a) CV-2153, Concentrated Boric Acid Makeup Valve, is closed (zero flow). (b) FIC-0210B, Controlled Boric Acid Controller, signals a zero output	___ CV-2153 indicates fully closed ___ FIC-0210B signaling fully closed	S U
Comment:			

Proc. Step	TASK ELEMENT 19	STANDARD	Grade
7.6.1.e.5	STOP operating Boric Acid Pump.	P-56B hand switch is taken to OFF	S U
Comment:			

Proc. Step	TASK ELEMENT 20	STANDARD	Grade
7.6.1.e.6	FLUSH line with at least 150 gallons of PMW. Refer to Step f.	Operator determines that this step will be completed via step 7.6.1.f	S U
Comment: Evaluator Note: This task will be completed via next step			

Proc. Step	TASK ELEMENT 21	STANDARD	Grade
7.6.1.f.1	ENSURE in MANUAL P-90A or P-90B, PMW Transfer Pump, and the other OFF.	Operator verifies P-90A or P-90B in manual and the other OFF.	S U
Comment:			

Proc. Step	TASK ELEMENT 22	STANDARD	Grade
7.6.1.f.2	PUSH the START button on FIC-0210A, Primary Makeup Water Controller.	START push button depressed on FIC-0210A	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 23	STANDARD	Grade
7.6.1.f.3	WHEN FIC-0210A, Primary Makeup Water Controller, reaches its batch set value, THEN ENSURE: (a) CV-2165, Primary Makeup Water Control Valve, is closed (zero flow). (b) FIC-0210A, Primary Makeup Water Controller, signals a zero output.	___ CV-2165 indicates fully closed ___ FIC-0210A signaling fully closed	S U
Comment:			

Proc. Step	TASK ELEMENT 24	STANDARD	Grade
7.6.1.g	CLOSE MV-CVC2157, Blended Boric Acid to SIRW Tank T-58 Isolation.	Operator calls AO and directs MV-CVC2157 be closed.	S U
Comment:			
Simulator Operator: Use CV28 on PID CV01 to close MV-CVC2157			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 25	STANDARD	Grade
7.6.1.h	RECORD in appropriate log total gallons added from: <ul style="list-style-type: none"> • FIC-0210B, Concentrated Boric Acid Controller • FIC-0210A, Primary Makeup Water Controller 	Operator simulates recording the following values for gallons added in the Operations Narrative log: FIC-0210B – 35 gallons FIC-0210A –150 gallons	S U
Comment: Evaluator Note: Ensure the candidate verbalizes that they would make a narrative log entry.			

Proc. Step	TASK ELEMENT 26	STANDARD	Grade
n/a	Operator informs CRS that 185 gallons of borated water have been added to the Safety Injection Refueling Water Tank.	CRS Informed	S U
Comment: Evaluator Note: Role play as CRS			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- Plant is at full power operation.
- The Shift Engineer has calculated a blend ratio for raising SIRWT Level per SOP-2A section 7.6.1.a
- 35 gallons of Boric Acid from T-53B and 150 gallons of Primary Makeup water are to be added to the SIRWT.

INITIATING CUES:

- The Control Room Supervisor directs you to perform SOP-2A section 7.6.1.b through 7.6.1.h to add 185 gallons of borated water to SIRWT using the above blend ratio.

SIMULATOR OPERATOR INSTRUCTIONS

- IC-17 or equivalent full power IC
- Use CV28 on PID CV01 to operate MV-CVC2157

REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM: SYS C

TITLE: START A PCP

CANDIDATE: _____

EXAMINER: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-1A, revision 8

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

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INITIAL CONDITIONS:

Primary Coolant Pumps P-50B, 50C and 50D are in service. The plant is in MODE 3 with PCS Temperature approximately 450°F. Proper Shutdown margin has been verified. RPS Breakers 42-1 and 42-2 have been opened.

INITIATING CUES:

The Control Room Supervisor directs you to start PCP P-50A in accordance with SOP-1A, Section 7.1.2, steps g through w. Testing of the oil system is NOT required.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Operator locates SOP-1A section 7.1.2.g	SOP-1A is located	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.1.2.g	CHECK Annunciator EK-0931 "PRI COOLANT PUMP P-50A CLG WTR LO FLOW" for P-50A NOT in alarm (Panel C-12).	Operator verifies that EK-0931 alarm tile is not in alarm, i.e., not lit.	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.1.2.h	ENSURE OPEN the following valves: <ul style="list-style-type: none"> • CV-2083, PCP Controlled Bleed Off Isolation • CV-2191, PCP Controlled Bleed Off Relief Stop • CV-2099, PCP Controlled Bleed Off Isolation 	Operator verifies valves are open, green light off and red light on. <ul style="list-style-type: none"> ___ CV-2083, PCP Controlled Bleed Off Isolation ___ CV-2191, PCP Controlled Bleed Off Relief Stop ___ CV-2099, PCP Controlled Bleed Off Isolation 	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.1.2.i	THROTTLE MV-CVC2194, PCP Controlled Bleed Off until PIA-0215, PCP Controlled Bleed Off Header Pressure Indicator (Panel C-02) indicates between 25 to 100 psig.	Operator verifies PIA-0215 on panel C-02 reads between 25 and 100 psig.	S U
Comment:			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
7.1.2.j	<p>VERIFY PCP Controlled Bleed Off Flow for pump(s) to be started by observing the following:</p> <ul style="list-style-type: none"> FRA-0133 and FRA-0143 (Panel C-11) Pressure breakdown across PCP seal stages 	<p>Operator verifies flow on FRA-0133 (blue pen) is >0 gpm (normal value is ~1 gpm).</p> <p>Operator verifies proper pressure breakdown across P-50A seal on PR-0130A by observing the following:</p> <p>___ Middle seal (blue pen) pressure ~1400 psig.</p> <p>___ Upper seal (green pen) pressure ~750 psig.</p> <p>___ Vapor seal (red pen) pressure ~100 psig.</p>	S U
Comment:			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
7.1.2.k	<p>MAINTAIN PCS pressure within the limits of Emergency Operating Procedure EOP Supplement 1, "Pressure and Temperature Limit Curves," AND above the "Minimum Pressure for PCP Operation" curve.</p>	<p>Operator reviews EOP Supplement 1 page 1 and verifies PCS pressure is within the operating region of the curve.</p>	S U
Comment:			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
7.1.2.l	<p>IF PI-0104 "NARROW RANGE" is used, THEN...</p>	<p>Operator determines this step is not applicable because PI-0104 is selected to "WIDE RANGE" for the current plant conditions.</p>	S U
Comment:			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
7.1.2.m	IF PCS T _C indications are less than 200°F AND VCT pressure is less than 50 psig, THEN...	Operator determines this step is not applicable because the plant is in MODE 3.	S U
Comment:			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
7.1.2.n	IF limits of Step 7.1.2.k are exceeded at any time except during PCP air sweeps or as allowed by Step 7.1.2.l and Step 7.1.2.m, THEN...	Operator determines this step is not applicable because PCP air sweeps are not in progress and steps 7.1.2.l and 7.1.2.m are not applicable.	S U
Comment:			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
7.1.2.o	WHEN starting P-50A, P-50B, or P-50C, THEN VERIFY the vibration indicator for the Primary Coolant Pump to be started indicates less than 2 mils.	Operator verifies P-50A vibration less than 2 mils by reading value on VIA-131A.	S U
Comment:			

Proc. Step	TASK ELEMENT 11	STANDARD	Grade						
7.1.2.p	START the AC (preferred) or DC Oil Lift Pump for the PCP(s) to be started: <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;"><u>PCP</u></td> <td style="text-align: center; border-bottom: 1px solid black;"><u>AC Oil Lift Pump</u></td> <td style="text-align: center; border-bottom: 1px solid black;"><u>DC Oil Lift Pump</u></td> </tr> <tr> <td style="text-align: center;">P-50A</td> <td style="text-align: center;">P-80A</td> <td style="text-align: center;">P-81A</td> </tr> </table>	<u>PCP</u>	<u>AC Oil Lift Pump</u>	<u>DC Oil Lift Pump</u>	P-50A	P-80A	P-81A	Operator starts P-80A or P-81A by placing hand switch to the "HAND" position and observes red light energized for pump.	S U
<u>PCP</u>	<u>AC Oil Lift Pump</u>	<u>DC Oil Lift Pump</u>							
P-50A	P-80A	P-81A							
Comment: Evaluator Note: The lift oil pressure interlock will <u>not</u> be met after starting one lift pump. CRITICAL STEP									

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
7.1.2.q	IF lift oil pressure interlock is NOT satisfied with one lift pump operating, THEN START the second Lift Oil Pump for the PCP to be started.	Operator notes that the white light that indicates the lift oil pressure interlock is met, does <u>not</u> illuminate and starts P-81A or P-80A (whichever pump was not started in previous step) and observes the white light for lift pump interlock illuminate.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
7.1.2.r	IF lift oil pressure interlock is NOT satisfied with both Lift Pumps in operation, THEN...	Operator determines this step is not applicable because lift oil pressure interlock is met.	S U
Comment:			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
7.1.2.s	CHECK Annunciator EK-0937 "PRI COOLANT PUMP P-50A BACKSTOP OIL LOW FLOW" NOT in alarm (Panel C-12).	Operator resets or verifies that EK-0937 is not in alarm, i.e., not lit.	S U
Comment:			

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
7.1.2.t	VERIFY the PUMP START OIL PERMISSIVE white light illuminated for P-50A.	Operator verifies white light is illuminated above P-50A hand switch.	S U
Comment:			

Proc. Step	TASK ELEMENT 16	STANDARD	Grade
7.1.2.u	WHEN oil lift pump(s) have been operating for at least two minutes, THEN START the selected Primary Coolant Pump.	Operator verifies that at least two minutes have elapsed since the start of the second lift oil pump, then takes the hand switch for P-50A to "CLOSE". Operator then verifies pump has started by observing the following: <input type="checkbox"/> Red light illuminates for P-50A breaker <input type="checkbox"/> Green light extinguishes for P-50A breaker <input type="checkbox"/> Amps rise on P-50A ammeter	S U
Comment: CUE: Two minutes have elapsed. CRITICAL STEP			

Proc. Step	TASK ELEMENT 17	STANDARD	Grade
7.1.2.v	WHEN the following have occurred: <ul style="list-style-type: none"> Primary Coolant Pump amps have returned to normal PCS conditions are controlled A minimum of five minutes has elapsed THEN, if desired, START the other selected Primary Coolant Pump.	Operator determines this step is not applicable due to all four PCPs are in service.	S U
Comment: Evaluator Note: EK-0955 may alarm, role play as CRS and inform the candidate that it is expected for the PCS conditions and the second NCO will review and perform ARP actions.			

Proc. Step	TASK ELEMENT 18	STANDARD	Grade
7.1.2.w	WHEN both of the following conditions exist: <ul style="list-style-type: none"> PCP amps return to normal operating amps following the starting amp surge Two minutes have elapsed from the start of the PCP. THEN PERFORM the following: <ol style="list-style-type: none"> PLACE the DC Oil Lift Pump hand switch to AUTO. PLACE the AC Oil Lift Pump hand switch to OFF. 	Operator verifies: <input type="checkbox"/> P-50A amps returned to normal. <input type="checkbox"/> At least two minutes have elapsed since start of pump. Operator then: <input type="checkbox"/> Places hand switch for P-81A (DC Pump) to AUTO <input type="checkbox"/> Places hand switch for P-80A (AC Pump) to OFF	S U
Comment:			

Proc. Step	TASK ELEMENT 19	STANDARD	Grade
n/a	Notify the CRS that P-50A has been placed in operation per SOP-1A.	CRS notified	S U
Comment: 			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Primary Coolant Pumps P-50B, 50C and 50D are in service. The plant is in MODE 3 with PCS Temperature approximately 450°F. Proper Shutdown margin has been verified. RPS Breakers 42-1 and 42-2 have been opened.

INITIATING CUES:

The Control Room Supervisor directs you to start PCP P-50A in accordance with SOP-1A, Section 7.1.2, steps g through w. Testing of the oil system is NOT required.

SIMULATOR OPERATOR INSTRUCTIONS

SIMULATOR OPERATOR INSTRUCTIONS:

- Reset to IC-11
- Trip the reactor and stop P-50A
- Cooldown to 450°F using ADVs or TBV
- Take handswitches for P-80A and P-81A to off
- Acknowledge and reset all alarms
- Override P-50A-W to off
- Develop event trigger 1 per the following
 - for event ZLO2P(107).and.ZLO2P(110)
 - for action dor P-50A-W

REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM: SYS D

**TITLE: VENT NON-CONDENSIBLE GASES FROM
THE REACTOR VESSEL HEAD**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Vent Non-Condensable Gases from the Reactor Vessel Head

Alternate Path: Vent path to Quench Tank, PRV-1072, fails to open when required.

Facility JPM #: PL-OPS-EOP-007J

K/A: 007A3.01 Importance: RO: 2.7 SRO: 2.9

K/A Statement: Ability to monitor automatic operation of the PRTS, including:
Components which discharge to the PRT.

Task Standard: Non-condensable gases have been vented from Reactor Vessel
Head to Containment atmosphere.

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: EOP Supplement 26, revision 5

Validation Time: 15 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- EOP Supplement 26, revision 5

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

A large break LOCA has occurred. There are indications of non-condensable gases in the Reactor vessel head. The following Containment instruments are in service:

- One (1) Hydrogen Monitor
- One (1) Hydrogen Recombiner

INITIATING CUES:

You have been directed to vent the non-condensable gases from the Reactor vessel head using the preferred method in accordance with EOP Supplement 26, Section 3.0, Step 1.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Obtains current procedure.	Refers to EOP Supplement 26, Section 3.0.	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
3.1.a	Ensure at least one Hydrogen Monitor in operation.	<i>Provided in Initial Conditions.</i>	S U
Comment:			
EVALUTATOR CUE: If candidate attempts to verify status using SOP-38, provide cue that this has already been performed.			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
3.1.b	Ensure at least one Hydrogen Recombiner in operation.	<i>Provided in Initial Conditions.</i>	S U
Comment:			
EVALUATOR CUE: If candidate attempts to verify status using SOP-5, provide cue that this has already been performed.			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
3.1.c	Open PRV-1072 (Vent Path to Quench Tank) by turning the key switch to RESET and OPEN (preferred method).	<ul style="list-style-type: none"> ___ Obtains Key 110. ___ Places HS-1072 to RESET and then to OPEN. ___ Identifies that PRV-1072 RED light remains OFF and GREEN light remains ON. 	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
n/a	Notifies Control Room Supervisor that preferred method is not available since PRV-1072 will NOT open.	Control Room Supervisor notified that preferred method is not available.	S U
Comment: EVALUATOR CUE: CRS directs: "We need to get the Reactor vessel head vented. What do you suggest"? If candidate then selects alternate method, concur with that decision.			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
3.1.c	Open PRV-1071 by turning the key switch to RESET and OPEN.	<input type="checkbox"/> Obtains Key 109. <input type="checkbox"/> Places HS-1071 to RESET and then to OPEN. <input type="checkbox"/> Verifies that PRV-1071 has opened (RED light is ON and GREEN light is OFF).	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
3.1.d	Vent the Reactor Vessel Head by opening ONE of the following valves for 5-10 minutes:	<input type="checkbox"/> Obtains Key 105. <input type="checkbox"/> Places HS-1067 to RESET and then to OPEN. <input type="checkbox"/> Verifies that PRV-1067 has opened (RED light is ON and GREEN light is OFF).	S U
	<ul style="list-style-type: none"> • PRV-1067 	OR	
	<ul style="list-style-type: none"> • PRV-1068 	<input type="checkbox"/> Obtains Key 106. <input type="checkbox"/> Places HS-1068 to RESET and then to OPEN. <input type="checkbox"/> Verifies that PRV-1068 has opened (RED light is ON and GREEN light is OFF).	
Comment: CRITICAL STEP Note: Use of either valve is acceptable.			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
3.1.d	After 5-10 minutes, secure Reactor Vessel Head venting.	Vents Reactor Vessel Head for 5-10 minutes.	S U
Comment: EVALUATOR CUE: 10 minutes have elapsed.			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
3.1.e	Secures Reactor Vessel Head venting by closing the appropriate valve which was opened:	<input type="checkbox"/> Using Key 105 places HS-1067 to CLOSE. <input type="checkbox"/> Verifies that PRV-1067 has closed (RED light is OFF and GREEN light is ON).	S U
	<ul style="list-style-type: none"> PRV-1067 	OR	
	<ul style="list-style-type: none"> PRV-1068 	<input type="checkbox"/> Using Key 106 places HS-1068 to CLOSE. <input type="checkbox"/> Verifies that PRV-1068 has closed (RED light is OFF and GREEN light is ON).	
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
3.1.e	Ensure closed PRV-1071, Vent Path to Containment Atmosphere.	<input type="checkbox"/> Using Key 109 places HS-1071 to CLOSE. <input type="checkbox"/> Verifies that PRV-1071 has closed (RED light is OFF and GREEN light is ON).	S U
Comment: CRITICAL STEP			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

A large break LOCA has occurred. There are indications of non-condensable gases in the Reactor vessel head. The following Containment monitoring instruments are in service:

- One (1) Hydrogen Monitor
- One (1) Hydrogen Recombiner

INITIATING CUES:

You have been directed to vent the non-condensable gases from the Reactor vessel head using the preferred method in accordance with EOP Supplement 26, Section 3.0, Step 1.

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17
- INSERT MF RC01 (Large Break LOCA)
- Trip all PCPs.
- INSERT OVRD for PRV-1072 handswitch to prevent opening.
(HS-1072-1 OVRD OFF)
- Place 1 Hydrogen Monitor in service.

REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM: SYS E

TITLE: UNLOAD AND SECURE D/G 1-1

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Unload and Shutdown a D/G

Alternate Path: NO

Facility JPM #: PL-OPS-EDG-002J

K/A: 064A4.06 Importance: RO: 3.9 SRO: 3.9

K/A Statement: Ability to manually operate and/or monitor in the control room:
Manual start, loading, and stopping of the ED/G

Task Standard: 1-1 D/G properly unloaded and secured.

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: SOP-22, revision 43

Validation Time: 13 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-22, revision 43

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- The plant is at full power.
- 1C Bus is connected to Safeguards Transformer 1-1.
- D/G 1-1 has been manually placed in-service at full load in accordance with SOP-22.

INITIATING CUES:

- You have been directed by the Control Room Supervisor to unload and secure 1-1 D/G by performing SOP-22 section 7.5.6.
- All attachment 6 data will be taken for unloading and stopping the D/G by a separate operator.

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Operator locates copy of SOP-22 section 7.5.6.	Copy of SOP-22 section 7.5.6 is located.	S U
Comment:			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
7.5.6.a	REFER TO Section 5.0, "Precautions and Limitations" prior to unloading and stopping a D/G.	Operator reviews section 5.0, precautions and limitations prior to unloading and stopping D/G.	S U
Comment:			

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
7.5.6.b	WHEN unloading and stopping a D/G, THEN ENTER D/G information on Attachment 6, "Diesel Generator Log Sheet."	<i>Provided in initial conditions.</i>	S U
Comment: Evaluator or Simulator Operator Cue: If candidate asks about taking information (data), role play as CRS and inform them that data will be taken for unloading and stopping by another operator.			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
7.5.6.c	UNLOAD the affected D/G to approximately 50 kW by operating the Governor Set Point switch: D/G 1-1 165-D1/CS, Governor Set Point	Load on D/G 1-1 is lowered to approximately 50 kW as read on EWI-1107.	S U
Comment: CRITICAL STEP			

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
7.5.6.d	OPEN the D/G output breaker: <u>D/G 1-1</u> 152-107, D/G 1-1 to Bus 1C.	152-107, D/G 1-1 output breaker is open by verifying: ___ Green light on ___ Red light off	S U
Comment: CRITICAL STEP			

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
7.5.6.e	IF voltage regulator settings were changed, THEN PERFORM voltage regulator adjustment as follows	Operator determines that this step applies.	S U
Comment: Evaluator cue: If asked, provide information that voltage regulator settings were changed.			

Proc.Step	TASK ELEMENT 7	STANDARD	Grade
7.5.6.e.1	ENSURE Voltage Regulator switch to AUTO. <u>D/G 1-1</u> 190-D1/CS, Voltage Regulator	Voltage regulator switch is in AUTO.	S U
Comment:			

Proc.Step	TASK ELEMENT 8	STANDARD	Grade
7.5.6.e.2	Using Field Rheostat switch, CHECK AND ADJUST, if necessary, generator voltage to between 2390V and 2410V as indicated on D/G volt meter (C-04). <u>D/G 1-1</u> G1-1/VSR, Field Rheostat EVI-1107, D/G Volt Meter	D/G 1-1 Output voltage between 2390 and 2410 volts as read on EVI-1107, D/G 1-1 voltage meter.	S U
Comment:			

Proc.Step	TASK ELEMENT 9	STANDARD	Grade
7.5.6.e.3	PLACE Voltage Regulator switch to MANUAL.	Voltage regulator switch is in manual.	S U
Comment: CRITICAL STEP			

Proc.Step	TASK ELEMENT 10	STANDARD	Grade
7.5.6.e.4	Using Field Rheostat switch, CHECK AND ADJUST, if necessary, generator voltage to between 2390V and 2410V as indicated on D/G volt meter (C-04).	D/G 1-1 voltage is between 2390 and 2410 volts as read on EVI-1107, D/G 1-1 voltage meter.	S U
Comment: CRITICAL STEP			

Proc.Step	TASK ELEMENT 11	STANDARD	Grade
7.5.6.e.5	PLACE Voltage Regulator switch to AUTO.	Voltage regulator switch is in AUTO.	S U
Comment: CRITICAL STEP			

Proc.Step	TASK ELEMENT 12	STANDARD	Grade
7.5.6.f	ENSURE the Parallel/Unit Selector switch for the affected D/G in UNIT position: <u>D/G 1-1</u> G1-1/DSR, Parallel Unit Selector	<input type="checkbox"/> Red UNIT light ON <input type="checkbox"/> Parallel/Unit Selector switch for D/G 1-1 is in UNIT.	S U
Comment: CRITICAL STEP			

Proc.Step	TASK ELEMENT 13	STANDARD	Grade
7.5.6.g	ENSURE Generator Frequency is between 59.56 and 60.44 Hz. <u>D/G 1-1</u> SPI-1107, Frequency Indicator	D/G 1-1 frequency is between 59.56 and 60.44 Hz as read on SPI-1107, D/G 1-1 frequency meter.	S U
Comment:			

Proc.Step	TASK ELEMENT 14	STANDARD	Grade
7.5.6.h	PLACE Engine Control switch to STOP. <u>D/G 1-1</u> G1-1/CS, Engine Control	___ Engine control switch is in STOP ___ Red "RUNNING" light extinguishes	S U
Comment: CRITICAL STEP			

Proc.Step	TASK ELEMENT 15	STANDARD	Grade
7.5.6.i.1	WHEN engine has stopped, THEN: CHECK local Engine Control switch in NORM position: <u>D/G 1-1</u> HS-G1-1/SSS, D/G 1-1 Engine Control	Operator directs AO to verify local Engine Control Switch is in the NORM position.	S U
Comment: Evaluator or Simulator Operator Cue: When asked as Auxiliary Operator, report that the local engine control switch is in the NORM position.			

Proc.Step	TASK ELEMENT 16	STANDARD	Grade
7.5.6.i.2	CHECK remote Engine Control switch in NORM position: <u>D/G 1-1</u> HS-G1-1/CS, D/G 1-1 Engine Control	Operator verifies that Engine Control switch on C-04 is in the mid position.	S U
Comment:			

Proc.Step	TASK ELEMENT 17	STANDARD	Grade
7.5.6.i.3	RESET voltage check relay targets by depressing target reset: <u>1-1 D/G (EC-22)</u> 127D-11 127D-12 127D-13	Operator directs AO to reset relay targets: 127D-11 127D-12 127D-13	S U
Comment: Evaluator or Simulator Operator Cue: When asked, report as Auxiliary Operator that relays have been reset.			

Proc.Step	TASK ELEMENT 18	STANDARD	Grade
7.5.6.i.4	ENSURE Voltage Regulator on C-04 is in AUTO position. <u>D/G 1-1</u> 190-D1/CS, Voltage Regulator	Voltage regulator switch is in AUTO.	S U
Comment:			

Proc.Step	TASK ELEMENT 19	STANDARD	Grade
7.5.6.i.5	ENSURE Diesel Generator Load Sequencer is reset.	Operator checks alarm EK-1121, "Sequencer Control Energized," and determines that Diesel Generator Load Sequencer does not need to be reset. AND/OR Operator resets sequencer by placing Sequencer Control Reset key switches to RESET position (Left AND Right Channels) on panel C-13 per EK-1121 (ARP-7).	S U
Comment:			

Proc.Step	TASK ELEMENT 20	STANDARD	Grade
n/a	Operator notifies CRS that D/G 1-1 has been unloaded and stopped	CRS Notified	S U
Comment:			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- The plant is at full power.
- Bus 1C is being powered from D/G 1-1 and is paralleled to the grid via Safeguards Transformer
- D/G 1-1 has been manually placed in-service at full load in accordance with SOP-22.

INITIATING CUES:

- You have been directed by the Control Room Supervisor to unload and secure 1-1 D/G by performing SOP-22 section 7.5.6.
- All attachment 6 data will be taken for unloading and stopping the D/G by a separate operator.

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17
- Manually start and load D/G 1-1 to 2300-2500 kW
- Clear Diesel Generator 1-1 trouble alarm.

REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM: SYS F

**TITLE: PLACE A CONTAINMENT RADIATION
MONITOR IN SERVICE**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Operate the Area Radiation Monitoring System

Alternate Path: Operate light fails to illuminate when tested

Facility JPM #: New

K/A: 072A4.01 Importance: RO: 3.0 SRO: 3.3

K/A Statement: Ability to manually operator and/or monitor in the Control Room: Alarm and setpoint checks and adjustments.

Task Standard: Candidate recognizes that the radiation monitor "operate" light will not illuminate and refers to attachment 2 to troubleshoot the monitor. Implementation of attachment 2 will restore the "operate" light.

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: SOP-39, revision 12

Validation Time: 11 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

SOP-39, revision 12

Marked up copy of CL 39 for placing RIA-1805 in service with one step applicable (RIA-1805 Operate Switch)

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- Plant is operating at 100% power.
- I&C Department have just completed maintenance on Containment Radiation Monitor RIA-1805.

INITIATING CUES:

- The Control Room Supervisor directs you to place Containment Radiation Monitor, RIA-1805, in service per SOP-39, step 7.4.2.
- Another operator will answer any front panel alarms.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Operator locates SOP-39, section 7.4.2	SOP-39, section 7.4.2 is located	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.4.2.a	REFER TO Attachment 3, Checklist CL 39, "Area Monitors System Checklist."	Receives applicable portion of CL 39.	S U
Comment:			
Evaluator Cue: Provide candidate with a marked up copy of CL 39 for restoring RIA-1805 to service, all steps are N/A'd except for verifying RIA-1805 selector switch in ALL or OPERATE.			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
CL 39	Verify RIA-1805 selector switch in ALL or OPERATE	RIA-1805 selector switch is in OPERATE	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.4.2.b	CHECK operate light illuminated.	Operator recognizes that the OPERATE light is not illuminated.	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
7.4.2.c	IF operate light NOT illuminated, THEN REFER TO Attachment 2, "System Malfunctions and Troubleshooting."	Operator refers to attachment 2, section 4.1 for Containment Radiation Monitors Operate light not illuminated.	S U
Comment:			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
4.1.a	PRESS AND HOLD operate light.	Operate light pressed and held	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
4.1.b	CHECK other three monitors not tripped.	Operator verifies orange and red (Trip 1 and Trip 2) lights not illuminated for RIA-1806, 1807 and 1808.	S U
Comment:			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
4.1.c	PLACE Selector Switch momentarily to CHECK position AND RELEASE.	RIA-1805 selector switch placed in CHECK position and released.	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
4.1.d	RELEASE operate light.	Operate light is released	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
4.1.e	RESET all alarms.	Operator resets: _____ AMBER Trip 1 _____ RED Trip 2 by depressing indicating light.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
4.1.f	IF operate light still not illuminated, THEN DECLARE the associated monitor inoperable AND REFER TO 4.2 below.	Operator determines this step is not applicable because Operate light is illuminated.	S U
Comment:			

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
7.4.2.d	RESET all alarms.	Operator verifies all alarms reset.	S U
Comment:			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
7.4.2.e	IF operate light still NOT illuminated, THEN DECLARE the associated monitor inoperable. Refer to Attachment 2, "System Malfunctions and Troubleshooting.	Operator determines this step is not applicable because Operate light is illuminated.	S U
Comment:			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
n/a	Operator informs Control Room Supervisor that Containment Radiation Monitor RIA-1805 has been placed in service.	CRS Notified	S U
Comment:			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- Plant is operating at 100% power.
- I&C Department have just completed maintenance on Containment Radiation Monitor RIA-1805.

INITIATING CUES:

- The Control Room Supervisor directs you to place Containment Radiation Monitor, RIA-1805, in service per SOP-39, step 7.4.2.
- Another operator will answer any front panel alarms.

SIMULATOR OPERATOR INSTRUCTIONS

- Insert OR RIA-1805-G to off on panel C-11A rear
- Need SOP-39, CL 39, with 1 step applicable.
- Insert Event Trigger per:

for Event .not.ZDI4P(341).and.ZDI4P(339)
for Action dor RIA-1805-G

REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM: SYS G

**TITLE: RESPOND TO A LOSS OF REFUELING
WATER ACCIDENT**

CANDIDATE: _____

EXAMINER: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- ONP-23.3, revision 6

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- The plant is in MODE 6 during a Refueling Outage
- Fuel moves were in progress from Reactor to SFP.
- The Rx cavity seal has partially failed and a significant amount of water has leaked out of the cavity into the containment sump.
- Both trains of SDC are available.
- One train of SDC is in service using P-67B LPSI Pump.
- LPSI Pump P-67A has a flow path available from the Containment Sump.
- SFP Tilt Pit gate is removed.
- Containment has flooded above 591'.
- PCS Boron is 2800 ppm.
- Required shutdown boron concentration is 2650 ppm.

INITIATING CUES:

- You have been directed by the Control Room Supervisor to perform ONP-23.3 steps 4.12.1 through 4.12.7 to lineup to transfer water from the Containment Sump back to the Reactor Cavity without taking the in service Shutdown Cooling train out of service.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Located ONP-23.3 section 4.12	Operator locates ONP-23.3 section 4.12	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
4.12.1	Ensure Containment flooded above 590' 4" El.	<i>Stated in task initial conditions</i>	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
4.12.2	Verify available shutdown cooling train(s) have a flow path from the Containment Sump.	<i>Stated in task initial conditions</i>	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
4.12.3.a	Ensure LPSI pump for train to be aligned to Containment Sump is stopped.	Operator verifies P-67A is stopped	S U
Comment:			
Evaluator Cue: If asked as Shift Manager, we do not want to secure the inservice SDC train for using both LPSI pumps. (info also provided in Initiating Cue)			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
4.12.3.b	CLOSE LPSI pump suction valve from shutdown cooling for train being aligned to Containment Sump: P-67A MO-3199 (Key #113)	Operator: ___ Obtains Key #113 ___ Places MO-3199 key switch to CLOSE ___ Verifies green light ON and red light OFF	S U
Comment: This valve requires ~2 minutes closing time.			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
4.12.3.c	Ensure CLOSED SIRW outlet valve for train being aligned to Containment Sump: P-67A CV-3057 (Key #150)	Operator verifies green light ON and red light OFF for CV-3057.	S U
Comment:			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
4.12.3.d	OPEN LPSI pump suction valve from SIRW/Containment Sump for train being aligned to Containment Sump: P-67A MO-3198 (Key #114)	Operator: ___ Obtains Key #114 ___ Places MO-3198 key switch to OPEN ___ Verifies red light ON and green light OFF	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
4.12.3.e	OPEN Containment Sump valve for train being aligned to Containment Sump: P-67A CV-3029 (Key #148)	Operator: ___ Obtains Key #148 ___ Places CV-3029 key switch to OPEN ___ Verifies red light ON and green light OFF	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
4.12.3.f	CLOSE discharge valve for LPSI pump being aligned to Containment Sump P-67A MV-ES3202	Operator ensures MV-ES3202 is closed.	S U
Comment: Simulator Operator: Close MV-ES3202 by: <ul style="list-style-type: none"> • Create event trigger • Set Event = 0 • Action: set sika3202=0.0 • Activate trigger Evaluator or Simulator Operator Cue: If called, inform candidate that MV-ES3202 is closed. (adjust sika3202 to 0.000) CRITICAL STEP			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
4.12.3.g	OPEN mini-flow isolation valve for LPSI pump being aligned to Containment Sump P-67A MV-ES3203	MV-ES3203 is open.	S U
Comment: Evaluator or Simulator Operator cue: If called as Auxiliary Operator, notify candidate that MV-ES-3203 is open. Simulator Operator: Open MV-ES-3203 by inserting a value of 100 for remote SI34 on PID SI01. CRITICAL STEP			

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
4.12.3.h	Ensure OPEN the following valves: <ul style="list-style-type: none"> MV-ES104 Flow Measurement FE-0404 Outlet Iso (Middle level CCW) MV-ES106 Flow Measurement FE-0404 Inlet Iso (Middle level CCW) CV-3027 SIRW Tank T-58 Recirculation CV-3056 SIRW Tank T-58 Recirculation Shutoff 	Operator ensures: <ul style="list-style-type: none"> ___ MV-ES104 and ES106 open. ___ CV-3027 and 3056 open 	S U
Comment: Evaluator or Simulator Operator cue: If called as Auxiliary Operator, inform candidate that MV-ES104 and ES106 are open.			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
4.12.4	Start LPSI pump aligned to Containment Sump	Operator: <ul style="list-style-type: none"> ___ Starts P-67A ___ Verifies red light on, green light off ___ FI-0404 indicates recirc flow. ___ Signs procedure for starting pump 	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
4.12.5	IF aligning a second train to the Containment Sump, THEN....	Operator determines this step to be not applicable as stated in initiating cue.	S U
Comment:			

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
4.12.6	OBTAIN a sample from SX-3215, Recirculation to SIRW Tank (located next to CV-3027, SIRW Tank Recirc and southwest of P-8C AFW Pump) as follows:	Operator directs Auxiliary Operator to perform section 4.12.6 steps a → i to obtain sample.	S U
<p>Comment:</p> <p>Evaluator or Simulator Operator Cue: If called to obtain sample, inform candidate that sample has been obtained, all valves have been returned to original position and sample bottle was delivered to Chemistry for analysis.</p> <p>Evaluator Cue: Role play as chemistry and notify candidate that boron sample has been analyzed and is 2700 ppm Boron.</p>			

Proc. Step	TASK ELEMENT 16	STANDARD	Grade
4.12.7	WHEN required boron concentration has been verified, THEN perform the following:	Operator determines that this step can be completed because boron concentration of the sample matches refueling boron concentration.	S U
<p>Comment:</p> <p>Evaluator Cue: It may be necessary to role play as CRS if candidate requests permission to proceed with this step based on sample boron concentration. If role play is necessary, notify candidate that sample boron concentration is acceptable for transfer.</p>			

Proc. Step	TASK ELEMENT 17	STANDARD	Grade
4.12.7.a	Stop all LPSI pumps aligned to the Containment Sump.	Operator: ___ Secures P-67A ___ Verifies green light ON and red light OFF	S U
<p>Comment:</p> <p>CRITICAL STEP</p>			

Proc. Step	TASK ELEMENT 18	STANDARD	Grade
4.12.7.b	Ensure CLOSED the following: <ul style="list-style-type: none"> • MV-ES3203 Low Press SI Pump P-67A Miniflow • MV-ES3194 Low Press SI Pump P-67B Miniflow • CV-3027 SIRW Tank T-58 Recirculation • CV-3056 SIRW Tank T-58 Recirculation Shutoff 	Operator <ul style="list-style-type: none"> ___ Closes MV-ES3203 ___ Ensures MV-ES3194 closed. (not required since that train is not aligned) ___ Closes CV-3027 ___ Closes CV-3056 	S U
<p>Comment:</p> <p>Evaluator Note: When operator closes CV-3027 and CV-3056, end the JPM.</p> <p>Evaluator or Simulator Operator Cue: If called as Auxiliary Operator to ensure MV-ES-3203 and ES-3194 are closed, inform candidate that they are closed.</p> <p>Simulator Operator: Close MV-ES-3203 by inserting a value of 0 for remote SI34 on PID SI01</p> <p>CRITICAL STEP</p>			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- The plant is in MODE 6 during a Refueling Outage
- Fuel moves were in progress from Reactor to SFP.
- The Rx cavity seal has partially failed and a significant amount of water has leaked out of the cavity into the containment sump.
- Both trains of SDC are available.
- One train of SDC is in service using P-67B LPSI Pump.
- LPSI Pump P-67A has a flow path available from the Containment Sump.
- SFP Tilt Pit gate is removed.
- Containment has flooded above 591'.
- PCS Boron is 2800 ppm.
- Required shutdown boron concentration is 2650 ppm.

INITIATING CUES:

- You have been directed by the Control Room Supervisor to perform ONP-23.3 steps 4.12.1 through 4.12.7 to lineup to transfer water from the Containment Sump back to the Reactor Cavity without taking the in service Shutdown Cooling train out of service.

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-20
- Insert MF RC01 Hot Leg Rupture and run until Containment Sump Level reaches 591' 0"
- Ensure TR-0351 is ON and recording.
- Delete RC01 and let Simulator run for 12 minutes.
- Use SI34 on PID SI01 to operate MV-ES3203, P-67A mini-flow isolation.
- For operating MV-ES3202, LPSI Pump discharge, create the following event triggers:

To close valve:

Event: 0

Action: set sika3202=0.0

To open valve:

Event: 0

Action: set sika3202=180.0