2010 PALISADES NUCLEAR PLANT

INITIAL EXAMINATION

PROPOSED EXAM FILES

PROPOSED CONTROL ROOM JPMs

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO SYS A

TITLE: EMERGENCY BORATE (WITHOUT BUS 1D)

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Initiate Emergency Boration In Accordance with SOP-2A

Alternate Path: NO

Facility JPM #: PL-OPS-CVC-013J

K/A: 004A4.18 Importance: RO: 4.3 SRO: 4.1

K/A Statement: Ability to manually operate and/or monitor in the control room: Emergency borate valve

Task Standard: All critical steps for Emergency Boration via Gravity Feed per SOP-2A, Attachment 14 have been completed within 15 minutes.

Preferred Evaluation Location: Simulator __X__ In Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: EOP-1.0, "Standard Post-Trip Actions"
SOP-2A, "Chemical and Volume Control System"

Validation Time: 5 minutes Time Critical: YES (15 minutes)

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

SOP-2A, "Chemical and Volume Control System," Attachment 14, "Emergency Manual Boration"

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 Reactor has tripped and four full length Control Rods are <u>not</u> fully inserted.
- Bus 1D has a fault and is de-energized.
- Bus 1C is energized.

INITIATING CUES:

- The Control Room Supervisor directs you to commence Emergency Boration per EOP-1.0, Immediate Action step 1.c.1.
- This JPM is time critical. (Time limit will not be provided.)
- Time will start upon the completion of communication for the Initiating Cue.

This JPM is Time Critical.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Obtains correct procedure	SOP-2A, Attachment 14 is located	S U
Comment:			
EVALUATOR NOTE: Emergency Boration is available by gravity feed only			
EVALUATOR CUE: Provide candidate a working copy of SOP-2A, Attachment 14			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
Att. 14, 1.0	Ensure charging flow greater than 33 gpm	Charging flow is verified greater than 33 gpm	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
Att. 14, 2.0a	If Bus 1D is energized…	Determines that this step is not applicable	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
Att. 14, 2.0b.1	If Bus 1C is energized, then , THEN ESTABLISH Gravity Feed • OPEN MO-2169 and MO-2170, Boric Acid Tank Gravity Feed Isolation Valves.	PLACES handswitch for MO-2169 to open, (red light on, green light off)	S U
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
Att. 14, 2.0b.1	If Bus 1C is energized, then , THEN ESTABLISH Gravity Feed ▪ OPEN MO-2169 and MO-2170, Boric Acid Tank Gravity Feed Isolation Valves.	PLACES handswitch for MO-2170 to open, (red light on, green light off)	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
Att. 14, 2.0b.2	CLOSE CV-2155, Boric Acid Blender Outlet Control Valve	CV-2155 verified CLOSED (red light off, green light on.)	**S U**
Comment:			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
Att. 14, 2.0b.3	CLOSE MO-2087, VCT Outlet Isolation Valve	PLACES handswitch for MO-2087 to CLOSE, (red light off, green light on).	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
Att. 14, 2.0b.4	Close MO-2160, SIRW Tank to Charging Pumps Isolation	MO-2160 is verified CLOSED	**S U**

Comment:

Evaluator Note: ***Operator should note that:***

- ***There is no position indication in the control room for MO-2160 due to bus 1D being de-energized.***
- ***MO-2160 can not be operated from the Control Room due to bus 1D being de-energized.***

  MO-2160 is normally closed

EVALUATOR CUE: If asked as AO to report MO-2160 position, report that MO-2160 is closed.

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
Att. 14, 2.0b.5	If Y01 is not energized, THEN PERFORM the following:	Determines that this step is not applicable	**S U**

Comment:

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
Att. 14, 2.0b.6	VERIFY charging flow greater than 33 gpm as indicated by FIA-0212, Charging Line Flow Indicator Alarm	VERIFIES charging flow greater than 33 gpm on FIA-0212	**S U**

Comment:

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
n/a	Notify the Control Room Supervisor that emergency boration is in progress	CRS notified	S U
Comment: ***EVALUATOR CUE: As CRS, repeat back this notification***			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Use any at power IC.
- Insert malfunctions per the following table or use CAE file:

MALFUNCTION No.	MALFUNCTION TITLE	ET	DELAY	LOCATION	RAMP	VALUE
RD16	Control rod stuck (select any 4 full length control rods)			PIDRD02		5 (stuck)
ED04B	Loss of Bus 1D			PIDED06		True

- Trip the Reactor
- Carry out EOP-1.0 Immediate Actions.

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- The Reactor has tripped and four full length Control Rods are not fully inserted.
- Bus 1D has a fault and is de-energized.
- Bus 1C is energized.

INITIATING CUES:

- The Control Room Supervisor directs you to commence Emergency Boration per EOP-1.0, Immediate Action step 1.c.1.
- This JPM is time critical. (Time limit will not be provided.)
- Time will start upon the completion of communication for the Initiating Cue.

This JPM is Time Critical.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS B

TITLE: SHIFT OPERATING CCW PUMPS

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Shift Operating Component Cooling Water Pumps

Alternate Path: YES - CCW pump will trip when started. Third CCW pump must be manually started to maintain CCW.

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

K/A: 008A2.01 Importance: RO: 3.3 SRO: 3.6

K/A Statement: Ability to predict impacts of loss of CCW pump and correct, control, or mitigate the consequences.

Task Standard: P-52A or P-52B running.

Preferred Evaluation Location: Simulator ___X___ In Plant _____

Preferred Evaluation Method: Perform ___X__ Simulate _____

References: ONP-6.2, "Loss of Component Cooling"
SOP-16, "Component Cooling Water System"

Validation Time: __15___ minutes Time Critical: NO

Candidate: ----------

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

SOP-16, "Component Cooling Water System"

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

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

- The Plant is at full power.
- Both CCW Heat Exchangers are in operation.
- CCW Pump P-52A is in service
- CCW Pumps P-52B and P-52C are in STANDBY.

INITIATING CUES:

The Control Room Supervisor directs you to shift operating CCW pumps per SOP-16, Section 7.3.6.

- P-52C is to be started and P-52A and P-52B are to be left in STANDBY.

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
--	Obtains correct procedure.	Locates and refers to SOP-16, Section 7.3.6.	S U
Comment:			
EVALUATOR CUE: Provide candidate a working copy of SOP-16, section 7.3.6.			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
7.3.6.a	Ensure LOCKED OPEN CCW pump P-52C suction and discharge valves.	Contacts AO to ensure MV-CC921 and MV-CC945 locked OPEN.	S U
Comment:			
EVALUATOR CUE: AO reports MV-CC921 and MV-CC945 locked OPEN.			

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
7.3.6.b	Operate P-52C pump casing vent petcock to vent air from pump casing.	Contacts AO to cycle MV-CC558 open and closed. CUE: AO reports MV-CC558 cycled open and closed.	S U
Comment:			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
7.3.6.c	Verify both CCW Heat Exchangers in operation.	Both CCW Heat Exchangers in operation.	S U
Comment:			
NOTE: This info previously provided in Initial Conditions.			
EVALUATOR CUE: If candidate asks for initial CCW Heat Exchanger ΔP give the following: **E-54A ΔP is 6.6 psid.** **E-54B ΔP is 6.8 psid.**			

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
7.3.6.d	IF the pump being started is in standby, THEN REMOVE the pump from standby by placing Control Switch to TRIP.	P-52C Handswitch taken to TRIP and amber STBY light extinguishes.	S U
Comment:			

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
7.3.6.e	START selected CCW Pump.	P-52C CCW pump running. RED light above handswitch ON, GREEN light OFF.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 7	STANDARD	Grade
7.3.6.f	IF handswitch on breaker was used, THEN PLACE Control Room handswitch to "after close" to enable pump trip alarm scheme.	Operator determines this step to be N/A since pump was started from Control Room.	S U
Comment:			

Proc.Step	TASK ELEMENT 8	STANDARD	Grade
7.3.6.g	STOP selected CCW Pump.	P-52A has been stopped using handswitch. RED light OFF, GREEN light ON.	S U
Comment: ***EVALUATOR NOTE: P-52C will trip 5 seconds after P-52A is secured. P-52B will not auto start on low pressure.*** **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 9	STANDARD	Grade
---	Refers to ARP-7, window 67 and notifies CRS of P-52C trip and the need to reference ONP-6.2.	CRS notified.	S U

Comment:

EVALUATOR CUE: ***If asked about any required actions for P-52A, role play and ask candidate what should be done. Candidate should state that ONP-6.2 should be entered and P-52A or P-52B should be manually started; agree and direct P-52A or P-52B started.***

EXAMINER NOTE: ***Actual ONP entry is NOT required; CRS is directing use of ONP-6.2, 4.1.a step to start desired CCW pump.***

Proc.Step	TASK ELEMENT 10	STANDARD	Grade
ONP-6.2 4.1.a	IF less than 10 minutes has elapsed since loss of CCW, then start available CCW pumps as appropriate (based on suction supply).	___ *Checks CCW Surge Tank level to ensure adequate inventory. ___ Starts P-52A (or P-52B). ___ *Verifies RED Light ON, GREEN light OFF.	S U

Comment:

*** = Not part of Critical Step**

CRITICAL STEP

Proc.Step	TASK ELEMENT 11	STANDARD	Grade
7.3.6.h,i	PRESS amber STANDBY button for pump to be placed in STANDBY. CHECK amber STANDBY button light ON.	Candidate determines this step is N/A from initial conditions.	S U

Comment:

Proc.Step	TASK ELEMENT 12	STANDARD	Grade
7.3.6.j	If required, adjust CCW Heat Exchanger ΔP OR CCW Pump discharge pressure. ___ Requests AO report on new CCW Hx ΔP values.	Ensures CCW Heat Exchanger ΔP values are acceptable.	S U
Comment: ***EVALUATOR CUE: When requested, as AO report:*** ***E-54A Hx ΔP = 6.8 psid*** ***E-54B Hx ΔP = 6.5 psid***			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17
- Secure any running CCW pumps so that ONLY P-52A is running.
- Ensure CCW Pump P-52B and P-52C in STANDBY
- INSERT MF CC02C for CCW Pump P-52C with a 5 second time delay, assign to Trigger 1.
- Insert Event Trigger 1 ZL01P(46) = P-52A GREEN light
- Insert CC13B (P-52B fail to start) to ACTIVE

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- The Plant is at full power.
- Both CCW Heat Exchangers are in operation.
- CCW Pump P-52A is in service
- CCW Pumps P-52B and P-52C are in STANDBY.

INITIATING CUES:

The Control Room Supervisor directs you to shift operating CCW pumps per SOP-16, Section 7.3.6.

- P-52C is to be started and P-52A and P-52B are to be left in STANDBY.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS C

TITLE: OPEN MAIN STEAM ISOLATION VALVES AFTER REACTOR IS CRITICAL

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Open MSIVs

Alternate Path: YES - One MSIV will not open requiring ADV operation to open

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

K/A: 035K6.01 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 S/Gs: MSIVs

Task Standard: Both MSIVs Open, MSIV bypasses closed, ADVs and TBV in AUTO

Preferred Evaluation Location: Simulator _X__ In Plant _____

Preferred Evaluation Method: Perform _X__ Simulate _____

References: SOP-7, "Main Steam System"

Validation Time: __15__ minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

SOP-7, "Main Steam System"

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

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

The reactor is critical with power at the POAH. MSIV Bypass valves, MO-0501 and MO-0510 are open. Vacuum is established on the Main Turbine and the secondary plant is in the process of being started up.

INITIATING CUES:

The Control Room Supervisor directs you to open the MSIVs per SOP-7, starting at step 7.2.2.c.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
---	Obtains correct procedure	Candidate locates SOP-7, section 7.2.2	S U
Comment:			

EVALUATOR CUE: Provide candidate a working copy of SOP-7, section 7.2.2.

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.2.2.c	LATCH MSIV solenoid valves.	Candidate contacts Auxiliary Operator to latch all MSIV solenoids in the turbine building and 'D' bus area.	S U
Comment:			

SIM OPERATOR: ***Use MS36 on P&ID MS02, DO NOT latch 'A' MSIV (MS25) but report that it is complete.***

CRITICAL STEP

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
d	IF MSIVs opened after performance of Step 7.2.2c, THEN GO TO Step 7.2.2q.	Candidate determines that CV-0510, 'A' S/G MSIV, did not open. Proceeds to step 7.2.2.e	S U
Comment:			

EVALUATOR CUE: Role play as CRS and direct candidate to proceed to step 7.2.2.e, if asked.

CRITICAL STEP

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
e	ENSURE CV-0511, Turbine Bypass to Condenser, remains CLOSED by performing the following:	Candidate performs the following: ___ PLACEs PIC-0511, Turbine Bypass Valve Control to MANUAL. ___ Sets PIC-0511, Turbine Bypass Control Valve to CLOSE. ___ Has AO Close MV-CA390, Turbine Bypass CV-0511 A/S Isolation. ___ Has AO OPEN accumulator drain valve to bleed pressure from CV-0511 accumulator, THEN CLOSE the valve.	S U

Comment:

SIM OPERATOR: ***Use MS35 on PIDMS03 to close air supply to CV-0511, then notify as AO that air supply is closed and accumulator is bled down***

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
f	PERFORM the following notifications of impending Steam Dump operation:	Candidate informs CRS to notify Chemistry and to refer to ADMIN 4.00.	S U

Comment:

EVALUATOR CUE: Notify Candidate that the SE will perform this.

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
g	CLOSE three of the four Steam Dump Air Supplies for the MSIV to be opened, listed below:	Candidate directs Auxiliary Operator to close the following valves in the ADV control cabinet: ___ MV-CA779 ___ MV-CA780 ___ MV-CA781 OR MV-CA782	S U

Comment:

EVALUATOR NOTE: LCO 3.7.4.A is applicable. If candidate asks, notify them that the CRS will take care of this.

SIM OPERATOR: ***Use MS18, MS19, MS20 (or MS21) on PID MS01 to close these valves***

CRITICAL STEP

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
h, i	PLACE HIC-0780A, Steam Generator E-50B Steam Dump to MANUAL. OPERATE HIC-0780A toward 100% OPEN position to equalize DP across MSIV.	Candidate: ___ Places HIC-0780A in Manual ___ Operates manual output lever to open ADV until MSIV CV-0510 opens.	S U
Comment: ***EVALUATOR NOTE: If candidate asks, inform them that the required notifications are made.*** ***EVALUATOR NOTE: CV-0510 will latch when HIC-0780A reaches ~25% output.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
j	WHEN MSIV opens, THEN PLACE HIC-0780A to CLOSE position.	Candidate Operates manual output lever to close ADV.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
k	OPEN Steam Dump Air Supplies closed in Step 7.2.2g above.	Candidate has AO open: ___ MV-CA779 ___ MV-CA780 ___ MV-CA781 OR MV-CA782	S U
Comment: **SIM OPERATOR:** ***Use MS18, MS19, MS20 (or MS21) on PID MS01 to open the valves that were closed in Task Element #6.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
l	IF both MSIVs did NOT open, THEN REPEAT Steps 7.2.2g through 7.2.2k for affected MSIV.	Candidate determines this step is N/A because both MSIVs are now open.	S U
Comment:			

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
m, n	CLOSE CV-0511 accumulator drain valve. OPEN MV-CA390, Turbine Bypass CV-0511 A/S Isol.	Candidate has AO: ___ CLOSE CV-0511 accumulator drain valve ___ OPEN MV-CA390, Turbine Bypass CV-0511 A/S Isol.	S U
Comment:			

SIM OPERATOR: ***Use MS35 on PIDMS03 to open air supply to CV-0511.***

CRITICAL STEP

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
o, p	RETURN HIC-0780A to AUTO or the AS FOUND position. RETURN PIC-0511 to AUTO or the AS FOUND position.	Candidate places HIC-0780A and CV-0511 in AUTO by depressing the 'A' button on their controllers and verifying the 'A' button lights.	S U
Comment:			

EVALUATOR NOTE: If asked, inform candidate that PIC-0511 and HIC-0780A should be placed back in AUTO.

CRITICAL STEP

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
q	CLOSE the following valves: • MO-0501, MSIV CV-0501 Bypass (MZ-3) • MO-0510, MSIV CV-0510 Bypass (MZ-2)	Candidate closes MO-0501 and MO-0510 by holding switch in the CLOSE position until associated Green light is ON and Red light is OFF.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
---	Candidate informs the CRS that the MSIVs are open and the MSIV bypasses are closed.	CRS informed.	S U
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- IC-12
- Open MSIV Bypass Valves
- Close MSIVs
- Trip 'B' MFP, start P-8A
- Ensure Reactor Power is < 2% (limit for MSIV Bypass valves open)[insert Group 4 rods to approximately 41"]
- Insert the following triggers:
  Trigger: 1
  Event: ZAO3F(62).gt.0.25 (ADV Controller reaches 25% output)
  Action: irf ms25 latch (opens MSIV)

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The reactor is critical with power at the POAH. MSIV Bypass valves, MO-0501 and MO-0510 are open. Vacuum is established on the Main Turbine and the secondary plant is in the process of being warmed up.

INITIATING CUES:

The Control Room Supervisor directs you to open the MSIVs per SOP-7, starting at step 7.2.2.c.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS D

TITLE: ALTERNATE PRESSURIZER LEVEL CONTROLLERS

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Alternate Pressurizer Level Controllers

Alternate Path: YES – 'A' Pressurizer Level Controller cannot be placed in CASCADE mode requiring restoration of 'B' Pressurizer Level Controller.

Facility JPM #: PL-OPS-PZR-006J

K/A: 011A4.01 Importance: RO: 3.5 SRO: 3.2

K/A Statement: Ability to manually operate and/or monitor in the control room: Charging Pump and flow controls

Task Standard: Candidate recognizes failure of 'A' PZR level controller and shifts back to 'B' PZR level controller per SOP-1A.

Preferred Evaluation Location: Simulator __X__ In Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: SOP-1A, "Primary Coolant System"

Validation Time: 15 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed: SOP-1A, "Primary Coolant System," section 7.2.1.f

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

READ TO CANDIDATE

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INITIAL CONDITIONS:

- It's Friday Day-Shift and per the Plant Daily Schedule, Pressurizer Level Controllers need to be alternated.

INITIATING CUES:

- The Control Room Supervisor directs you to alternate Pressurizer Level Controllers per SOP-1A, section 7.2.1.f., with the selected Pressurizer Level Controller in CASCADE.

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
---	Obtains correct procedure.	Candidate locates SOP-1A, Primary Coolant System.	S U
Comment: ***EVALUATOR CUE: Provide candidate a working copy of SOP-1A section 7.2.1.f.***			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
f.1	If alternating..., then PLACE Charging Pumps Control Select Switches for P-55B Charging Pump (43-1206/SS) and P-55C Charging Pump (43-1105/SS) to MANUAL.	P-55B Control Select Switch to MANUAL. P-55C Control Select Switch to MANUAL.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
f.2	VERIFY controller to be selected in MANUAL.	Verifies LIC-0101A is in MANUAL.	S U
Comment:			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
f.3	Using the manual operating lever, ADJUST the output signal of the controller to be selected to match the output signal of the currently selected controller or to desired output.	Adjusts output signal on LIC-0101A to match output signal on LIC-0101B for bumpless transfer.	S U
Comment: **CRITICAL STEP - only if outputs were not matched**			

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
f.4	PLACE selector switch 1/LRC-0101 to position for controller to be selected.	Places Selector Switch 1/LRC-0101 to Channel 'A'.	S U
CRITICAL STEP			

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
f.5	IF alternating controllers due to a malfunction of the previously selected channel, THEN PLACE the Pressurizer Heater Control Channel Selector Switch...	Operator recognizes that this step does not apply.	S U
Comment:			

EVALUATOR CUE: If asked, state that CASCADE CONTROL IS DESIRED.

NOTES: Operator must place the 'A' Level Controller to AUTO prior to going to CASCADE mode of operation.

SOP-1A , section 7.2.1.f.6 is for placing the controller to AUTO.

SOP-1A, section 7.2.1.f.7 is for placing the controller to CASCADE.

IT is permissible not to use step 7.2.1.f.6 to place the controller to AUTO.

The third substep in 7.2.1.f.7 is to place controller in AUTO.

IF Operator uses step 6 of SOP-1A section 7.2.1.f., go to Task Element 7.

If Operator N/A's step 6 of SOP-1A section 7.2.1.f, go to Task Element 10.

Proc.Step	TASK ELEMENT 7	STANDARD	Grade
f.6.(a)	IF the desired mode of operation is AUTO, THEN PLACE the selected controller in AUTO as follows: (a) VERIFY Charging and Letdown in operation as appropriate.	Charging and Letdown checked as being appropriate (one Charging Pump and one Letdown Orifice in service).	S U
Comment:			

Proc.Step	TASK ELEMENT 8	STANDARD	Grade
f.6.(b)	IF the desired mode of operation is AUTO, THEN PLACE the selected controller in AUTO as follows: (b) Using raise/lower pushbuttons, ADJUST selected controller setpoint (blue pointer) to match indicated Pressurizer level (red pointer).	'A' controller raise/lower pushbuttons adjusted to match controller setpoint (blue pointer) to Pressurizer level setpoint (red pointer). (blue pointer moved to match red pointer).	S U
Comment: **CRITICAL STEP - only if pointers were not matched**			

Proc.Step	TASK ELEMENT 9	STANDARD	Grade
f.6.(c)	IF the desired mode of operation is AUTO, THEN PLACE the selected controller in AUTO as follows: (c) DEPRESS the "A" pushbutton on selected controller.	Depresses the "A" pushbutton on LIC-0101A to place it in AUTO and notes: "A" AUTO light DOES NOT light 'M' MANUAL light stays ON Determines that LIC will not shift to AUTO	S U

Comment:

EVALUATOR CUE: ***If Operator announces that Controller will not go into AUTO, CRS acknowledges.***

EVALUATOR CUE: ***If Operator asks what should be done, ask them what should be done. When Operator responds to "swap back," then direct them to proceed.***

NOTES: Operator can swap back to the 'B' Level Controller two ways.

If Operator places selector switch 1/LRC-0101 to the 'B' position, go to Task Element 13.

If Operator decides to swap back to the 'B' Level Controller using SOP-1A, section 7.2.1.f, go to Task Element 14.

Either way to swap back to 'B' Level Controller is acceptable.

CRITICAL STEP (if Step F.7 is NOT chosen)

Proc.Step	TASK ELEMENT 10	STANDARD	Grade
f.7 (a)	IF the desired mode of operation is CASCADE, THEN PLACE the selected controller in CASCADE as follows: (a) VERIFY expected TAVE signal available from selected TAVE/TREF controller (use TYT-0100, TYT-0200, or TI-0110).	TYT-0200 TAVE signal verified.	S U
Comment:			

Proc.Step	TASK ELEMENT 11	STANDARD	Grade
f.7 (b)	IF the desired mode of operation is CASCADE, THEN PLACE the selected controller in CASCADE as follows: (b) Using raise/lower pushbuttons, SLOWLY ADJUST selected controller setpoint (blue pointer) to the Pressurizer level setpoint determined by present TAVE. Refer to Attachment 10, "TAVE (°F) Pressurizer Level Program."	'A' controller raise/lower pushbuttons adjusted to match controller setpoint (blue pointer) to Pressurizer level setpoint (red pointer). (blue pointer moved to match red pointer)	S U
Comment: **CRITICAL STEP - only if pointers were not matched**			

Proc.Step	TASK ELEMENT 12	STANDARD	Grade
f.7 (c)	IF the desired mode of operation is CASCADE, THEN PLACE the selected controller in CASCADE as follows: (c) DEPRESS the "A" pushbutton on the selected controller.	Depresses the "A" pushbutton on LIC-0101A to place it in AUTO and notes: "A" AUTO light DOES NOT light 'M' MANUAL light stays ON Determines that LIC will not shift to AUTO	S U

Comment:

EVALUATOR CUE: ***If Operator announces that Controller will not go into AUTO, CRS acknowledges.***

EVALUATOR CUE: ***If Operator asks what should be done, ask them what should be done. When Operator responds to "swap back," then direct them to proceed.***

NOTES: Operator can swap back to the 'B' Level Controller two ways.

If Operator places selector switch 1/LRC-0101 to the 'B' position, go to Task Element 13.

If Operator decides to swap back to the 'B' Level Controller using SOP-1A, section 7.2.1.f, go to Task Element 14.

Either way to swap back to 'B' Level Controller is acceptable.

CRITICAL STEP (if Step F.6 is NOT chosen)

Proc.Step	TASK ELEMENT 13	STANDARD	Grade
----	Place selector switch 1/LRC-0101 to position for controller to be selected.	Pressurizer Level Control Selector Switch 1/LRC-0101 placed to the 'B' position.	S U

Comment:

EVALUATOR CUE: ***If CRS notified that 'B' Level Controller is in service, CRS acknowledges.***

NOTES: 'B' Level Controller in service in already in CASCADE mode.

If Operator performed Task Element 13, go to Task Element 26.

CRITICAL STEP

Proc.Step	TASK ELEMENT 14	STANDARD	Grade
f.1	If alternating..., then PLACE Charging Pumps Control Select Switches for P-55B Charging Pump (43-1206/SS) and P-55C Charging Pump (43-1105/SS) to MANUAL.	Recognizes that this step does not apply.	S U

Proc.Step	TASK ELEMENT 15	STANDARD	Grade
f.2	VERIFY controller to be selected in MANUAL.	Depresses "M" pushbutton on LIC-0101B to place in MANUAL and notes: "M" MANUAL light ON "C" CASCADE light OFF	S U
Comment:			

Proc.Step	TASK ELEMENT 16	STANDARD	Grade
f.3	Using the manual lever, ADJUST the output signal of the controller to be selected to match the output signal of the currently selected controller.	Adjusts the slide bar to on the 'B' Pressurizer Level Controller being swapped to, matching its' output signal to the in-service controller's output signal.	S U
Comment: **CRITICAL STEP - only if outputs were not matched**			

Proc.Step	TASK ELEMENT 17	STANDARD	Grade
f.4	PLACE selector switch 1/LRC-0101 to position for controller to be selected.	Pressurizer Level Control Selector Switch 1/LRC-0101 placed to the "B" position.	S U
CRITICAL STEP			

Proc.Step	TASK ELEMENT 18	STANDARD	Grade
f.5	IF alternating controllers due to a malfunction of the previously selected channel, THEN PLACE the Pressurizer Heater Control Channel Selector Switch...	Operator recognizes that this step does not apply. Operator MAY reposition Heater Control Channel Selector Switch to Channel 'B.'	S U
Comment:			

EVALUATOR CUES:

1 ***If asked, state that CASCADE CONTROL IS DESIRED.***

2 ***If asked whether to swap Heater Control Channel Selector Switch, reply that this action is not required for this failure.***

NOTES: Operator must place the 'B' Level Controller to AUTO prior to going to CASCADE mode of operation.

SOP-1A , section 7.2.1.f.6 is for placing the controller to AUTO.

SOP-1A, section 7.2.1.f.7 is for placing the controller to CASCADE.

IT is permissible not to use step 7.2.1.f.6 to place the controller to AUTO.

The third substep in 7.2.1.f.7 is to place controller in AUTO.

IF Operator uses step 6 of SOP-1A section 7.2.1.f., go to Task Element 19.

If Operator N/A's step 6 of SOP-1A section 7.2.1.f, go to Task Element 22.

Proc.Step	TASK ELEMENT 19	STANDARD	Grade
f.6.(a)	IF the desired mode of operation is AUTO, THEN PLACE the selected controller in AUTO as follows: (a) VERIFY Charging and Letdown in operation as appropriate.	Charging and Letdown checked as being appropriate (one Charging Pump and one Letdown Orifice in service).	S U
Comment:			

Proc.Step	TASK ELEMENT 20	STANDARD	Grade
f.6.(b)	IF the desired mode of operation is AUTO, THEN PLACE the selected controller in AUTO as follows: (b) Using raise/lower pushbuttons, ADJUST selected controller setpoint (blue pointer) to match indicated Pressurizer level (red pointer).	'B' controller raise/lower pushbuttons adjusted to match controller setpoint (blue pointer) to Pressurizer level setpoint (red pointer). (blue pointer moved to match red pointer).	S U
Comment: **CRITICAL STEP - only if pointers were not matched**			

Proc.Step	TASK ELEMENT 21	STANDARD	Grade
f.6.(c)	IF the desired mode of operation is AUTO, THEN PLACE the selected controller in AUTO as follows: (c) DEPRESS the "A" pushbutton on selected controller.	Depresses the "A" pushbutton on LIC-0101B to place it in AUTO and notes: "A" AUTO light ON "M" MANUAL light OFF	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 22	STANDARD	Grade
f.7 (a)	IF the desired mode of operation is CASCADE, THEN PLACE the selected controller in CASCADE as follows: (a) VERIFY expected TAVE signal available from selected TAVE/TREF controller (use TYT-0100, TYT-0200, or TI-0110).	TYT-0200 TAVE signal verified.	S U
Comment:			

Proc.Step	TASK ELEMENT 23	STANDARD	Grade
f.7 (b)	IF the desired mode of operation is CASCADE, THEN PLACE the selected controller in CASCADE as follows: (b) Using raise/lower pushbuttons, SLOWLY ADJUST selected controller setpoint (blue pointer) to the Pressurizer level setpoint determined by present TAVE. Refer to Attachment 10, "TAVE (°F) Pressurizer Level Program."	'B' controller raise/lower pushbuttons adjusted to match controller setpoint (blue pointer) to Pressurizer level setpoint (red pointer). (blue pointer moved to match red pointer)	S U
Comment: **NOTE: Pressurizer level setpoint determined by present Tave. Operator may refer to SOP-1A attachment 10, Tave Pressurizer Level Program.** **CRITICAL STEP - only if pointers were not matched**			

Proc.Step	TASK ELEMENT 24	STANDARD	Grade
f.7 (c)	IF the desired mode of operation is CASCADE, THEN PLACE the selected controller in CASCADE as follows: (c) DEPRESS the "A" pushbutton on the selected controller.	Depresses the "A" pushbutton on LIC-0101B to place it in AUTO and notes: "A" AUTO light ON "M" MANUAL light OFF.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 25	STANDARD	Grade
f.7.(d)	IF the desired mode of operation is CASCADE, THEN PLACE the selected controller in CASCADE as follows: (d) DEPRESS the "C" pushbutton on the selected controller.	Depresses the "C" pushbutton pushed on LIC-0101B to place it in CASCADE and notes: "A" AUTO light OFF "C" CASCADE light ON	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 26	STANDARD	Grade
f.8	IF Charging Pumps P-55B and P-55C were placed in MANUAL, THEN RETURN Charging Pumps Control Select Switches to AUTO.	P-55B Control Select Switch to AUTO. P-55C Control Select Switch to AUTO.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 27	STANDARD	Grade
f.9	PLACE the unselected controller in MANUAL, with a 50% output signal.	Operator recognizes 'A' Level Controller is in MANUAL, places the output signal at 50%.	S U
Comment:			
EVALUATOR CUE:	***If Operator asks if 'A' Level Controller should be left at current output signal, response is place a 50% output signal on the controller.***		

Proc.Step	TASK ELEMENT 28	STANDARD	Grade
	Notify CRS that Pressurizer Level Controllers were not alternated, with 'B' Channel in service.	CRS notified Pressurizer Level Controllers not alternated, 'B' Level Controller in service.	S U
Comment:			
EVALUATOR CUE:	***If notified, CRS acknowledges.***		

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17.
- 'B' Pressurizer Level Controller selected for service.
- OVRD for LIC-0101A-AUT ('A' channel AUTO button in) to OFF
- OVRD for LIC-0101A-MAN ('A' channel MANUAL button in) to ON

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- It's Friday Day-Shift and per the Plant Daily Schedule, Pressurizer Level Controllers need to be alternated.

INITIATING CUES:

- The Control Room Supervisor directs you to alternate Pressurizer Level Controllers per SOP-1A, section 7.2.1.f., with the selected Pressurizer Level Controller in CASCADE.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS E

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

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

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

Alternate Path: NO.

Facility JPM #: PL-OPS-EOP-039J

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-condensible gases have been vented from Reactor Vessel Head to the Quench Tank.

Preferred Evaluation Location: Simulator __X__ In Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: EOP Supplement 26, "PCS Void Removal"

Validation Time: ___15___ minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

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Tools/Equipment/Procedures Needed:

EOP Supplement 26, "PCS Void Removal"

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-condensible gases in the Reactor vessel head. The following Containment monitoring instruments are in service:

- One (1) Hydrogen Monitor

INITIATING CUES:

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

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
---	Obtains correct procedure.	Refers to EOP Supplement 26, Section 3.0.	S U
Comment:			
***EVALUATOR CUE*: Provide candidate a working copy of EOP Supplement 26 Section 3.0.**			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
3.1.a	Ensure at least one Hydrogen Monitor in operation.	*Provided in Initial Conditions.*	S U
Comment:			
***EVALUATOR 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.c	Open PRV-1072, Vent Path to Quench Tank (preferred method).	___ Obtains Key 110. ___ Places HS-1072 to RESET and then to OPEN. ___ Verifies that PRV-1072 has opened (RED light is ON and GREEN light goes OFF)*	S U
Comment:			
*** not critical**			
CRITICAL STEP			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
3.1.d	Vent the Reactor Vessel Head by opening ONE of the following valves for 5-10 minutes: • PRV-1067	___ Obtains Key 105. ___ Places HS-1067 to RESET and then to OPEN. ___ Verifies that PRV-1067 has opened (RED light is ON and GREEN light is OFF)*	S U
	OR		
	• PRV-1068	___ Obtains Key 106. ___ Places HS-1068 to RESET and then to OPEN. ___ Verifies that PRV-1068 has opened (RED light is ON and GREEN light is OFF)*	

Comment:

Note: ***Use of either valve is acceptable.***

*** not critical**

CRITICAL STEP

Proc.Step	TASK ELEMENT 5	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*: Five minutes have elapsed.**

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
3.1.e	Secures Reactor Vessel Head venting by closing the appropriate valve which was opened: • PRV-1067	___ Using Key 105 places HS-1067 to CLOSE. ___ Verifies that PRV-1067 has closed (RED light is OFF and GREEN light is ON)*	S U
	OR		
	• PRV-1068	___ Using Key 106 places HS-1068 to CLOSE. ___ Verifies that PRV-1068 has closed (RED light is OFF and GREEN light is ON)*	
Comment: *** - not critical** **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 7	STANDARD	Grade
3.1.e	Ensure closed PRV-1072, Vent Path to Quench Tank.	___ Using Key 109 places HS-1072 to CLOSE. ___ Verifies that PRV-1072 has closed (RED light is OFF and GREEN light is ON)*	S U
Comment: *** - not critical** **CRITICAL STEP**			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17
- INSERT MF RC01 (Large Break LOCA)
- Trip all PCPs.
- Place Left Train Hydrogen Monitor in-service per SOP-38.
- Ensures Reactor Head Vent Header pressure (on Panel C-11A rear) has bled off.

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-condensible gases in the Reactor vessel head. The following Containment monitoring instruments are in service:

- One (1) Hydrogen Monitor

INITIATING CUES:

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

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U 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: YES - Operate light fails to illuminate when tested

Facility JPM #: PL-OPS-RMS-004J

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

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

Task Standard: Green radiation monitor "operate" light for RIA-1805 illuminated.

Preferred Evaluation Location: Simulator _X_ In Plant _____

Preferred Evaluation Method: Perform _X_ Simulate _____

References: SOP-39, "Area Radiation Monitoring System"

Validation Time: _10_ minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT_____

Comments:

Examiner: _____ Date: _____
Signature

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Tools/Equipment/Procedures Needed:

SOP-39, "Area Radiation Monitoring System," section 7.4.2

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 operating at full power.
- I&C personnel have just completed maintenance on Containment Radiation Monitor RIA-1805.
- CL-39 for RIA-1805 has been completed

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	Obtains correct procedure	SOP-39, section 7.4.2 is located	S U
Comment:			
EVALUATOR CUE: Provide candidate a working copy of SOP-39, section 7.4.2.			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.4.2.a	REFER TO Attachment 3, Checklist CL 39, "Area Monitors System Checklist."	Candidate determines that this step is N/A per initial conditions.	S U
Comment:			
EVALUATOR CUE If asked, inform candidate that CL-39 has been completed for RIA-1805.			

Proc. Step	TASK ELEMENT 3	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 4	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 and locates section 4.1 for Containment Radiation Monitors Operate light not illuminated.	S U
Comment:			
EVALUATOR CUE: Provide candidate a working copy of SOP-39, Attachment 2.			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
4.1.a	PRESS AND HOLD operate light.	Operate light pressed and held	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 6	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 7	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 8	STANDARD	Grade
4.1.d	RELEASE operate light.	Operate light is released	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
4.1.e	RESET all alarms.	Operator resets: ____ AMBER Trip 1 ____ RED Trip 2 by depressing associated indicating light.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 10	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 11	STANDARD	Grade
7.4.2.d	RESET all alarms.	Operator verifies all alarms reset.	S U
Comment:			

Proc. Step	TASK ELEMENT 12	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 13	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

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to any IC
- Insert OR RIA-1805-G to OFF on Panel C-11 rear
- Create Event Trigger 1 as follows:

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

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- The Plant is operating at full power.
- I&C personnel have just completed maintenance on Containment Radiation Monitor RIA-1805.
- CL-39 for RIA-1805 has been completed

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.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS G

TITLE: DEPRESSURIZE PCS WHILE ON SHUTDOWN COOLING

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Depressurize PCS While on Shutdown Cooling

Alternate Path: YES – voiding occurs in reactor head during depressurization requiring operator to repressurize the PCS to eliminate voids.

Facility JPM #: NEW

K/A: 010A1.07 Importance: RO: 3.7 SRO: 3.7

K/A Statement: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PZR PCS controls including: RCS pressure.

Task Standard: Reactor Vessel Head void removed.

Preferred Evaluation Location: Simulator __X__ In Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: SOP-1B, "Primary Coolant System – Cooldown"

Validation Time: 20 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

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Tools/Equipment/Procedures Needed:

SOP-1B, "Primary Coolant System – Cooldown," section 7.1.2

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 just cooled down for a forced outage following a loss of offsite power and a natural circulation cooldown. Offsite power is in the process of being restored.
- P-67B is the LPSI Pump in service.
- Chemistry has sampled the CVCS for boron within the last 30 minutes.

INITIATING CUES:

The Control Room Supervisor directs you to depressurize the PCS while on Shutdown Cooling per SOP-1B, Section 7.1.2 using PIC-0202, Letdown Pressure Controller. Secure Charging Pump P-55A when PCS pressure lowers to approximately 100 psia.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locates correct procedure.	SOP-1B, Section 7.1.2 obtained.	S U
Comment:			
EVALUATOR CUE: Provide candidate a Working Copy of SOP-1B, Section 7.1.2			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.1.2.a	NOTIFY Chemistry to sample the CVCS for boron prior to securing the last charging pump so that VCT boron concentration is known for startup.	Given in the Initial Conditions	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.1.2.b	WHEN depressurizing in Step 7.1.2c, THEN MONITOR for void formation. Void formation is indicated by one or more of the following: 1. Indicated Charging and Letdown flows do not correspond. 2. Any operable PCS temperature indication is less than 25°F subcooled. 3. RVLMS indicates voiding in the Reactor Vessel.	Monitors the following during the next step: Charging and Letdown flows Operable PCS temperatures RVLMS indication on Panel C-13	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.1.2.c	WHEN the following conditions are met: • at least 5 minutes have elapsed since stopping all PCPs • all of shutdown cooling inventory AND the PCS will be at least 25°F subcooled when depressurized (shutdown cooling return temperature from PCS less than or equal to 185°F) THEN REDUCE PCS pressure by performing the following as directed by the CRS: 1. REDUCE PCS pressure using PIC-0202, Letdown Pressure Controller.	Raises output on PIC-0202, Letdown Pressure Controller (slide bar to RIGHT = opens associated valve).	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
7.1.2.d	IF void formation is indicated, THEN RAISE PCS pressure as directed by CRS.	Determines that a void exists via RVLMS indications. Raises PCS pressure to band directed by CRS by: Adjusts PIC-0202 (slide bar initially to LEFT to close associated valve)	S U
Comment: ***EVALUATOR CUE: If asked to provide a PCS pressure band: respond to raise PCS pressure until voiding is removed, but not greater than 250 psia.*** **NOTES: Operator can detect voids and eliminate voids two ways.** **If Operator detects voids and restores pressure in Task Element 5, then go to Task Element 8.** **If Operator does not detect voiding in Task Element 5, then go to Task Element 6.** **Operator must complete either Task Element 5 <u>OR</u> 7 successfully.** **CRITICAL STEP (only if this step is performed)**			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
7.1.2.c	REDUCE PCS pressure by performing the following as directed by the CRS: 2. STOP the remaining Charging Pump.	Stops Charging Pump P-55A when PCS pressure is below 100 psia.	S U
Comment:			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
7.1.2.d	IF void formation is indicated, THEN RAISE PCS pressure as directed by CRS.	Determines that a void exists via RVLMS indications. Raises PCS pressure to band directed by CRS by: Starts one Charging Pump and Adjusts PIC-0202 (slide bar initially to LEFT to close associated valve)	S U
Comment: ***EVALUATOR CUE: If asked to provide a PCS pressure band: respond to raise PCS pressure until voiding is removed, but not greater than 250 psia.*** **CRITICAL STEP (only if this step is performed)**			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
n/a	NOTIFY the CRS that PCS voids are no longer evident.	CRS NOTIFIED.	S U
Comment: ***NOTE: JPM may be ended when Candidate informs you that voids are no longer evident and Candidate has restored pressure to band directed by CRS.***			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- IC-2, Ready to Start PCPs
- Open the following Swithyard Breakers:
  31H9, 29.H9, 27H9, 25H9, 29F7, 27R8.
- Create the following triggers and overrides:

1. Create TRIGGER 1:
   Event: RCPPZ.LT.200.0 [this is PCS pressure getting down to less than 200 psia]
2. Tie the following to TRIGGER 1:
   LI-0101B-G1 to OFF
   LI-0101B-R1 to ON
   LI-0101A-R-1 to ON
   LI-0101A-G1 to OFF
3. Create TRIGGERS 2, 3, 4, and 5:
   Event: et_array(1).and.RCPPZ.gt.202.0 [this is Trigger #1 plus PCS pressure being restored to above 202 psia]
   Action for Trigger 2: ior LI-0101B-G1
   Action for Trigger 3: ior LI-0101B-R1
   Action for Trigger 4: ior LI-0101A-R1
   Action for Trigger 5: ior LI-0101A-G1

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- The Plant has just cooled down for a forced outage following a loss of offsite power and a natural circulation cooldown. Offsite power is in the process of being restored.
- P-67B is the LPSI Pump in service.
- Chemistry has sampled the CVCS for boron within the last 30 minutes.

INITIATING CUES:

The Control Room Supervisor directs you to depressurize the PCS while on Shutdown Cooling per SOP-1B, Section 7.1.2 using PIC-0202, Letdown Pressure Controller. Secure Charging Pump P-55A when PCS pressure lowers to approximately 100 psia.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS H

TITLE: TEMPORARILY SECURE SHUTDOWN COOLING FLOW

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Temporarily Secure Shutdown Cooling Flow

Alternate Path: NO

Facility JPM #: NEW

K/A: 005A4.01 Importance: RO: 3.6 SRO: 3.4

K/A Statement: Ability to manually operate and/or monitor in the control room: Controls and indications for RHR pumps

Task Standard: Shutdown Cooling secured per SOP-3

Preferred Evaluation Location: Simulator __X__ In Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: SOP-3, "Safety Injection and Shutdown Cooling System"

Validation Time: 20 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-3, "Safety Injection and Shutdown Cooling System, "sections 7.3.6 and 7.3.4

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 Plant is in the middle of a 45 day refueling outage.
- P-67B is the LPSI Pump in service with PCS temperature approximately 108°F
- Another Operator will control PCS pressure during this evolution
- Shutdown Cooling is expected to be secured for 30 minutes.
- The maximum expected PCS heatup after Shutdown Cooling is secured is 20°F/hr
- PCS and Pressurizer parameters are being monitored via performance of PO-2, "PCS Heatup/Cooldown Operations."
- All GOP-14 requirements are met for this evolution with all Management signoffs complete

INITIATING CUES:

The Control Room Supervisor directs you to temporarily secure Shutdown Cooling flow per SOP-3, Section 7.3.6. You are further directed to have MO-3014, Loop 2B LPSI Injection Valve, to be the valve that is left in the throttled position when performing step 7.3.6.c.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locates correct procedure	SOP-3, Section 7.3.6 LOCATED	S U
Comment:			
EVALUATOR CUE: Provide candidate a working copy of SOP-3, Section 7.3.6			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.3.6.a	ENSURE the following: 1. PCS level greater than 623'-0". 2. Requirements of Step 5.1.2 and Technical Specifications LCO 3.4.7, LCO 3.4.8, LCO 3.9.4, or LCO 3.9.5, as applicable, are met. 3. PCS heatup rate and allowable outage time determined. Refer to Section 7.3.7. 4. Requirements of General Operating Procedure GOP-14, "Shutdown Cooling Operations," are met. 5. Operations Superintendent approval to secure Shutdown Cooling flow has been obtained.	Given in the Initial Conditions	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.3.6.b	IF PCS temperature will be changed more than five (5) degrees from the established target temperature, THEN ENSURE PCS and Pressurizer parameters are being monitored. Refer to PO-2, "PCS Heatup/Cooldown Operations."	Determines that this step is being met. (PO-2 performance given in initial conditions)	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.3.6.c	PERFORM Section 7.3.4 to reduce total Shutdown Cooling flow to approximately 300 to 500 gpm.	Branches to section 7.3.4 of SOP-3	S U
Comment: ***Evaluator provides a Working Copy of SOP-3, Section 7.3.4*** ***EVALUATOR CUE: Another Operator will control PCS pressure during this evolution.***			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
7.3.4.a	IF PCS temperature will be changed more than five (5) degrees from the established target temperature, THEN ENSURE PCS and Pressurizer parameters are being monitored. Refer to PO-2, "PCS Heatup/Cooldown Operations."	Determines that this step is being met. (PO-2 performance given in initial conditions)	S U
Comment:			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
7.3.4.b	IF PCS level is greater than 643'-0" AND any CRDM tool access flanges are removed, THEN ENSURE personnel are clear of CRDM tool access flanges and Reactor Cavity.	Determines that this step does not apply. (PCS level is given in initial conditions)	S U
Comment:			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
7.3.4.c	DETERMINE desired total Shutdown Cooling flow.	Determines 300-500 gpm applies (from previous step 7.3.6.c).	S U
Comment:			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
7.3.4.d	IF Shutdown Cooling flow is to be throttled below 2810 gpm,...	Determines that sub-steps 1, 2, and 3 do not apply.	S U
Comment: ***EVALUATOR CUE: CRS directs that sub-step 3 is not applicable for this evolution.***			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
7.3.4.d	IF Shutdown Cooling flow is to be throttled below 2810 gpm,... 4. IF PCS recirculation flow rate is less than the minimum required by Technical Specifications LCO 3.4.7, LCO 3.4.8, LCO 3.9.4, or LCO 3.9.5, THEN CLOSE AND CAUTION TAG MV-CVC2162, Primary Makeup Water Supply Stop within one hour.	Notifies CRS of need to Caution Tag MV-CVC2162.	S U
Comment: ***EVALUATOR CUE IF informed as CRS of need to hang Caution Tag on MV-CVC2162: acknowledge and inform Operator that this was already completed by another operator during GOP-14.***			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
7.3.4.d	IF Shutdown Cooling flow is to be throttled below 2810 gpm,... 5. MAINTAIN General Operating Procedure GOP-14, "Shutdown Cooling Operations," requirements.	Notifies CRS of need to maintain GOP-14 requirements.	S U
Comment: ***EVALUATOR CUE: IF informed as CRS of need to maintain GOP-14 requirements: acknowledge.***			

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
7.3.4.e	DETERMINE required status of...	Determines that maximum of one throttled/open LPSI Injection Valve applies. (per initiating cue this will be MO-3014)	S U
Comment:			

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
7.3.4.f	ADJUST Shutdown Cooling flow as follows: 1. ENSURE FIC-0306 is in MANUAL.	Checks FIC-0306 is in MANUAL.	S U
Comment:			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
7.3.4.f	ADJUST Shutdown Cooling flow as follows: 2. SLOWLY OPERATE LPSI Injection Valves to establish status determined in Step 7.3.4e.	SLOWLY operates each of the four LPSI Injection Valves (one at a time) until only one (MO-3014) LPSI Injection Valve is throttled open and SDC flow is 300 to 500 gpm.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
7.3.4.f	ADJUST Shutdown Cooling flow as follows: 3. BALANCE flow between in use LPSI Injection Loops to desired Total Shutdown Cooling flow determined in Step 7.3.4c.	Determines this step is not applicable.	S U
Comment:			

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
7.3.4.f	ADJUST Shutdown Cooling flow as follows: 4. If necessary: (a) THROTTLE CV-3025, SDC Hx Outlet to maintain desired PCS cooling.	Determines this step is not applicable.	S U
Comment:			

Proc. Step	TASK ELEMENT 16	STANDARD	Grade
7.3.4.f	ADJUST Shutdown Cooling flow as follows: 4. If necessary: (b) THROTTLE FIC-0306 output signal to maintain desired flow through Shutdown Cooling Heat Exchangers.	Determines this step is not applicable. Branches back to section 7.3.6 of SOP-3	S U
Comment:			

Proc. Step	TASK ELEMENT 17	STANDARD	Grade
7.3.6.d	WHEN Total Shutdown Cooling flow has been reduced to approximately 300 to 500 gpm, THEN PERFORM the following: 1. CLOSE CV-3025, SDC Hx Outlet.	HIC-3025A 'MANUAL' Slide Bar used to **CLOSE** (Slide bar taken to the 'left') CV-3025 AND CO-ORDINATES with the with Operator controlling PCS Pressure	S U
Comment: ***EVALUATOR NOTE:*** ***Procedure written for one person operation, this is a two person operation, it is not CRITICAL for the co-ordination from a JPM standpoint.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 18	STANDARD	Grade
7.3.6.d	WHEN Total Shutdown Cooling flow has been reduced to approximately 300 to 500 gpm, THEN PERFORM the following: 2. CLOSE CV-3055, SDC Hx Inlet.	HS-3025A to CLOSE with key. (Key may be removed or left in keyslot)	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 19	STANDARD	Grade
7.3.6.d	WHEN Total Shutdown Cooling flow has been reduced to approximately 300 to 500 gpm, THEN PERFORM the following: 3. STOP the operating LPSI Pump.	P-67B STOPPED	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 20	STANDARD	Grade
n/a	NOTIFY the CRS that Shutdown Cooling has been temporarily secured per SOP-3, Section 7.3.6.	CRS NOTIFIED SDC temporarily secured	S U
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- IC-2, Ready to Start PCPs
- Need Dedicated Operator to control PCS pressure during evolution (solid plant control)
- Ensure TR-0351 S/D Cooling recorder in operation
- Keys installed in the following MOVs:
  - MO-3015
  - MO-3016
  - MO-3189
  - MO-3198
  - MO-3190
  - MO-3189
- Ensure Caution Tags on CV-3057 and CV-3031

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- A Plant is in the middle of a 45 day refueling outage.
- P-67B is the LPSI Pump in service with PCS temperature approximately 108°F
- Another Operator will control PCS pressure during this evolution
- Shutdown Cooling is expected to be secured for 30 minutes.
- The maximum expected PCS heatup after Shutdown Cooling is secured is 20°F/hr
- PCS and Pressurizer parameters are being monitored via performance of PO-2, "PCS Heatup/Cooldown Operations."
- All GOP-14 requirements are met for this evolution with all Management signoffs complete

INITIATING CUES:

The Control Room Supervisor directs you to temporarily secure Shutdown Cooling flow per SOP-3, Section 7.3.6. You are further directed to have MO-3014, Loop 2B LPSI Injection Valve, to be the valve that is left in the throttled position when performing step 7.3.6.c.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYSTEM I

TITLE: SECURE FROM A WASTE GAS RELEASE

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Secure from Waste Gas Release

Alternate Path: NO

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

K/A: 071K4.04 Importance: RO: 2.9 SRO: 3.4

K/A Statement: Knowledge of design feature(s) and/or interlock(s) which provide for the following: Isolation of waste gas release tanks

Task Standard: T-68B Waste Gas Decay Tank release secured

Preferred Evaluation Location: Simulator ____ In Plant __X___

Preferred Evaluation Method: Perform ____ Simulate __X___

References: SOP-18A, "Radioactive Waste System – Gaseous"

Validation Time: 10 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-18A, "Radioactive Waste System – Gaseous, "Section 7.5

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:

- The Plant is at 48% power
- T-68B Waste Gas Decay Tank batch release is in progress
- It has been determined that the batch release must be secured

INITIATING CUES:

The CRS has directed you to secure from the batch release of T-68B, per SOP-18A, Section 7.5, Step nn.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Obtain correct procedure.	SOP-18A, Section 7.5, Step nn located	S U
Comment: ***EVALUATOR CUE: Provide candidate a working copy of SOP-18A, Section 7.5, step nn***			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
nn.1	SECURE from WGDT release as follows: 1. CLOSE appropriate Discharge Header Valves T-68A/B/C: • MV-WG719, T-68A, B & C Outlet Isolation	MV-WG719 CLOSED	S U
Comment: ***EVALUATOR NOTE: Task Elements 2 and 3 can be performed in any order since they are bulleted substeps*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
nn.1	SECURE from WGDT release as follows: 1. CLOSE appropriate Discharge Header Valves T-68A/B/C: • MV-WG718A, T-101A, B & C Outlet Isolation	MV-WG718A CLOSED	S U
Comment: ***EVALUATOR NOTE: Task Elements 2 and 3 can be performed in any order since they are bulleted substeps*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
nn.2.a	CLOSE Discharge Control Valve CV-1123, WGDT Discharge, as follows: ▪PLACE in CLOSE position HS-1123, Waste Gas Decay Tanks Discharge, at C-40	HS-1123 in CLOSE	S U
Comment: ***EVALUATOR CUE: CV-1123 is closed, the green light is lit.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
nn.2.b	CLOSE Discharge Control Valve CV-1123, WGDT Discharge, as follows: ▪SET to zero (0) psi HIC-1123, Waste Gas Discharge To Stack	HIC-1123 INDICATING 0 psi	S U
Comment: ***EVALUATOR CUE: HIC-1123 indicates 0 psi***			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
nn.3	OPEN ONE of the following Drain Valves to DRAIN selected WGDT for one (1) minute, THEN CLOSE: ▪MV-CA352, I/A Isolation/Control To CV-1120B, T-68B Drain Valve	OPENS MV-CA352 for one (1) and then CLOSED (Opens MV-CA352 which opens CV-1120B)	S U
Comment: ***EVALUATOR CUE: one minute has elapsed.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
n/a	NOTIFY CRS that WGDT T-68B release secured	CRS NOTIFIED WGDT T-68B SECURED	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 48% power
- T-68B Waste Gas Decay Tank batch release is in progress
- It has been determined that the batch release must be secured

INITIATING CUES:

The CRS has directed you to secure from the batch release of T-68B, per SOP-18A, Section 7.5, Step mm.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS J

TITLE: START AFW PUMP P-8B LOCALLY USING CV-0522B

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Establish/control alternate Auxiliary Feedwater methods IAW EOP Supplement 19

Alternate Path: YES – Turbine Driver K-8 is found to be unlatched and reset lever operation is required to complete task.

Facility JPM #: PL-OPS-ONP-010J

K/A: 061A2.04 Importance: RO: 3.4 SRO: 3.8

K/A Statement: Ability to (a) predict the impacts of the following malfunctions or operations on the AFW; and (b) based on those predictions, use procedures to correct; control; or mitigate the consequences of those malfunctions or operations: pump failure or improper operation

Task Standard: AFW Pump P-8B is operating with steam supplied via CV-0522B, K-8 Steam Supply from E-50A, in local control

Preferred Evaluation Location: Simulator ____ In Plant __X___

Preferred Evaluation Method: Perform ____ Simulate __X___

References: ONP-25.2, "Alternate Safe Shutdown Procedure"
EOP Supplement 19, "Alternate Auxiliary Feedwater Methods"

Validation Time: 15 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

EOP Supplement 19, "Alternate Auxiliary Feedwater Methods," section 4, P-8B Normal Steam Supply From 'A' S/G including page 21 of supplement 19

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:

- AFW flow control valves for P-8B, AFW Pump, have been verified closed.
- Buses 1C and 1D are NOT energized.
- 'A' Steam Generator steam and feed paths to both Steam Generators are available.
- CV-0522B, K-8 Normal Steam Supply, is closed and cannot be operated from either the Control Room or C-150 Panel.

INITIATING CUES:

During performance of ONP-25.2, "Alternate Safe Shutdown Procedure," the CRS directs you to start P-8B locally using the Preferred Method of EOP Supplement 19 Section 4.0.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Obtains correct procedure	EOP Supplement 19, Section 4.0 located	S U
Comment:			
EVALUATOR CUE:Provide candidate a working copy of EOP Supplement 19			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
4.0.1	OPEN HS-0522B, K-8 Normal Steam Supply, from one of the following prioritized locations…	Determines that this step is not applicable	S U
Comment:			
EVALUATOR CUE:If asked if CV-0522B can be operated from either the Control Room or C-150 Panel, report that CV-0522B <u>cannot</u> be remotely operated			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
4.0.2.a	CLOSE the following valves: ▪ MV-CA377, air supply to CV-0522B ▪ MV-N2/268, nitrogen supply to CV-0522B	Simulates or describes CLOSING by turning the handwheel clockwise: ▪MV-CA377, air supply to CV-0522B ▪MV-N2/268, nitrogen supply to CV-0522B	S U
Comment:			
EVALUATOR CUE: The valves are closed **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
4.0.2.b.1	MANUALLY CLOSE CV-0522B, K-8 Steam Supply From E-50A, as follows: ▪ UNSCREW the coupling from the manual override shaft	Simulates or describes UNSCREWING coupling from shaft by turning coupling counter clockwise	S U

Comment:

EVALUATOR CUE: Provide page 21 of EOP Supplement 19

EVALUATOR CUE: The coupling is unscrewed from the shaft

NOTE: ***A ladder may be used to access the coupling***

CRITICAL STEP

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
4.0.2.b.2	MANUALLY CLOSE CV-0522B, K-8 Normal Steam Supply, as follows: ▪ TURN handwheel clockwise until the top of the actuator shaft is exposed sufficiently to engage the coupling	Simulates or describes TURNING handwheel clockwise until manual override shaft is exposed	S U

Comment:

EVALUATOR CUE: The manual shaft is exposed

CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
4.0.2.b.3	INSERT the fork of the coupling all the way onto actuator shaft	Simulates or describes INSERTING coupling all the way onto shaft	S U

Comment:

NOTE: ***EOP Supplement 19, page 21 has a labeled diagram of CV-0522B***

EVALUATOR CUE: The coupling is all the way onto the shaft

CRITICAL STEP

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
4.0.2.b.4	REMOVE lockwire from MV-FW356, CV-0522B Bonnet Isolation	Simulates or describes REMOVING the lockwire	S U

Comment:

EVALUATOR CUE: The lockwire is removed from MV-FW356, CV-0522B Bonnet Isolation

CRITICAL STEP

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
4.0.2.b.5	OPEN MV-FW356, CV-0522B Bonnet Isolation	Simulates or describes OPENING MV-FW356 by TURNING handle 90 degrees (places it "in-line" with the turbine/piping).	S U

Comment:

EVALUATOR CUE: MV-FW356, CV-0522B Bonnet Isolation handle is in line with the tubing

CRITICAL STEP

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
4.0.2.b.6	CLOSE CV-0522B, K-8 Normal Steam Supply, using the handwheel	Simulates or describes checking valve closed by TURNING handwheel in the clockwise direction (given in the initial conditions)	S U

Comment:

EVALUATOR CUE: If asked about the position of CV-0522B, report that it is closed

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
4.0.2.c.1	CHECK Turbine Driver K-8 is latched as follows: ▪ ENSURE the end of resetting level (knife edge) is in contact with the trip level (can NOT slip a sheet of paper between),. Refer to Figure 1 (Page 20)	Determines that Turbine Driver is NOT RESET	S U
Comment: **NOTE:** ***EOP Supplement 19, page 20 has a labeled diagram of CV-0522B trip linkage*** ***EVALUATOR CUE: The Knife edge of resetting lever is hanging down and not in contact with the hand trip lever*** **CRITICAL STEP**			

-------NOTE: Alternate Path begins here and is covered in task elements 11 and 12-------

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
4.0.2.c.2.a	CHECK Turbine Driver K-8 is NOT latched, THEN RELATCH as follows: ▪ ENSURE CLOSED CV-0522B, K-8 Normal Steam Supply	Simulates or describes verifying that CV-0522B is CLOSED	S U
Comment: ***EVALUATOR CUE: If asked about the position of CV-0522B, report that it is closed***			

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
4.0.2.c.2.b	CHECK Turbine Driver K-8 is NOT latched, THEN RELATCH as follows: ▪ RESET the overspeed trip lever on Turbine Driver K-8 using the Auxiliary Reset lever	Simulates or describes PULLING UP on the Auxiliary Reset lever until the lever is in contact with the knife edge	S U
Comment: ***EVALUATOR CUE: The knife edge of resetting lever is in contact with the hand trip lever*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
n/a	CLEAR personnel from the Auxiliary Feedwater Pump room	CHECKS room for personnel	S U

Comment:

EVALUATOR CUE: There are no other personnel in the Auxiliary Feedwater Pump room

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
4.0.2.d	OPEN MV-FW688, PI-0590 root valve	Simulates or describes OPENING MV-FW688, PI-0590 root valve by TURNING the handwheel counter clockwise	S U

Comment:

EVALUATOR CUE: Valve is open

CRITICAL STEP

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
4.0.2.e	SLOWLY THROTTLE OPEN CV-0522B to maintain between 200 and 250 psig steam pressure on any of the following: ▪ PI-0590 ▪ PI-0521A ▪ PI-0521B	Simulates or describes OPENING CV-0522B with the hand operator by TURNING handwheel counter clockwise	S U

Comment:

EVALUATOR CUE: Steam flow noise can be heard, CV-0522B, K-8 Normal Steam Supply indicates off its full closed position, and pressure on gauge is rising.

CRITICAL STEP

Proc. Step	TASK ELEMENT 16	STANDARD	Grade
4.0.2.e	CHECK PI-0590 OR PI-0521B reading between 200 and 250 psig	VERIFIES PI-0590 OR PI-0521B reading between 200 to 250 psig	S U
Comment:			
EVALUATOR CUE: PI-0590 OR PI-0521B indicates 235 psig and stable			

Proc. Step	TASK ELEMENT 17	STANDARD	Grade
n/a	Notify CRS that AFW Pump, P-8B is operating	CRS NOTIFIED that AFW Pump, P-8B is operating with CV-0522B opened manually	S U
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- N/A

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- AFW flow control valves for P-8B, AFW Pump, have been verified closed.
- Buses 1C and 1D are NOT energized.
- 'A' Steam Generator steam and feed paths to both Steam Generators are available.
- CV-0522B, K-8 Normal Steam Supply, is closed and cannot be operated from either the Control Room or C-150 Panel.

INITIATING CUES:

During performance of ONP-25.2, "Alternate Safe Shutdown Procedure," the CRS directs you to start P-8B locally using the Preferred Method of EOP Supplement 19 Section 4.0.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS K

TITLE: REDUCE STATION BATTERY #1 LOADING

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Reduce Station Battery Loading

Alternate Path: NO

Facility JPM #: PL-OPS-EOP-021J

K/A: 063A1.01 Importance: RO: 2.5 SRO: 3.3

K/A Statement: Ability to predict and/or monitor changes in parameters associated with operating the DC electrical system controls including: Battery capacity as it is affected by discharge rate.

Task Standard: Station Battery #1 loading reduced to <157 amps.

Preferred Evaluation Location: Simulator ____ In Plant _X__

Preferred Evaluation Method: Perform ____ Simulate _X__

References: EOP-3.0, "Station Blackout Recovery"
EOP Supplement 7, "Battery #1 Load Stripping"

Validation Time: _10_ minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

EOP Supplement 7, "Battery #1 Load Stripping"

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:

- All AC power is lost.
- It is approximately 35 minutes after the loss of all AC power.
- 1-1 and 1-2 Diesel Generators will not start.

INITIATING CUES:

During performance of EOP-3.0, "Station Blackout Recovery," Step 19, the CRS directs you to ensure Station Battery #1 discharge is within limits, per EOP Supplement 7.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locate correct procedure	EOP Supplement 7 is located	S U
Comment:			
EVALUATOR CUE:Provide candidate a working copy of EOP Supplement 7			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
1.0.1	MONITOR Station Battery No 1 loading using the dual range ammeter EAI-45 located at Panel D-13: a. For values greater than 200 amps, use the outer scale on EAI-45 b. For values less than 200 amps, use the Lower Scale Reading push button and the inner scale on EAI-45	Operator reviews instructions for reading Station Battery No. 1 Ammeter.	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
1.0.2	RECORD the following: a. Time of event initiation: _____ b. Present Time: _____ c. Station Battery No 1 discharge current: EAI-45: _____Amps	Operator RECORDS the following: ___ 35 minutes ago from present time ___ Present time Operator determines bus loading for Station Battery No. 1 by: ___ depressing Lower Scale Reading push button ___ reading inner scale of ammeter. ___ Records 190 amps	S U
Comment: ***EVALUATOR CUE:Use pointer and place on Station Battery No. 1 ammeter, EAI-45, to indicate 190 AMPS out on inner scale.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
1.0.3	DETERMINE the maximum acceptable Station Battery No 1 discharge current for time since event initiation: **Time Since Event** / **Acceptable Current** 0 to 1 min. ≤ 832 amps 1 to 11 min. ≤ 401 amps 11 to 30 min. ≤ 222 amps > 30 min. ≤ 157 amps	Operator determines the following maximum acceptable Station Battery No. 1 discharge current is ≤ 157 amps	S U
Comment:			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
1.0.4.a	IF Station Battery No 1 discharge current is greater than, or will be greater than, the limits of Step 1.3, THEN PERFORM the following steps, as necessary, to maintain discharge current within acceptable limits: OPEN the following breakers in the Cable Spreading Room: Panel D11-1 • 72-107 • 72-113 • 72-114 • 72-116 Panel D11-2 • 72-122 • 72-126 • 72-128 • 72-130 • 72-133 • 72-134	Operator performs the following: ___ Determines that discharge current of 190 amps is not acceptable ___ Simulates OPENING breakers on panels D11-1 and D11-2.	S U
Comment: ***EVALUATOR CUE: If candidates attempts to refer to drawing E-35 for valve failure modes, inform candidate that the Control Room has completed this.*** ***EVALUATOR CUE: As each breaker is opened, cue operator that breaker indicates OFF. Battery discharge current will lower by only 2 or 3 amps for each breaker.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
1.0.4.b	WHEN the above breakers are open, THEN RECORD the following: 1) Time: _____ 2) Station Battery No 1 discharge current: EAI-45: _____ amps	Operator performs the following: ___ RECORDS present time ___ Depresses Lower Scale Reading push button ___ Reads inner scale of ammeter ___ RECORDS Battery No. 1 discharge current	S U
Comment: ***EVALUATOR CUE: Use pointer and place on Station Battery No. 1 inner scale ammeter, EAI-45, to indicate 170 AMPS out on inner scale.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
1.0.4.c	IF Station Battery No 1 discharge current continues to be greater than the acceptable limits of Step 1.3, THEN OPEN the following breaker in Cable Spreading Room • 72-17 (D-10)	Operator performs the following: ___ Determines that discharge current is still not acceptable ___ Simulates OPENING breaker 72-17 on D-10	S U
Comment: ***EVALUATOR CUE: Provide cue that breaker indicates OFF. Battery discharge current should lower by approximately 40 amps.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
1.0.4.d	WHEN the above breaker is open, THEN RECORD the following: 1) Time: _____ 2) Station Battery No 1 discharge current: EAI-45: _____ amps	Operator performs the following: ___ RECORDS present time ___ Depresses Lower Scale Reading push button ___ Reads inner scale of ammeter ___ RECORDS Battery No. 1 discharge current	S U
Comment: ***EVALUATOR CUE: Use pointer and place on Station Battery No. 1 ammeter, EAI-45, to indicate 135 AMPS out on inner scale.*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
1.0.4.e	IF Station Battery No 1 discharge current continues to be greater than the acceptable limits of Step 1.3, THEN PERFORM the following…	Operator determines that this step is N/A because Battery No. 1 discharge current is <157 amps	**S U**
Comment:			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
n/a	Operator informs Control Room that task is complete	Control Room informed	**S U**
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- N/A

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- All AC power is lost.
- It is approximately 35 minutes after the loss of all AC power.
- 1-1 and 1-2 Diesel Generators will not start.

INITIATING CUES:

During performance of EOP-3.0, "Electrical Emergency Recovery," Step 19, the CRS directs you to ensure Station Battery #1 discharge is within limits, per EOP Supplement 7.