

Facility: Perry **JPM No:** 2004-301-2.a

Task Title: Bypass a Control Rod Position at the RACCs

K/A Reference: 201005.A2.02

Recommended Testing Method:

Simulate Actual X

Classroom Simulator X Plant

Task Standard: Control Rod 18-47 position is bypassed at both RACCs.

Required Materials: SOI-C11(RCIS)
RACC Bypass File Key

General References: SOI-C11(RCIS)

Time Critical Task: NO

Validation Time: 10 minutes

Initial Conditions: None

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initiating Cue:

A DATA FAULT exists for control rod 18-47. The Reactor Engineer has been informed and concurs with the Unit Supervisor that the control rod position must be bypassed to allow movement of the control rod. Bypass the control rod position indication for control rod 18-47.

NOTE

There are two position bypass channels, one in each RACC. Although each Bypass File has 20 card slots, only 8 will have cards installed. Each card contains 11 toggle switches in a vertical arrangement.

- *The top switch has the bypass function.*
- *The remaining 10 switches are provided for the binary address of the rod to be bypassed.*

NOTE

Procedure step 7.15.1 is satisfied by the initial conditions.

Start Time: _____

C Step: 7.15.2 **DETERMINE** the binary address of the rod to be bypassed from Attachment 1, Binary Coordinates.

Standard: Uses Attachment 1 to determine that the binary coordinates for control rod 18-47 are:

X_4	X_3	X_2	X_1	X_0	Y_4	Y_3	Y_2	Y_1	Y_0
0	0	1	1	0	0	1	1	0	1

Cue:

Comment:

Step: 7.15.3 **RECORD** the following on Attachment 4, Verification Checklist Section 7.15 and 7.16, Rod Position Bypass in RACC.

- Binary address of the rod to be bypassed
- Rod position of the rod to be bypassed.

Standard: Records the rod position and binary address (see above step) for control rod 18-47 on Attachment 4.

Cue:

Comment:

Step: 7.15.4 **PERFORM** independent verification of the following:

- Binary address of the rod to be bypassed
- Rod position of the rod to be bypassed.

Standard: Requests independent verification of rod position and binary address.

Cue: Inform candidate that independent verification is complete.

Comment:

Step: 7.15.5 **IF** required, **THEN UNLOCK** the Bypass File in the RACC at 1H13-P651.

Standard: Obtains key and unlocks the bypass file in the RACC at P651.

Cue:

Comment:

NOTE

Toggle switches are positioned to the right for a "1" or to the left for a "0".

* **Step:** 7.15.6 **POSITION** the bottom 10 toggle switches to the binary address for the rod being bypassed on a Bypass Card at 1H13-P651

Standard: Positions the bottom 10 toggle switches to the binary address for rod 18-47.

	X ₄	X ₃	X ₂	X ₁	X ₀	Y ₄	Y ₃	Y ₂	Y ₁	Y ₀
Required	L	L	R	R	L	L	R	R	L	R
Actual										

Cue:

Comment:

Step: 7.15.7 **RECORD** the 1H13-P651 Bypass Card slot number on Attachment 4, Verification Checklist Section 7.15 and 7.16, Rod Position Bypass in RACC.

Standard: Records slot number on Attachment 4.

Cue:

Comment:

* **Step:** 7.15.8 **PLACE** the bypass (top) switch for the card to BYPASS (right) at 1H13-P651.

Standard: Places the bypass (top) switch for the card to BYPASS (right) at 1H13-P651.

Cue:

Comment:

Step: 7.15.9 **IF** required, **THEN UNLOCK** the Bypass File in the RACC at 1H13-P652.

Standard: Obtains key and unlocks the bypass file in the RACC at P652.

Cue:

Comment:

NOTE

Toggle switches are positioned to the right for a "1" or to the left for a "0".

* **Step:** 7.15.10 **POSITION** the bottom 10 toggle switches to the binary address for the rod being bypassed on a Bypass Card at 1H13-P652.

Standard: Simulates positioning of the bottom 10 toggle switches to the binary address for rod 18-47.

	X ₄	X ₃	X ₂	X ₁	X ₀	Y ₄	Y ₃	Y ₂	Y ₁	Y ₀
Required	L	L	R	R	L	L	R	R	L	R
Actual										

Cue: Indicate that the toggle switches are in the position specified by the candidate.

Comment:

Step: 7.15.11 **RECORD** the 1H13-P652 Bypass Card slot number on Attachment 4, Verification Checklist Section 7.15 and 7.16, Rod Position Bypass in RACC.

Standard: Records the slot number on Attachment 4.

Cue:

Comment:

* **Step:** 7.15.12 **PLACE** the bypass (top) switch for the card to BYPASS (right) at 1H13-P652.

Standard: Simulates placing the bypass (top) switch for the card to BYPASS (right) at 1H13-P652.

Cue: Indicate that the toggle switch is in the position specified by the candidate.

Comment: Cue the simulator operator to insert the remote that bypasses rod position for control rod 18-47 at P652.

Step: 7.15.13 **PERFORM** independent verification of the following:

- Bypass Card slot number
- Bypass Card toggle switch positions.

Standard: Requests independent verification of slot number and toggle switch positions.

Cue: Inform candidate that independent verification is complete.

Comment:

Step: 7.15.14 **IF** all bypassing is complete, **THEN LOCK** the Bypass File.

Standard: Locks the Bypass Files at both RACCs and returns key to original location.

Cue:

Comment:

Step: 7.15.15 **CONFIRM** the CHANNEL DISAGREE light is **NOT** backlit at the OCM, unless backlit for other reasons.

Standard: Confirms that the CHANNEL DISAGREE light is **NOT** backlit.

Cue:

Comment:

Step: 7.15.16 **DEPRESS** POSITION BYPASSED at the OCM.

Standard: Depresses POSITION BYPASSED at the OCM.

Cue:

Comment:

Step: 7.15.17 **CONFIRM** the rod to be bypassed is indicated as Bypassed by its green LED at the OCM.

Standard: Control Rod 18-47 green LED is lit.

Cue:

Comment:

Step: 7.15.18 **RELEASE** POSITION BYPASSED at the OCM.

Standard: POSITION BYPASSED pushbutton is released.

Cue:

Comment:

Step: 7.15.19 **VERIFY** the following:

- The Control Rod Position Bypass is recorded in the Plant Narrative Log.
- The bypass condition is recorded in accordance with OAI-1701.
- A copy of Attachment 4, Verification Checklist Section 7.15 and 7.16, Rod Position Bypass in RACC is attached to the LCO Tracking Sheet.

Standard: Reports to US that control rod 18-47 is bypassed and simulates initiating the necessary log entry and LCO.

Cue: Task is complete.

Comment:

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.b

Task Title: Shift HPCS from Full Flow Test to CST mode to injection mode.

K/A Reference: 209002.A2.01

Recommended Testing Method:

Simulate Perform X

Classroom Simulator X Plant

Task Standard: HPCS is injecting into the Reactor Pressure Vessel.

Required Materials: SOI-E22A, High Pressure Core Spray System

General References: SOI-E22A, High Pressure Core Spray System

Time Critical Task: NO

Validation Time: 5 minutes

Initial Conditions:

Any IC with RPV pressure >600 psig.

Align the High Pressure Core Spray system in the full flow test mode to the CST in accordance with SOI-E22A.

Insert malfunction(s) to disable automatic and manual initiation (pushbutton) of HPCS.

Lower RPV water level below Level 3 (178").

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initiating Cue:

The HPCS pump is being operated in the CST to CST mode per section 7.10 of SOI-E22A, High Pressure Core Spray System. RPV water level is below Level 3 and lowering. Manually initiate High Pressure Core Spray and inject into the RPV.

NOTE TO EVALUATOR

Initiation logic is disabled, therefore the candidate will have to complete the line-up manually.

Start Time: _____

Step: 4.3.1 **ARM** and **DEPRESS** the HPCS MANUAL INITIATION push-button on 1H13-P0601.

Standard: Rotates the arming collar to the ARMED position AND depresses the pushbutton.
Annunciator "HPCS MAN INITIATION SWITCH ARMED" alarms.

Cue:

Comment:

NOTE TO EVALUATOR

Since the HPCS pump is running and aligned to the CST, and the ESW pump is already running, verification of those actions is not listed in the JPM.

The candidate is not expected to, nor required to start the Division 3 Standby Diesel Generator as part of verifying the Automatic Initiation.

* **Step:** 4.3.2 **REFER TO** Automatic Initiation (section 4.4) and **VERIFY** initiation actions occur.

Standard: Recognizes that initiation logic did NOT actuate and proceeds with manual lineup.

Cue: If candidate reports to SRO that HPCS logic failed to initiate and requests further guidance, then ask the candidate what (s)he recommends and direct the candidate to manually perform the required actions to inject with HPCS.

Comment:

NOTE TO EVALUATOR

Due to the conditional nature of the following step, it is listed before the other Section 4.4 steps to ensure the evaluator is prepared to monitor for performance of the step.

Step: 4.4.3 **WHILE** performing the following steps, **VERIFY** the HPCS PUMP MIN FLOW VALVE:

- opens WHEN HPCS PUMP FLOW is <725 gpm.
- closes WHEN HPCS PUMP FLOW is >725 gpm.

Standard:

Cue:

Comment:

* **Step: 4.4.1** **HOLD** the HPCS FIRST TEST VALVE TO CST, 1E22-F010,
 (a) in CLOSE **UNTIL** closed.

Standard: Green light ON; Red light OFF for 1E22-F010

Cue:

Comment:

* **Step: 4.4.1** **HOLD** the HPCS SECOND TEST VALVE TO CST, 1E22-
 (b) F011, in CLOSE **UNTIL** closed.

Standard: Green light ON; Red light OFF for 1E22-F011

Cue:

Comment:

* **Step:** 4.4.1 (c) **TAKE** the HPCS INJECTION VALVE, 1E22-F004, to OPEN.

Standard: Green light OFF; Red light ON for 1E22-F004.
RPV water level is increasing.

Cue:

Comment:

Step: 4.4.1 (d) **WHEN** time permits, **THEN VERIFY** the following: HPCS TEST VALVE TO SUPR POOL, 1E22-F023, is closed.

Standard: Green light ON; Red light OFF for 1E22-F023.

Cue:

Comment:

Step: 4.4.2 **VERIFY** the HPCS INJ CHECK VLV, 1E22-F005, opens.

Standard: RPV water level is increasing.

Cue:

Comment:

Step: 4.4.4 **NOTIFY** Radiation Protection that a Suppression Pool evolution is in progress so the survey frequency may be increased as necessary.

Standard: Initiates action to notify Radiation Protection.

Cue:

Comment:

Step: Reports to SRO that HPCS is injecting into the RPV and that RPV level is increasing.

Standard:

Cue: Acknowledge report and inform candidate that JPM is complete.

Comment:

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-JPM.c

Task Title: Shutdown a Divisional EDG to Standby

K/A Reference: 264000.A4.04

Recommended Testing Method:

Simulate Actual X

Classroom Simulator X Plant

Task Standard: Division 2 EDG Shutdown in Pull-to-Lock, Field Flash bkr open.

Required Materials: SOI-R43, Division 1 and 2 Diesel Generator System, Section 6.1

General References: SOI-R43, Division 1 and 2 Diesel Generator System

Time Critical Task: NO

Validation Time: 15 minutes

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

Diesel Generator 2 has completed a four hour run for post maintenance testing. It has been disconnected from EH12, inspected, and is ready to be secured. There is a PPO standing by at the diesel to assist. He has been briefed on the procedure and expectations.

Initiating Cue:

Shut down Diesel Generator 2 to Standby Readiness in accordance with SOI-R43, Division 1 and 2 Diesel Generator System, Section 6.1, Remote - Shutdown to Standby Readiness.

NOTE

1. Provide candidate a copy of SOI-R43, Section 6.1, after candidate demonstrates knowledge of how to get procedure.

Start Time: _____

NOTE

If the applicant asks, voltage and speed are to be adjusted on DG shutdown to ensure operability.

The applicant may inform the U.S. that the Division 2 Diesel Generator will be unavailable for a non-LOCA restart for two to three minutes following shutdown due to a fuel rack lockout. Acknowledge this as the U.S.

The diesel unloading is to be done within the unloading limits listed in the Precautions and Limitations. It is not necessary to open the Diesel Turbo Prelube Oil Valve, 1R47-F544B

Step: 6.1.1 If diesel unloading was not within the unloading limits listed in the Precautions and Limitations then open the Diesel Turbo Prelube Oil Valve.

Standard: Asks examiner for unloading rate. The Diesel Turbo Prelube Oil Valve remains shut.

Cue: Diesel unloading was within limits.

Comment:

Step: 6.1.2 Verifies the (Div 2) Diesel Generator is in AUTO at 1H13-877.

Standard: Visually verifies the DG 2 is in Auto at 1H13-877.

Cue:

Comment:

Step: 6.1.3 Verifies the Diesel Generator Control Transfer Switch is in CONT RM.

Standard: Calls PPO and asks PPO to verify switch is in CONT RM.

Cue: As PPO report the switch is in CONT RM.

Comment:

* **Step:** 6.1.4.a-d Verifies the Diesel Gen Out of Service is in NORM.

Confirms the Diesel Gen Breaker (EH1201) green light is on.

If Preferred(Alternate) Source Breaker 1212(1213) is closed,
Places the Sync Selector Switch in TH1(TH21)

Standard: Places sync selector switch in TH1(TH21). (Critical part of this step)

Cue:

Comment:

* **Step:** 6.1.4.e-g Adjusts the diesel generator governor so the synchroscope is moving slow in the fast direction, places the sync selector switch in OFF.

Adjusts the Diesel Generator Voltage Regulator to read 4100 to 4200 Volts on DG A-B phase Volts.

Standard: Synchroscope rotating slowly in fast direction (critical part of this step). Sync selector switch in OFF. DG volts 4150 ± 50 volts.

Cue:

Comment:

- * **Step:** 6.1.5 Verify with PPO that DG Field Breaker Closed amber light is ON.
Standard: Contacts PPO to determine status of DG Field Breaker Closed amber light.
Cue: As PPO report "The DG Field Breaker Closed amber light is ON."
Comment:

- * **Step:** 6.1.6 Takes the Diesel Generator control switch to STOP at 1H13-P877.
Standard: DG control switch in STOP.
Cue:
Comment:

START ALTERNATE PATH PORTION OF JPM HERE!

- Step:** 6.1.7 Confirm the Diesel Generator Field Breaker CLOSED amber light is de-energized.
Standard: Contacts PPO to determine status of DG Field Breaker Closed amber light.
Cue: As PPO report "The DG Field Breaker Closed amber light is still ON."
Comment:

- Step:** 6.1.8 Initiates a Notification
Standard: Informs examiner of need to initiate notification.
Cue: Another operator will initiate the notification, continue with EDG shutdown.
Comment:

Step: 6.1.9 If Lockout Relay 86G is tripped, then confirm the cause of the trip is corrected. Reset Lockout Relay 86G on Diesel Generator Breaker.

Standard: Lockout Relay 86G is not tripped.

Cue: The Lockout Relay 86G is not tripped.

Comment:

Step: 6.1.10 If Lockout Relay 86G/1 is tripped. Confirm the cause of the trip is corrected and reset lockout relay 86G/1 on DG Breaker.

Standard: Lockout Relay 86G/1 is not tripped.

Cue: The Lockout Relay 86G/1 is not tripped.

Comment:

Step: 6.1.11 If the Diesel Turbo Prelube Valve is open, then close the Diesel Turbo Prelube Valve.

Standard: The Diesel Turbo Prelube Valve is shut.

Cue: The Diesel Turbo Prelube Valve is shut.

Comment:

Step: 6.1.12 & 6.1.12.a When the control system is reset, as evidenced by Unit Avail Emergency Status light illuminated approximately 2 minutes after shutdown, then confirm the Gen Field Amps and the Gen Field Volts are approximately zero.

Standard: Notes field is still energized.

Cue: As local operator inform the candidate that Gen Field Amps reads approx. 112 amps and the Gen Field Volts still reads 110 volts.

Comment:

- * **Step:** 6.1.12.b If the field is still energized then place diesel generator in PULL-TO-LOCK.
 - Standard:** Diesel Generator in PULL-TO-LOCK.
 - Cue:**
 - Comment:** Someone else will perform the required surveillance and will record appropriate Maintenance Rule status.

- * **Step:** 6.1.12.c If the field is still energized, then direct the PPO to open disconnect 27 at ED1B06 for Generator (Field Flash) Control Panel, 1H51-P055B.
 - Standard:** PPO is contacted & directed to open disconnect 27 at ED1B06 for Generator (Field Flash) Control Panel, 1H51-P055B.
 - Cue:** As PPO report that disconnect 27 at ED1B06 is open.
 - Comment:** Terminate JPM at this point.

This completes this JPM.

Stop time: _____

Simulator setup initial conditions:

Any conditions with the Diesel Generator disconnected from its bus.

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.d

Task Title: Place B RHR in Suppression Pool Feed and Bleed Mode

K/A Reference: 205000.K5.03

Recommended Testing Method:

Simulate X Actual

Classroom Simulator X Plant

Task Standard: RHR Lineup complete in Feed and Bleed mode, HX bypass & outlet valves throttled to control cooldown rate.

Required Materials: ONI-E12-2, Loss of Decay Heat Removal, Rev 6

General References: ONI-E-12-2, Loss of Decay Heat Removal, Rev 6

Time Critical Task: NO

Validation Time: 15 minutes

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

The reactor is in Mode 3 with the reactor head installed. The normal shutdown cooling lineup cannot be established and the Main Condenser is not available. Both RHR "A" and "B" loops are operating in the Suppression Pool Cooling mode.

Initiating Cue:

Establish Alternate Shutdown Cooling using the Suppression Pool Feed and Bleed method per ONI-E-12-2, "Loss of Decay Heat Removal" Attachment 2, starting at step 2.5. When directed by the procedure, use the "B" RHR pump for injection.

NOTE

With the given initial conditions, candidate should N/A Steps 2.0 through 2.4 of Attachment 2.

Start Time: _____

Step: 2.5.1 Notify Health Physics.

2.5.2 Notify Chemistry

Standard: Candidate notifies Health Physics and Chemistry of evolution

Cue: Health Physics and Chemistry have been notified.

Comment:

Step:2.5.3 Evacuate containment

Standard: Candidate orders containment to be evacuated

Cue: If requested, as Health Physics, you will have containment evacuated

Comment:

Step: 2.5.4 If RHR A or B loop is available, refer to SOI-E-12 to place one RHR loop in suppression pool cooling.

Standard: At least one of the RHR Loops is operating in the Suppression Pool Cooling mode.

Cue:

Comment: Per the initial conditions both RHR loops are already operating in the Suppression Pool Cooling mode.

Step:2.5.5 VERIFY the following valves CLOSED:
1B21F022A INBD MSIV 1B21F028A OUTBD MSIV
1B21F022B INBD MSIV 1B21F028B OUTBD MSIV
1B21F022C INBD MSIV 1B21F028C OUTBD MSIV
1B21F022D INBD MSIV 1B21F028D OUTBD MSIV
1B21F016 MSL DRN& MSIV BYP INBD ISOL
1B21F019 MSL DRN& MSIV BYP OUTBD ISOL
1B21-F001 RX HEAD TO DW SECOND VENT VALVE
1B21-F002 RX HEAD TO DW FIRST VENT VALVE
1B21-F005 RX HEADTO MSL A VENT VALVE
1E12-F008 SHUTDOWN COOLING OTBD SUCT ISOL
1E12-F009 SHUTDOWN COOLING INBD SUCT ISOL
1E12-F006A RHR A SHUTDOWN COOLING SUCT.
1E12-F006B RHR B SHUTDOWN COOLING SUCT.
1E51-063 RHR & RCIC ST SUPP INBD ISOL.
1E51-064 RHR & RCIC ST SUPP OUTBD ISOL.
1E51-076 RHR & RCIC ST SUPP WARMUP ISOL.

Standard: Candidate CLOSES/VERIFIES CLOSED the above valves.

Cue:

Comment:

C Step:2.5.6 IF the reactor vessel head is installed, THEN VERIFY OPEN two SRVs located outside the vicinity of the ECCS pump suction strainers. (Strainers between 324 and 54).

Standard: Candidate determines from initial conditions that RPV head is installed and OPENS/VERIFIES OPEN two SRVs outside the vicinity of the suction strainers.

Cue:

Comment: RHR A and B draw primarily from the northern half of the pool.

Step:2.5.7 If the reactor head is NOT installed, then CLOSE/VERIFY CLOSED
2.5.8 the following valves:

Standard: Candidate determines from initial conditions that RPV head IS installed then N/As steps 2.5.7. and 2.5.8

Cue:

Comment:

Step: 2.5.9 IF the second RHR loop is available, THEN REFER to SOI-E12 to PLACE the second RHR Loop in Suppression Pool Cooling.

Standard: Candidate recognizes that both RHR loops are already in Suppression Pool Cooling mode per Initiating Cue and marks step 2.5.9 N/A or condition met.

Cue:

Comment:

Step:2.5.10 If RHR C and LPCS are available, then refer to SOI-E-12 to start
2.5.11 RHR C and LPCS in the Test Mode.

Standard: Candidate asks SRO if RHR C and LPCS can be placed in the Test Mode

Cue: As SRO, you will have another operator place RHR C and LPCS in the Test Mode. Continue on with the procedure.

Comment:

Step:2.5.12 While cooling down the RPV, monitor temperature and pressure.

Standard: Candidate acknowledges step.

Cue: STE is performing SVI-B21-T1176

Comment:

Step:2.5.13 IF Only one RHR loop is in Suppression Pool Cooling AND Other Injection systems are available, THEN inject to the RPV with a system other than the RHR loop being used for suppression pool cooling.

Standard: Candidate recognizes that both RHR loops are already in Suppression Pool Cooling mode per Initiating Cue and marks step 2.5.13 N/A

Cue:

Comment:

Step:2.5.14 SELECT one of the following lineups to inject to the RPV

- RHR A or B, Step 2.5.15
- RHR C, Step 2.5.16
- LPCS, Step 2.5.17

Standard: Candidate chooses RHR B for injection per Step 2.5.15

Cue:

Comment:

C **Step:2.5.15** IF using RHR A or B, THEN THROTTLE the RHR HX'S OUTLET VALVE closed UNTIL RHR PUMP FLOW is 2500 gpm.

Standard: Candidate throttles 1E12-003B until RHR pump flow is 2500 gpm as indicated on 1E12-R603B.

Cue:

Comment:

C **Step:2.5.15a** Open the LPCI INJECTION VALVE.

Standard: Candidate OPENS 1E12F042B.

Cue:

Comment:

C **Step:** 2.5.15b CLOSE the RHR TEST VALVE TO SUPR POOL.

Standard: Candidate CLOSES 1E12-F024B valve.

Cue:

Comment:

C **Step:** 2.5.15c Simultaneously Throttle:
RHR HX's BYPASS VALVE 1E12-F048B
RHR HX's OUTLET VALVE 1E12-F003B
to control cooldown rate.

Standard: Candidate throttles F048B and F003B valves to establish a
cooldown rate of <100°F/hr.

Cue:

Comment: When the candidate reaches this step terminate the JPM.

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.e

Task Title: Establish a Vacuum in the Main Condenser with the Mechanical Vacuum Pumps

K/A Reference: 271000.A2.01

Recommended Testing Method:

Simulate Perform X

Classroom Simulator X Plant

Task Standard: Main Condenser vacuum is less than 12" HgA with one Mechanical Vacuum Pump in operation.

Required Materials: SOI-N64/62, Off-Gas/Condenser Air Removal System

General References: SOI-N64/62, Off-Gas/Condenser Air Removal System

Time Critical Task: NO

Validation Time: 15 minutes

Initial Conditions:

IC-63 or equivalent

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initiating Cue:

An inadvertent Main Steam Isolation has occurred. Recovery of the Main Condenser, as a reactor heat sink, is underway in accordance with Attachment 1 of IOI-7, Cooldown – Main Condenser Not Available. Reestablish a vacuum in the Main Condenser using the Mechanical Vacuum Pumps.

Start Time: _____

- Step: 4.2.1** Verify the following:
- a. Turbine Building Closed Cooling (P44) in service supplying cooling water to mechanical vacuum pumps, 1N62-C001A and 1N62-C001B.
 - b. Condensate System (N21) in service supplying makeup water to the mechanical vacuum pump's separator.
 - c. Condensate Seal System (P12) in service.
 - d. Sealing steam applied per SOI-N33 for each turbine that will have a vacuum established in its condenser.
 - e. If vacuum is to be drawn on Auxiliary Condenser A, verify AUX CNDR LEVEL CONT A, 1N21-R042, in AUTO and set at 11.75".
 - f. If vacuum is to be drawn on Auxiliary Condenser B, verify AUX CNDR LEVEL CONT B, 1N21-R102, in AUTO and set at 11.75".

Standard: Verifies that each of the above support systems is in service.

Cue: Condensate Seal System is in service.

Comment: a, b, e, & f are verifiable within the Main Control Room (Sim.)

- Step: 4.2.2** Isolate any condenser on which a vacuum is not to be drawn as follows:
- a. For the Main Condenser, close Main Condenser Loop A,B,C, and D Air Removal Suction valves 1N62-F501, F502, F503 and F504, and verify MAIN CONDENSER VENT VALVES, 1N62-F010A, 1N62-F010B, and 1N62-F010C, switch in OPEN.
 - b. For Auxiliary Condenser A(B), close Aux Cndr A(B) Air Removal Suct, 1N62-F522A(B), and open Aux Cndr A(B) Vac Brkr, 1N62-F538A(B).

Standard: Candidate marks this step N/A

Cue: If asked, As SRO reply that all condensers will be placed in service.

Comment:

Step: 4.2.3 When drawing a vacuum on the main condenser, verify MAIN CONDENSER VENT VALVES, 1N62-F010A, 1N62-F010B, and 1N62-F010C, switch in CLOSE.

Standard: Green light illuminated for all three vent valves.

Cue:

Comment:

Step: 4.2.4 Fill respective condenser seal trough per SOI-P12 to reseal the vent valves.

Standard:

Cue: Condenser seal troughs are filled.

Comment:

Step: 4.2.5 Notify chemistry of Mechanical Vacuum Pump startup.

Standard: Notifies Chemistry of impending Vacuum pump startup.

Cue: Chem Tech on station ready to obtain samples.

Comment:

- Step: 4.2.6** Take MECH VACUUM PUMP A(B), 1N62-C001A(B) control switch(es) to START. Confirm the following:
- a. Mechanical Vacuum Pump A(B) Seal Wtr Pump, 1N62-C003A(B) has started.
 - b. Mechanical Vac Pmp A(B) Clr Auto Isol., 1P44-F260A(B), has opened.
 - c. MECH VACUUM PMP A(B) SUCT VLV, 1N62-F130A(B) has opened.
 - d. If this is the first run of the Mechanical Vacuum Pumps when starting up from a Refueling then record information on Attachment 4 and forward to the responsible system engineer, PES.

- Standard:**
- a. Red lights illuminated for each pump started.
 - b. 1P44-F260A & B open.
 - c. Red lights illuminated for 1N62-F130A & B
 - d. Step Marked N/A

- Cue:**
- b. As PO report, "Mechanical Vac Pmp Clr Auto Isol Valves 1P44-F260A & B, are open."
 - d. As RSE report, "this is not the first start after refueling."

Comment:

- Step: 4.2.7** When main condenser pressure is less than 20" HgA and CNDR VACUUM LOW light is off, press the CNDR VACUUM RESET switch.

Standard:

- Cue:** This JPM is complete.

Comment:

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.f

Task Title: Respond to Stuck SRM during withdraw of Detectors

K/A Reference: 215004.A2.03

Recommended Testing Method:

Simulate Actual X

Classroom Simulator X Plant

Task Standard: SRM C Bypassed, I&C Tech sent to de-energize SRM C.

Required Materials: SOI-C51(SRM)

General References: SOI-C51(SRM))
IOI-2, Section 4.3

Time Critical Task: NO

Validation Time: 20 minutes

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

The reactor is in Hot Startup Mode per IOI-2, Section 4.3, "Hot Startup." Neutron flux is in Range 8/9 of the IRMs. Reactor engineers have confirmed a proper SRM/IRM overlap. The step to withdraw SRMs in IOI-2 was inadvertently skipped.

Initiating Cue:

Withdraw the SRMs in accordance with SOI-C51(SRM).

NOTE

1. All steps and indications are at Unit Control Console, 1H13-P680-6C.
2. Provide candidate a copy of SOI-C51 after candidate demonstrates knowledge of how to get procedure.

Start Time: _____

NOTE

Candidate may verify that RETRACT PERMIT light is backlit. This indicates that SRM counts are ≥ 100 cps and a rod block will NOT occur when the detector is withdrawn.

- * **Step: 1** (5.1.1) Momentarily depress POWER ON to energize the drives.

Standard: Candidate depress POWER ON pushbutton.

Cue:

Comment:

NOTE

Candidate may select and withdraw SRMs individually or in groups of two or more. It is an Operations Department expectation that all four of the SRMs will not be withdrawn at the same time.

- * **Step: 2** (5.1.2) Select all SRM detectors by momentarily depressing the following pushbuttons:

SRM A SELECT,	SRM B SELECT,
SRM C SELECT,	SRM D SELECT.

Standard: Candidate depresses all SRM select pushbuttons.

Cue:

Comment:

START ALTERNATE PATH PORTION OF JPM HERE!

NOTE

SRM C will stick about half withdrawn. Candidate should recognize that SRM C count rate does not change during withdraw indicating a that SRM C is stuck.

- * **Step: 6** Candidate verifies that SRM C is stuck.
Standard: Candidate verifies that SRM C is stuck.
Cue: As SRO, you concur with candidates conclusion that SRM C is stuck. Ask candidate for suggestions.
Comment: Section 7.3 of SOI-C51 gives instructions for stuck SRM detector.

- * **Step: 7** Candidate suggests entering SOI-C51, Section 7.3, "Stuck SRM Detector."
Standard:
Cue: SRO concurs with decision to enter Stuck SRM detector procedure.
Comment:

- Step: 8 (5.7.3)** Verify power available to the detector drive monitor as follows:
 - a. The POWER ON pushbutton is backlit green.
 - b. Disc 27; SRM & IRM DRIVE CONTROL CABINET, 1H22-P008, closed at Dist. Panel F1E14.
 - c. Drive fuses intact at 1H22-P008**Standard:** Candidate verifies power available to detector drive motor.
Cue: As field operator, report that Disc 27 at Dist. Panel F1E14 is closed and drive fuses at 1H22-P008 are intact.
Comment: Candidate should verify that step a above is met.

- Step: 9 (5.7.4)** Attempt to drive detector in the opposite direction.
1. Momentarily depresses SELECT PB or verifies SRM C still selected.
 2. Momentarily depresses DRIVE IN/DRIVING IN PB.

Standard: Candidate drives SRM C detector back to its full in position by selecting/verify selected SRM C and inserting SRM C.

Cue:

Comment: Simulator will NOT allow SRM C to fully insert to original position.

- * **Step: 10 (5.7.5)** Bypass SRM C to prevent a rod block/reactor trip by placing NEUTRON MONITOR BYPASS switch, 1C51A-S5, at Unit Control Console, 1H13-P680, in the to CH C position.

Standard: Candidate bypasses SRM C

Cue: If required, reactor engineer states to leave SRM in half withdrawn position in lieu of fully inserting.

Comment: Candidate to use section 7.1 of SOI-C51 procedure.

- * **Step: 11 (5.7.6)** Directs I&C to de-energize high voltage power supply.

Standard: Contacts I&C to de-energize high voltage power supply to SRM C.

Cue: As I&C Supervisor, I will send techs to Control room to be briefed on de-energizing SRM C high voltage power supply.

Comment:

This completes this JPM.

Stop time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.g

Task Title: Start RHR Pump “B” in Suppression Pool Cooling

K/A Reference: 219000.K3.01

Recommended Testing Method:

Simulate Actual X

Classroom Simulator X Plant

Task Standard: RHR B is operating in the Suppression Pool Cooling mode.

Required Materials: SOI-E12 Attachment 52, Suppression Pooling Cooling Startup from Standby Hard Card.

General References: SOI-E12, Residual Heat Removal System
JPM E12-03

Time Critical Task: NO

Validation Time: 5 minutes

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

The plant was at 100% power when 1B21F051A inadvertently opened. Actions have been taken in accordance with ONI-B21 SRV INADVERTENT OPENING / STUCK OPEN. Currently, the plant is being operated in accordance with IOI-3 and PEI-T23. ESW loop B and ECC B are in service.

Initiating Cue:

Place RHR “B” in Suppression Pool Cooling as directed by PEI-T23. Use of “Hard Card” is authorized.

Start Time: _____

Step: 1 IF necessary, **THEN TAKE** ESW PUMP A(B), 1P45-C001A(B) control switch to START.

Standard: Identifies that ESW loop B was lined up per initial condition.

Cue: If asked, tell candidate to review initial conditions.

Comment:

Step: 2 IF necessary, **THEN TAKE** ECC PUMP A(B), 1P42-C001A(B), control switch to START.

Standard: Identifies that ECCS loop B was lined up per initial condition.

Cue: If asked, tell candidate to review initial conditions.

Comment:

* **Step: 3** Close RHR A(B) HX'S BYPASS VALVE, 1E12-F048B, by holding its control switch in CLOSE.

Standard: Candidate closes F048B valve.

Cue:

Comment:

* **Step: 4** Throttle RHR A(B) HX'S OUTLET VALVE, 1E12-F003B, by holding its control switch in CLOSE for 18 to 20 seconds.

Standard: Operator throttles 1E12-F003B closed for 18 to 20 seconds.

Cue:

Comment:

* **Step: 5** Take RHR PUMP B, 1E12-C002B, control switch to START.

Standard: Candidate starts B RHR pump. Observes amps and discharge pressure.

Cue:

Comment:

* **Step: 6** Take RHR B Test Valve to Supr Pool, 1E12-F024B control switch to open.

Standard: Candidate OPENS F024B valve.

Cue:

Comment:

Step: 7 WHEN RHR B PUMP FLOW, 1E12-R603B, is greater than 1650 gpm, THEN verify RHR PUMP B MIN FLOW VALVE, 1E12-F064B, closes

Standard: Candidate verifies F064B valve closes when flow rate greater than 1650 gpm.

Cue:

Comment: RHR B PUMP FLOW, 1E12-R603B, should stabilize between 6000 and 7000 gpm.

* **Step: 8** Throttle RHR B HX'S OUTLET VALVE, 1E12-F003B, until RHR B PUMP FLOW, 1E12-R603B, is 7100-7300 gpm.

Standard: Candidate throttles F003B valve until 7100 - 7300 gpm flow rate is established with F024B valve full open.

Cue:

Comment:

Step: 9 IF Alternate Keep Fill was in use. THEN Perform Alternate Keep Fill Shutdown

Standard: Candidate N/As step.

Cue: Alternate Keep Fill was not in use.

Comment:

Step: 10 Refer to Suppression Pool Cooling/Test Mode Operations for RHR A(B).

Standard:

Cue: Another Operator will continue to operate RHR pump B in Suppression Pool Cooling. This JPM is complete.

Comment: (Section 5.3 of SOI-E12)

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.h

Task Title: Attempt to Close a Stuck Open SRV

K/A Reference: 239002.A2.01

Recommended Testing Method:

Simulate Actual X

Classroom Simulator X Plant

Task Standard: Close SRV by removing fuses

Required Materials: ONI-B21-1, SRV Inadvertent Opening/Stuck Open

General References: ONI-B21-1, SRV Inadvertent Opening/Stuck Open

Time Critical Task: NO

Validation Time: 10 minutes

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

1B21F051A is stuck open, Division 1 solenoid light is energized, tail pipe temperature is rising, suppression pool level and temperature slowly rising. ONI-B21-1, SRV Inadvertent Opening/Stuck Open, has been entered. The Containment has been evacuated and Reactor Power has been reduced to less than 90% RTP.

Initiating Cue:

Perform the remaining immediate actions, of ONI-B21-1, and the supplemental actions needed to close SRV 1B21F051A.

NOTE

Steps 3.1 and 3.2 have been addressed from initial conditions.

Start Time: _____

Step: 3.3 ATTEMPT to close the SRV 1B21F051A by placing both of the associated SRV control switches from AUTO to OFF at the following panels:

- ECCS Benchboard (1H13-P601.)
- ADS Relay Panel Division 2 (1H13-P631.)

Standard: Places both SRV control switches from AUTO to OFF

Cue:

Comment: Candidate should recognize that SRV 1B21F051A has NOT closed.

COMMENCE ALTERNATE PATH PORTION OF JPM

Step: 4.1 CYCLE the associated SRV control switch at 1H13-P601 in the following sequence:

- 4.1.1 **PLACE** control switch in AUTO
- 4.1.2 **PLACE** control switch in OPEN
- 4.1.3 **PLACE** control switch in AUTO
- 4.1.4 **PLACE** control switch in OFF

Standard: Candidate places SRV 1B21F051A control switch in AUTO, OPEN, AUTO then OFF positions.

Cue:

Comment: Candidate should recognize that SRV 1B21F051A has NOT closed.

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.i

Task Title: Vent the Primary Containment through RHR

K/A Reference: 223001.A2.06

Recommended Testing Method:

Simulate X Perform

Classroom Simulator Plant X

Task Standard: Steps 5.1 & 5.6 of PEI-SPI 7.1 complete; step 2.1.4 of PEI-SPI 7.4 complete.

Required Materials: PEI-SPI 7.1 and PEI-SPI 7.4

General References: PEI-SPI 7.1 and PEI-SPI 7.4

Time Critical Task: NO

Validation Time: 45 minutes

Initial Conditions: N/A

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initiating Cue:

You have been assigned to support venting of the Containment through RHR Containment Spray Loop A. RHR A is shutdown and is NOT required to maintain adequate core cooling. Steps 1.0 through 4.8 of PEI-SPI 7.1, Preparation for Containment Venting, have already been completed. Perform steps 5.1 and 5.6 of PEI-SPI 7.1 then contact the Main Control Room (steps 5.2 through 5.5 will be completed by Main Control Room personnel). When directed by the Main Control Room perform step 2.14 of PEI-SPI 7.4, RHR Containment Venting.

Start Time: _____

Step: 1 Proceeds to OSC PEI File Cabinet (CC 599' D/01) and simulates obtaining the GOG and Valve Lock keys.

Standard: Simulates obtaining one IB GOG key, one P54 valve lock key, and one pair of wire cutters.

Cue:

Comment:

- * **Step: 5.1** (PEI-SPI 7.1) **IF** FHB Southeast Man-door IB 316 is **NOT** open, **THEN AT** FHB 620' M/10, outside southeast corner of the FHB, **PERFORM** the following to open FHB Southeast Man-door IB-316:
- .1 UNLOCK and OPEN FHB Southeast Man-door IB-316.
 - .2 SECURE FHB Southeast Man-door IB-316 open using the pre-staged PEI cinder block.

Standard: Locates cinder block and simulates opening FHB Southeast Man-door IB-316.

Cue: When the applicant completes the step correctly, "The door is open."

Comment: Door may be also opened from the inside.

NOTE TO EVALUATOR

Steps 5.2 through 5.5 of PEI-SPI 7.1 are not applicable to this JPM.

- * **Step: 5.6** (PEI-SPI 7.1) **AT** IB 599' J/08, **UNLOCK** and **OPEN** FPCC to Unit 1 RHR Supply Isol G41-F559A.

Standard: G41-F559A simulated open.

Cue: When the applicant completes the step correctly, G41-F559A is open.

Comment:

CUE

When the Main Control Room is contacted, inform the candidate that steps 1.0 through 2.13 of PEI-SPI 7.4 have been completed and to continue with step 2.14 of PEI-SPI 7.4.

NOTE TO EVALUATOR

This step requires a ladder to complete. If requested, you will also act as RP support (climbing above 6 ft.).

- * **Step:** 2.14 (PEI-SPI 7.4) **AT** AX 599' C/07(C/03), above the RHR A(B) HX Room door, **UNLOCK** and **OPEN** RHR A(B) FPCC Supplement Cooling Discharge Vlv 1E12-F099A(B).

Standard: RHR A FPCC Supplement Cooling Discharge Valve 1E12-F099A simulated open.

Cue: When the applicant completes the step correctly, "1E12-F099A is open."

Comment: End of JPM.

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry

JPM No: 2004-301-2.j

Task Title: Shed Non-essential DC Loads

K/A Reference: 295003.A1.04

Recommended Testing Method:

Simulate X Perform

Classroom Simulator Plant X

Task Standard: Completion of Steps 1.1 through 1.6 of ONI-SPI D-2.

Required Materials: ONI-SPI D-2, Non-Essential DC Loads

General References: ONI-SPI D-2, Non-Essential DC Loads

Time Critical Task: NO

Validation Time: 20 minutes

Initial Conditions: N/A

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initiating Cue:

A Station Blackout has occurred. Division 1 Emergency Diesel Generator has sustained severe damage and will not be available for several days. Preparations are underway to restore Division 2 Emergency Diesel Generator to service. De-energize non-essential DC loads in accordance with section steps 1.1 through 1.6, of ONI-SPI D-2.

NOTE TO EVALUATOR

To limit the time for completion of this JPM, only the first four steps of attachment D-2 are performed. If asked about the remaining steps, inform the candidate that another operator has been assigned to complete them.

Start Time: _____

* **Step: 1.1** **VERIFY** the following Brkrs OPEN at Distribution Panel ED1A06 (CC 638): Disc. 1, Disc 2, Disc 14, Disc 16, Disc 22, and Disc 26.

Standard: Simulates opening Disc. 1, Disc 2, Disc 14, Disc 16, Disc 22, and Disc 26 at Distribution Panel ED1A06 (CC 638).

Cue:

Comment:

* **Step: 1.2** **IF** it has been determined that the Div. 1 Diesel Generator cannot be made operational, **THEN** at Distribution Panel ED1A06 (CC 638), **VERIFY** the following disconnects OPEN:

Standard: Simulates opening Disc 9, Disc 11, Disc 12, and Disc 28 at Distribution Panel ED1A06 (CC 638).

Cue: If asked about Division 1 Diesel Generator status, report back that Division 1 Diesel Generator damaged and will not be available for several days.

Comment:

* **Step: 1.3** **VERIFY** the following Brkrs OPEN at 120V AC Vital Distribution Panel V-1-A (CC 638 Behind Unit 1 Computer Room): Disc 1, Disc 3, Disc 9, Disc 10, Disc 11, Disc 14, and Disc 20.

Standard: Simulates opening Disc 1, Disc 3, Disc 9, Disc 10, Disc 11, Disc 14, and Disc 20 at 120V AC Vital Distribution Panel V-1-A (CC 638 Behind Unit 1 Computer Room).

Cue: If asked whether to de-energize the Maintenance and Calibration System (Disc 20), report back that the Maintenance and Calibration System is not needed for operations at this time.

Comment:

* **Step: 1.4** **VERIFY** the following Brkrs OPEN at Distribution Panel ED1B06 (CC 638): Disc 26.

Standard: Simulates opening Disc 26 at Distribution Panel ED1B06 (CC 638).

Cue:

Comment:

* **Step: 1.5** **IF** it has been determined that the Div. 2 Diesel Generator cannot be made operational, **THEN** at Distribution Panel ED1B06 (CC 638), **VERIFY** the following disconnects OPEN:

Standard: No disconnects are opened on this step, since Div DG can be made operational.

Cue: If asked about Division 2 Diesel Generator status, report back that preparations for starting Division 2 Diesel Generator are in progress.

Comment:

* **Step:** 1.6 **VERIFY** the following Brkrs OPEN at Distribution Panel ED1B08 (CC 638): Disc 1, Disc 2, Disc 14, Disc 16, and Disc 26.

Standard: Simulates opening Disc 1, Disc 2, Disc 14, Disc 16, and Disc 26 at Distribution Panel ED1B08 (CC 638).

Cue: When step is complete inform candidate that the JPM is complete.

Comment:

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____

Facility: Perry **JPM No:** 2004-301-2.k

Task Title: Place a Nuclear Closed Cooling Water Heat Exchanger in Service.

K/A Reference: 400000.A2.03

Recommended Testing Method:

Simulate X Perform

Classroom Simulator Plant X

Task Standard: NCC Heat Exchanger is simulated being placed into service.

Required Materials: SOI-P43, Nuclear Closed Cooling System

General References: SOI-P43, Nuclear Closed Cooling System

Time Critical Task: NO

Validation Time: 45 minutes

Initial Conditions: N/A

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initiating Cue:

A plant startup is in progress. NCC Heat Exchanger B was removed from service due to low heat load, but heat loading has now increased. Maintenance has reinstalled the access port end bell covers and the tagout has been cleared. Barrels have been staged in the NCC Heat Exchanger Room for collection of water vented from the heat exchanger. Place NCC Heat Exchanger B in service.

Start Time: _____

Step: 5.3.1 If NCC Hx C(A,B) SW Inlet, P41-F523C(A,B), is closed, fill and vent the Service Water side of NCC Heat Exchanger C(A,B) as follows:

Standard: Simulates checking closed P41-F523B.

Cue: If CW rotation is simulated, indicate that no valve movement is observed.

Comment: Step "5.3.1.a" is completed per initiating cue.

Step: 5.3.1.b Verify NCC Hx C(A,B) SW Drain, P41-F526C(A,B), is closed.

Standard: Simulates closing P41-F526B.

Cue: If CW rotation is simulated, valve movement is indicated. After several turns, indicate no further valve movement is observed.

Comment:

Step: 5.3.1.c Verify NCC Hx C(A,B) SW Vent, P41-F525C(A,B), is closed.

Standard: Simulates closing P41-F525B.

Cue: If CW rotation is simulated, valve movement is indicated. After several turns, indicate no further valve movement is observed.

Comment: This valve is on top of the HX and would require a ladder to gain access to the valve.

- * **Step:** 5.3.1.d Slowly open NCC Hx C(A,B) SW Inlet, P41-F523C(A,B).
- Standard:** Simulates throttling open of P41-F523B then fully opens valve when flow noise ceases.
- Cue:** If CCW rotation is simulated, then valve movement is indicated and flow noise is heard (the amount of flow noise will increase then diminish as the valve is opened further). When satisfied that the candidate has demonstrated appropriate caution in opening the valve, inform the candidate that several minutes have passed and that the flow noise has ceased. After candidate simulates full opening of valve, indicate that the valve is full open.

Comment:

- Step:** 5.3.1.e Vent the NCC Hx through NCC Hx C(A,B) SW Vent, P41-F525C(A,B), until air free water appears then close the valve.
- Standard:** 1. Simulates connection of a hose to route water to the collection barrel staged earlier.
2. Simulates opening of P41-F525B, waiting for air free water, then closing of P41-525B.
- Cue:** After CCW rotation is simulated, indicate that air is issuing from the end of the hose and, after indicating that several minutes have passed, that a solid stream of water is flowing from the vent line. After CW rotation is simulated, indicate water flow has ceased and that no further valve movement is observed.

Comment:

- Step:** 5.3.2 If NCC Hx C(A,B) Inlet Isolation, P43-F529C(A,B), is closed, unisolate the NCC side of NCC Heat Exchanger C(A,B) as follows:
- Standard:** Simulates checking closed P43-F529B.
- Cue:** If CW rotation is simulated, indicate no valve movement is observed.

Comment:

Step: 5.3.2.a Verify NCC Hx C(A,B) Drain, P43-F523C(A,B), is closed.

Standard: Simulates closing P43-F523B.

Cue: If CW rotation is simulated, valve movement is indicated. After several turns, indicate no further valve movement is observed.

Comment:

Step: 5.3.2.b Verify NCC Hx C(A,B) Vent, P43-F519C(A,B), is closed.

Standard: Simulates closing P43-F519B

Cue: If CW rotation is simulated, valve movement is indicated. After several turns, indicate no further valve movement is observed.

Comment: This valve is on top of the HX and would require a ladder to gain access to the valve.

* **Step:** 5.3.2.c Slowly open NCC Hx C(A,B) Inlet Isolation, P43-F529C(A,B).

Standard: Simulates throttling open of P43-F529B then fully opens valve when flow noise ceases.

Cue: If CCW rotation is simulated, then valve movement is indicated and flow noise is heard (the amount of flow noise will increase then diminish as the valve is opened further). When satisfied that the candidate has demonstrated appropriate caution in opening the valve, inform the candidate that several minutes have passed and that the flow noise has ceased. After candidate simulates full opening of valve, indicate that the valve is full open.

Comment:

Step: 5.3.3 Open NCC Hx C(A,B) Vent, P43-F519C(A,B), until a solid stream of water issues from the vent, then close the valve and reinstall the cap.

- Standard:**
1. Simulates connection of a hose to route water to the a suitable drain location.
 2. Simulates opening of P43-F519B, waiting for air free water, then closing of P43-519B.

Cue: After CCW rotation is simulated, indicate that air is issuing from the end of the hose and, after indicating that several minutes have passed, that a solid stream of water is flowing from the vent line. After CW rotation is simulated, indicate water flow has ceased and that no further valve movement is observed.

Comment:

* **Step: 5.3.4** At local panel 1H51-P1151, verify HEAT EXCHANGER OUTLET TEMPERATURE CONTROLLER, P43-R045C(A,B), set at the desired temperature within the limits of P&L 2.0.5.

Standard: Simulates setting temperature controller to approximately 85°F.

Cue: Indicate a setpoint of approximately 70°F.

Comment: Controller is located inside the HX room on the wall opposite of the entrance.

* **Step: 5.3.5** Open NCC Hx C(A,B) Outlet Isolation, P43-F530C(A,B).

Standard: Simulates opening of P43-F530B.

Cue: If CCW rotation is simulated, then valve movement is indicated and flow noise is heard (the amount of flow noise will diminish as the valve is opened further). When satisfied that the candidate has demonstrated appropriate caution in opening the valve, inform the candidate that no further valve movement is observed.

Comment:

* **Step:** 5.3.6 Open NCC Hx C(A,B) SW Outlet, P41-F527C(A,B).

Standard: Simulates opening of P41-F527B.

Cue: If CCW rotation is simulated, then valve movement is indicated and flow noise is heard (the amount of flow noise will diminish as the valve is opened further). When satisfied that the candidate has demonstrated appropriate caution in opening the valve, inform the candidate that no further valve movement is observed.

Comment: P41-F527B is located in the overhead, one floor below the NCC Hx Room.

Step: 5.3.7 Notify Chemistry to ensure NCC water chemistry is within specified limits.

Standard: Simulates notifying chemistry.

Cue: Acknowledge notification.

Comment:

Stop Time: _____

Examinee: _____ SRO/RO (circle one)

Examiner: _____

Date Performed: _____

Start Time: _____ Stop: _____ Time to Complete: _____

Follow-up Questions: (Include Question and Response)

Result: Satisfactory/Unsatisfactory (circle one)

Examiner's Signature: _____ Date: _____