

INITIAL SUBMITTAL OF THE WALKTHROUGH JPMS
FOR THE PERRY INITIAL EXAMINATION - MARCH 2002

Facility: Perry **Task No:** 202-547-01-01
202-511-01-01

Task Title: Shift Recirculation Pump B
from Slow Speed to Fast
Speed and Raise Reactor
Power using Recirculation
Flow (Alt. Path). **JPM No:** 2002 NRC S1

K/A Reference: 202001 A1.07, A1.08, A4.01
202002 A1.07, A1.08, A4.08

Examinee:

NRC Examiner:

Facility N/A
Evaluator:

Date:

Method of testing

**Simulated
Performance**

**Actual
Performance**

In simulator

Classroom

Simulator

Plant

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:	A plant startup is in progress. Recirc Pump A has just been transferred from slow to fast speed in accordance with SOI-B33, Reactor Recirculation System, Section 5.1, Steps 1 through 7.
Task Standard:	Recirculation Flow Control Valve A is responding following failure to open from minimum position <u>or</u> HPU A is shutdown.
Required Materials:	SOI-B33, Rev. 6, PIC 15
General References:	SOI-B33, Rev. 6, PIC 15
Initiating Cue:	<p>The Unit Supervisor, with concurrence from Reactor Engineering, directs you, as the Reactor Operator, to transfer Recirc Pump B from slow to fast speed and raise core flow to 55×10^6 LBM/HR in accordance with SOI-B33.</p> <p>Raise Recirculation flow by simultaneously operating the Recirc Loop A and B Flow Control slide switches using 2 second bumps.</p>
Time Critical Task:	NO
Validation Time:	30 minutes

(Denote Critical Steps with an asterisk *)

Cue: If requested, inform candidate you will provide SRO oversight for the reactivity manipulation.

Cue: If a reactivity brief is requested, restate the initiating cue, inform candidate you will provide SRO oversight for the reactivity manipulation, and direct the candidate to discuss possible problems and contingencies.

Performance Step: 5.1.8 Transfer RCIRC PUMP B, 1B33-C001B, from slow to fast speed by reperforming Steps 2 through 7 for Rcirc Pump B.

Standard: Returns to Step 5.1.2 for Recirc Pump B.

Comment:

Performance Step: 5.1.2 Verify CBs 3B and 4B are closed.

Standard: Confirms CBs 3B and 4B are closed.

Comment:

Performance Step: 5.1.3 Take the CAVITATION/FCV LIMIT RCIRC RESET switch, 1B33-S111, to A then to B.

Standard: Take the CAVITATION/FCV LIMIT RCIRC RESET switch, 1B33-S111, to A then to B.

Verifies white lights are out and alarms are clear.

Comment: Candidate should read the note and check the lights. This step is not critical because it was previously performed prior to shifting Recirc Pump A to fast speed.

Performance Step:
5.1.4

If the following conditions are met:

- ICS Computer point N27ME008, Total Rx Feedwater Flow (suct-recirc), indicates ≥ 3.43 Mlbm/hr, and
- ICS Computer point C34EA013, Total Rx Steam flow, indicates ≥ 3.1 Mlbm/hr, and
- The CAVITATION/FCV LIMIT RCIRC RESET lights are not reset, and
- Reactor Engineer recommends no further increase in reactor power prior to transferring to fast speed, and
- Reactor Engineer recommends bypassing the power interlock.

Then place the following switches in BYPASS on Auxiliary Relay Panel, 1B33-P001A and B:

- a. POWER INTERLOCK, 1B33-S126A and B.

Note: If the lights did not reset in Step 3 above, they will reset when the following step is done.

- b. TOTAL FEEDWATER LOW FLOW INTERLOCK, 1B33-S127A and B.

Standard:Determines Steps 4a and 4b are not required.**Comment:**NOTE

- The valve position permissive may not initiate at a flow control valve position of 10%. Adjusting the valve (between 8% and 10%) while monitoring terminal point 95 on Rack 2 in 1H13-P634 and ground for A and terminal point 103 and ground on Rack 2 in 1H13-P634 for B for a positive voltage will confirm when the permissive is met.

Cue: Inform the candidate that I&C is not available to monitor for positive voltage and that he is to continue the task.

- The flow control valve may not open from 8% while in fast speed operation. If this occurs, proceed to Recovery From Failure to Open Flow Control from Minimum Position.

- * Performance Step:** 5.1.5 Operate RCIRC LOOP B FLOW CONTROL, 1B33-K603B, slide switch on P680 to obtain $\leq 10\%$ VALVE TRAVEL.
- Standard:** Operates 1B33-K603B slide switch to obtain $\leq 10\%$ valve position.
- Comment:** Operations Section expectation is to not lock the slide switch in the fast detent position.
- Cue:** If requested, direct the candidate to reposition FCV B to the 9% open position.
- Performance Step:** 5.1.6a If RCIRC B TEMP INTERLOCK is locked in, perform SVI-B33-T1168, Idle Recirculation Loop Temperature and Flow.
- Standard:** Determines step is not applicable because the alarm is not locked in.
- Comment:** Note: During slow to fast speed transfer, annunciator E2 on 1H13-P870-1A, Bus H12 BREAKER TRIP will be received due to 1B Breaker trip.
- * Performance Step:** 5.1.7 Take RCIRC PUMP B BRKR 5B control switch on P680 to START and verify the following:
- LFMG B SUPPLY BRKR 1B and LFMG B OUTPUT BRKR 2B on P680 open.
 - RCIRC PUMP B BRKR 5B on P680 closes and RCIRC B PUMP SPEED, 1B33-R651B, increases to 1800 RPM.
- Standard:** Takes RCIRC PUMP B BRKR 5B control switch on P680 to START.
- Confirms LFMG B SUPPLY BRKR 1B and LFMG B OUTPUT BRKR 2B open. Verifies RCIRC PUMP B BRKR 5B closes and RCIRC PUMP B SPEED increases to 1800 RPM.
- Comment:** Candidate may announce expected alarm H13-P870-1 (E2).

- Performance Step:** Transfer RCIRC PUMP A(B), 1B33-C001A(B), from slow to fast
5.1.8 speed by reperforming Steps 2 through 7 for RCIRC PUMP A(B).
- Standard:** Determines no operator action is required.
- Comment:** **Recirc Pump A and B have already been transferred to fast speed.**
- Performance Step:** After the transfers are complete, reset bus H11 and H12 breaker trip
5.1.9 annunciators by taking LFMG A and B SUPPLY BRKR 1A and B control switches to TRIP then back to NORM.
- Standard:** Takes LFMG A SUPPLY BRKR control switch to TRIP and back to NORM.
Takes LFMG B SUPPLY BRKR control switch to TRIP and back to NORM.
- Comment:** Note: Candidate may announce expected alarm H13-P870-1 (E1) and (E2) are reset.
- Note: It may be necessary to increase reactor power per IOI-3 prior to performing the following step.

- Performance Step:**
5.1.10
- When ICS Computer point N27ME009, Total Rx Feedwater Flow (venturi), indicates consistently > 3.43 Mlbm/hr:
- a. Verify Recirc Flow Control Cavitation Runback is reset.
 - b. Verify Feedwater Cavitation Interlock relay contacts closed at 1H13P612, card 1C34K618A(B) as follows:

Terminals 9 & 10
Terminals 13 & 14
 - c. Place the following switches in NORMAL on Auxiliary Relay Panel, 1B33-P001A and B:

1) POWER INTERLOCK, 1B33-S126A and B.
2) TOTAL FEEDWATER LOW FLOW INTERLOCK, 1B33-S127A and B.
- Standard:** Determines no action is required for step b.
- Comment:** **Cue:** As the Unit Supervisor, inform the candidate that Step 5.1.10 is not required to be performed because Step 5.1.4 was not performed earlier.
- Performance Step:**
5.1.11
- Perform independent verification of required components.
- Standard:** Performs independent verification of required components.

Requests second individual to complete the independent verification.
- Comment:** **Cue:** Inform the candidate that the independent verification check is completed.
- Note:** Candidate proceeds to SOI-B33, Section 5.3 in order to increase core flow to 55×10^6 lbm/hr.
- Note:** The following step will require the candidate to perform the alternate path.

* Performance Step: 5.3.1	With RCIRC LOOP A and B FLOW CONTROL, 1B33-K603A and 1B33-K603B, in MAN on the Unit Control Console, 1H13-P680, operate the slide switches to adjust loop flows as required.
Standard:	<p>Raises core flow by simultaneously operating both Recirc Loop A and B Flow Control slide switches using 2 second bumps (as directed in the JPM cue).</p> <p>Candidate observes that FCV A did not move.</p>
Comment:	<p>Note: This step may require several core flow adjustments before the candidate is able to determine Recirc Flow Control Valve A is not moving.</p> <p>Cue: If candidate recommends additional core flow adjustments to confirm the failure, direct the candidate to raise Recirculation flow by operating the Recirc Loop A Flow Control slide switch using a 2 second bump.</p> <p>Note: Candidate should proceed to SOI-B33, Section 7.9.</p> <p>Cue: If candidate asks for direction upon recognition of FCV A failure to move, then ask for his recommendation.</p> <p>Cue: If candidate recommends suspending the evolution:</p> <ul style="list-style-type: none">• State that you have discussed the situation with the Shift Manager, Reactor Engineering, and Operations Management, and inform the candidate the startup will continue.• Then ask the candidate what course of action is recommended to allow the startup to continue.• Candidate should recommend using SOI-B33, Section 7.9. <p>Cue: If candidate requests a briefing prior to performing SOI-B33, Section 7.9, then direct the candidate to lead the brief.</p>

-
- | | |
|--|--|
| * Performance Step:
7.9.1 | Prior to adjusting HPU pressure in any of the subsequent steps verify Servo Error is 0%. |
| Standard: | Takes Flow Controller B33-K603A to lower position until Servo Error indicates 0% on B33-K603A Servo Error indicator. |
| Comment: | |
-
- | | |
|--|---|
| * Performance Step:
7.9.2.a | <p>If Loop A FCV failed to open:</p> <p>Increase the pressure setting of HPU 1B33-D003A, Subloop 1, as read on local gauge 1B33-R708A, to 2000 psig by adjusting HPU A Subloop 1 Pump Discharge Relief, 1B33-F587A.</p> |
| Standard: | Directs NLO to raise pressure to 2000 psig or directs NLO to perform SOI-B33, Section 7.9.2.a for HPU A Subloop 1. |
| Comment: | <p>Cue: If asked, NLO will report an initial pressure of 1900 psig.</p> <p>Cue: NLO reports pressure has been raised to 2000 psig.</p> <p>Note: Verify that the Simulator Driver has deleted Malfunction TH23A before Step 7.9.2.b is performed by the candidate.</p> <p>Note: When the malfunction is deleted, candidate may observe several small servo error oscillations and take conservative action to shutdown the HPU and lockup Recirc Flow Control Valve A.</p> |
-
- | | |
|--|---|
| * Performance Step:
7.9.2.b | <p>Increase the VALVE TRAVEL of the control valve using the slide switch of RCIRC LOOP A FLOW CONTROL, 1B33-K603A, on P680.</p> |
| Standard: | <p>Operates 1B33-K603A slide switch to increase valve travel.</p> <p>Determines Recirc FCV A is responding and informs the Unit Supervisor.</p> |
| Comment: | <p>Note: SRO oversight required for this action.</p> |

Performance Step: 7.9.2.c If the flow control valve still will not open, consult the Shift Supervisor and, at his direction, increase HPU pressure up to a maximum of 2100 psig in 50 psig steps.

Standard: No action is required.

Comment:

Performance Step: 7.9.2.d Increase the VALVE TRAVEL of the control valve using the slide switch of RCIRC LOOP A FLOW CONTROL, 1B33-K603A.

Standard: No action is required.

Comment:

* **Performance Step:** 7.9.2.e Restore the pressure setting of HPU 1B33-D003A, to 1850-1950 psig.

Standard: Directs NLO to restore pressure setting to 1850 to 1950 psig.

Comment: Cue: NLO reports pressure setting restored to 1900 psig.

Cue: Inform candidate core flow adjustments will be suspended until management has reviewed all issues concerning the sticking Recirc Flow Control Valve A.

Note: This step is critical only if the candidate does not shutdown the HPU to lockup the Recirc Flow Control Valve.

Terminating Cue:

When SOI-B33, Section 7.9.2 is completed or HPU A has been shutdown, the evaluation for this JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No. 2002 NRC S1

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator: N/A

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

JPM CUE SHEET

INITIAL
CONDITIONS:

A plant startup is in progress. Recirc Pump A has just been transferred from slow to fast speed in accordance with SOI-B33, Reactor Recirculation System, Section 5.1, Steps 1 through 7.

INITIATING CUE:

The Unit Supervisor, with concurrence from Reactor Engineering, directs you, as the Reactor Operator, to transfer Recirc Pump B from slow to fast speed and raise core flow to 55×10^6 LBM/HR in accordance with SOI-B33.

Raise Recirculation flow by simultaneously operating the Recirc Loop A and B Flow Control slide switches using 2 second bumps.

Facility: Perry **Task No:** 201-565-05-01

Task Title: CRD Pump Alternate
Injection for Level Control
(Alt. Path) **JPM No:** 2002 NRC S2

K/A Reference: 295009 EA1.08/EA1.10

Examinee: **NRC Examiner:**

Facility N/A **Date:**
Evaluator:

Method of testing

Simulated Performance	Actual Performance	<u>In simulator</u>
Classroom	Simulator	Plant

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 shutdown. PEI-B13, RPV Control (Non-ATWS) has been entered due to RPV level less than Level 3. Feedwater, HPCS, and RCIC are unavailable and RPV level is slowly decreasing.

Task Standard: CRD Alternate Injection into the RPV using CRD Pump A is completed.

Required Materials: Control Room PEI File Cabinet:
PEI-SPI 4.1, Rev 0, PIC 1
Two PEI-SPI keys

General References: PEI-SPI 4.1, Rev 0, PIC 1

Initiating Cue: The Unit Supervisor directs you, as the Reactor Operator, to perform CRD Alternate Injection in accordance with PEI-SPI 4.1.

Time Critical Task: NO

Validation Time: 15 minutes

(Denote Critical Steps with an asterisk)

Performance Step: If any CRD pump is running and any Service Air Compressor or
1.0 Instrument Air Compressor is running, then proceed to step 7 of this instruction.

Standard: Observes CRD Pump A and Service Air Compressor are running.
Proceeds to step 7.

Comment:

Performance Step: If Instrument Air is isolated to Containment and no known air leak is
7.0 present in Containment, then OPEN INST AIR CNTMT ISOL P52-F200.

Standard: Observes Instrument Air not isolated to Containment; P52-F200 open (red light on, green light off).

Comment:

Performance Step: Commence injection as follows:
8.1

- Verify the following pushbuttons are armed and depressed:
 - RPS MANUAL SCRAM CH A C71A-S3A
 - RPS MANUAL SCRAM CH C C71A-S3C
 - RPS MANUAL SCRAM CH B C71A-S3B
 - RPS MANUAL SCRAM CH D C71A-S3D

Standard: Verifies RPS Manual Scram pushbuttons are armed and depressed or confirms white scram solenoid lights are out at H13-P680.

Comment:

-
- * **Performance Step:** 8.2 Verify CRD HYDRAULICS FLOW CONTROL C11-R600 is in MANUAL.
- Standard:** Places CRD Hydraulics Flow Controller in MANUAL.
- Comment:** **Note: The following step will require the candidate to perform the alternate path.**
-
- * **Performance Step:** 8.3 Adjust CRD HYDRAULICS FLOW CONTROL C11-R600 output slowly to 100 to maximize flow.
- Standard:** Raises CRD Hydraulics Flow Controller output in MANUAL to 100.
- Comment:** **Note: Drywell leak will result in a LOCA signal. Candidate must recognize CRD pump trip and return to procedure step 2 for additional actions.**
- Cue: If candidate asks, CRD alternate injection is still required.**
-
- * **Performance Step:** 2.1 If Bus XH11 is de-energized, then restore Bus XH11 as follows:
- PLACE BUS XH11 LOCA BYPASS keylock switch in BYPASS.
- Standard:** Places BUS XH11 LOCA BYPASS keylock switch in BYPASS.
- Comment:** Expected alarm, H13-P877-1 (G5), BUS XH11 LOCA BYPASS.

- * **Performance Step:** 2.2 CLOSE ISOLATING BRKR EH1116.
- Standard:** Closes Isolating Breaker EH1116. Candidate may match green flag breaker prior to closing the breaker. If breaker green flag is matched, alarm H13-P877-1 (G2) will clear.
- Candidate observes breaker closed (red light on, green light off).
- Comment:** When breaker is closed, these alarms are expected to clear at panel H13-P877-1:
- G2, BUS EH11 BREAKER TRIP
- G4, BUS XH11 STRIPPED UNDERVOLTAGE
- Performance Step:** 3.1 If Bus XH12 is de-energized, then restore Bus XH12 as follows:
- PLACE BUS XH12 LOCA BYPASS keylock switch in BYPASS.
- Standard:** Places BUS XH12 LOCA BYPASS keylock switch in BYPASS.
- Comment:** Candidate may announce expected alarm, H13-P877-2 (G5), BUS XH12 LOCA BYPASS.
- Cue:** If asked about the necessity to reenergize Bus XH12, direct candidate to perform procedure as written.

Performance Step: 3.2	CLOSE ISOLATING BRKR EH1214.
Standard:	<p>Closes Isolating Breaker EH1214. Candidate may match green flag breaker prior to closing the breaker. If breaker green flag is matched, alarm H13-P877-2 (G2) will clear.</p> <p>Candidate observes breaker closed (red light on, green light off) Observes Bus XH12 voltage available lamp lit.</p>
Comment:	<p>When breaker is closed, alarms expected to clear at panel H13 P877-2:</p> <p>G2, BUS EH12 BREAKER TRIP</p> <p>G4, BUS XH12 STRIPPED UNDERVOLTAGE</p>
Performance Step: 4.0	<p>At H13-P970, verify <u>only</u> one of the following is running:</p> <ul style="list-style-type: none">• NCC PUMP A P43-C001A• NCC PUMP B P43-C001B• NCC PUMP C P43-C001C
Standard:	Determines only NCC Pump C is operating.
Comment:	
Performance Step: 5.0	If no Service Air Compressor is running and no Instrument Air Compressor is running, then refer to SOI-P51/52, Service and Instrument Air System, Section 4.3, Serv (Inst) Air Compressor Manual Startup from Standby Readiness.
Standard:	<p>Determines Service Air Compressor is running.</p> <p>No action required.</p>
Comment:	

- * Performance Step:** 6.0 If no CRD pump is running, then start CRD Pump A as follows:
- Start CRD AUX OIL PUMP A C11-C002A.
 - Verify blue PERM light is energized.
 - Place CRD HYDRAULICS FLOW CONTROL C11-R600 in MANUAL and ADJUST output to 0.
 - Start CRD Pump A C11-C001A.
- Standard:**
- Starts Aux Oil Pump. Observes red light on, green light off, H13-P601-22 (F2), CRD PUMP A TRIP OIL PRESSURE LOW alarm clears.
 - Observes blue permissive light is on.
 - Places CRD Hydraulics Flow Controller in MANUAL and adjusts output to 0.
 - Starts CRD Pump A, observes red light on, green light off. Candidate may elect to first clear the pump trip alarm (H13-P601-22 (D2)) by placing the control switch in STOP prior to starting the pump.
- Comment:** Alarm H13-P601-22 (D2), CRD PUMP AUTO TRIP is expected to clear when CRD Pump A is started.
- * Performance Step:** 7.0 If Instrument Air is isolated to Containment and no known air leak is present in Containment, then OPEN INST AIR CNTMT ISOL P52-F200.
- Standard:** Places valve control switch to OPEN position. Observes red light on, green light off, and amber override light on.
- Comment:** **Cue: If asked, no known air leak is present in Containment.**

Performance Step: Commence injection as follows:
8.1

- Verify the following pushbuttons are armed and depressed:
 - RPS MANUAL SCRAM CH A C71A-S3A
 - RPS MANUAL SCRAM CH C C71A-S3C
 - RPS MANUAL SCRAM CH B C71A-S3B
 - RPS MANUAL SCRAM CH D C71A-S3D

Standard: Confirms RPS Manual Scram pushbuttons are armed and depressed or confirms white scram solenoid lights are out at H13-P680.

Comment:

Performance Step: Verify CRD HYDRAULICS FLOW CONTROL C11-R600 is in
8.2 MANUAL.

Standard: Verifies CRD Hydraulics Flow Controller is in Manual.

Comment:

* **Performance Step:** Adjust CRD HYDRAULICS FLOW CONTROL C11-R600 output
8.3 slowly to 100 to maximize flow.

Standard: Raises CRD Hydraulics Flow Controller output in MANUAL to 100%.

Comment: Following alarms may come in as flow is raised:

- H13-P601-22 (H3)
- H13-P601-22 (D3)

* **Performance Step:** Open CRD DRIVE PRESS CONTROL VALVE C11-F003.
8.4

Standard: Holds control switch in open until red light is on and green light is off.

Comment:

* **Performance Step:** At IB 574' C/08, CRD Pump Room, UNLOCK and CLOSE Pump A
8.5 Minimum Flow Isolation 1C11-F015A.

Standard: Directs NLO to close 1C11-F015A.

Comment: **Cue: Minimum Flow Isolation 1C11-F015A is closed.**

Terminating Cue:

When PEI-SPI 4.1 Step 8.5 is completed, the evaluation for this JPM is complete.

Job Performance Measure No. 2002 NRC S2

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator: N/A

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

**INITIAL
CONDITIONS:**

The reactor is shutdown. PEI-B13, RPV Control (Non-ATWS) has been entered due to RPV level less than Level 3. Feedwater, HPCS, and RCIC are unavailable and RPV level is slowly decreasing.

**INITIATING
CUE:**

The Unit Supervisor directs you, as the Reactor Operator, to perform CRD Alternate Injection in accordance with PEI-SPI 4.1.

Facility: Perry **Task No:** 037-532-01-01

Task Title: Shift Control Room HVAC and Emergency Recirculation System from Emergency Recirculation to Normal **JPM No:** 2002 NRC S3

K/A Reference: 290003 A4.01

Examinee: **NRC Examiner:**

Facility Evaluator: N/A **Date:**

Method of testing

Simulated Performance	Actual Performance	<u>In Simulator</u>
------------------------------	---------------------------	---------------------

Classroom	Simulator	Plant
-----------	------------------	-------

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: Train A and B of the Control Room HVAC and Emergency Recirculation System automatically started due to a spurious upscale trip of the Control Room Airborne Gas Monitor, D17-K776.

SOI-M25/26 Section 4.5 has been performed with Train A in operation and Train B overridden off.

The spurious signal has cleared and alarms at D17-K776 have been reset.

Task Standard: Control Room HVAC Train A is operating in the Normal mode.

Required Materials: SOI M25/26, Rev. 9, PIC 05

General References: SOI M25/26, Rev. 9, PIC 05

Initiating Cue: The Unit Supervisor directs you, as the Reactor Operator, to shift Control Room HVAC Train A from the Emergency Recirculation Mode to the Normal Mode in accordance with SOI M25/26.

Time Critical Task: NO

Validation Time: 23 minutes

(Denote Critical Steps with an asterisk)

* **Performance Step:** If CONT RM HVAC A INBD SUPP DMPR, M25-F020B, or CONT
5.6.1 RM HVAC B INBD SUPP DMPR, M25-F020A, is closed, perform
Reset of Emergency Recirculation Auto Initiation.

Standard: Observes that M25-F020A and M25-F020B are closed. Proceeds to
Section 7.2.

Comment:

Performance Step: Verify both of the following in EMERG RCIRC:
7.2.1

- a. CONT RM HVAC TRAIN A MODE SELECT,
M25-S7.
- b. CONT RM HVAC TRAIN B MODE SELECT,
M25-S8.

Standard: Verifies both switches in EMERG RCIRC.

Comment:

* **Performance Step:** If Train A is operating, perform the following:
7.2.2

- a. Place CONT RM HVAC TRAIN A CONT, M25-S5, in
ON.
- b. Take CONT RM EMG RCIRC A ELEC HTG CONT,
M26-D001A, to STOP.
- c. Observe if an amber LOCA, LOOP, or HI RAD
Override light comes on.

Standard: Verifies M25-S5 is in ON position.

Places Electric Heating Coil A control switch to STOP position.
Observes green light on, red light off.

Observes amber light flicker but does not remain on.

Comment:

Performance Step: If Train B is operating, perform the following:
7.2.3

- a. Place CONT RM HVAC TRAIN B CONT, M25-S6, in ON.
- b. Take CONT RM EMG RCIRC B ELEC HTG CONT, M26-D001B, to STOP.
- c. Observe if an amber LOCA, LOOP, or HI RAD Override light comes on.

Standard: No action required. Train B is overridden.

Comment:

Performance Step: If Train A (B) is in secured status, take CONT RM HVAC TRAIN A (B) CONT, M25-S5(6) to STOP.
7.2.3a

Standard: No action required. Neither train is in secured status.

Comment:

Performance Step: Wait 2 minutes to allow the heating coils to cool.
7.2.4

Standard: Acknowledges 2 minute wait period.

Comment: **Cue: Inform the candidate 2 minutes has elapsed.**

Performance Step: Perform the following to reset any initiation signals as necessary:
7.2.5

- a. If either LOCA Override light is on, perform the appropriate sections of ONI-B21-4.
- b. If either LOOP Override light is on, perform the appropriate sections of ONI-R10.
- c. If either HI RAD Override light is on, reset CONTROL ROOM ATMOS HI RAD, D17-K776, module by depressing the white FAIL RESET pushbutton on Common Airborne Radiation Monitoring Panel, H13-P902.

Standard: No action required. Control Room ABRM Module, D17-K776 has already been reset.

Comment:

Performance Step: Confirm all amber LOCA, LOOP, and HI RAD Override lights are OFF.
7.2.6

Standard: Confirms all amber lights are off.

Comment:

* **Performance Step:** If either AUTO INIT. ACTIVE light is on, momentarily depress the following to reset the isolation:
7.2.7

- a. CONT ROOM HVAC DIV 1 ISOL RESET, M25-S11.
- b. CONT ROOM HVAC DIV 2 ISOL RESET, M25-S12.

Standard:

- Depresses DIV 1 ISOL RESET pushbutton.
- Depresses DIV 2 ISOL RESET pushbutton.

Comment:

- * **Performance Step:** Take the following control switches to OPEN:
7.2.8
- a. CONT RM HVAC A INBD SUPP DMPR, M25-F020B.
 - b. CONT RM HVAC B INBD SUPP DMPR, M25-F020A.
- Standard:** Places both control switches to OPEN position. Observes red light on, green light off for each damper.
- Comment:**
- Performance Step:** Confirm CONT RM HVAC A INBD SUPP DMPR, M25-F020B, and CONT RM HVAC B INBD SUPP DMPR, M25-F020A, remain open when their control switches are returned to AUTO.
7.2.9
- Standard:** Confirms dampers remain open.
- Comment:** Section 7.2 is complete. Candidate should return to Section 5.6, Step 2.
- Performance Step:** If in operation, take CONT RM EMG RCIRC A ELEC HTG CONT, M26-D001A, to STOP. Wait for 2 minutes to allow the heating coils to cool.
5.6.2
- Standard:** Confirms Electric Heating Coil is off. Observes green light on, red light off.
- Comment:** Electric Heating Coil was previously secured in Step 7.2.2.

- * **Performance Step:** Place both of the following in NORM:
5.6.3
- a. CONT RM HVAC TRAIN A MODE SELECT, M25-S7.
 - b. CONT RM HVAC TRAIN B MODE SELECT, M25-S8.
- Standard:**
- Places Train A Mode Select switch in NORM position and observes fans shift and dampers reposition.
 - Places Train B Mode Select switch in NORM position and observes dampers reposition. (Fans remain off.)
- Comment:** With Train A Mode Select in NORM, expect alarm H13-P904-2 (B3), CONT. RM HVAC EMER RECIRC A INIT to clear.
- Performance Step:** Confirm components in the proper configuration in accordance with the appropriate attachment:
5.6.4
- a. Attachment 5, Configuration with Train A in Operation, Train B Shutdown.
 - b. Attachment 6, Configuration with Train B in Operation, Train A Shutdown.
 - c. Attachment 7, Configuration with Both Trains in Operation.
- Standard:** Candidate selects Attachment 5 and confirms all components are in the position required by the Attachment.
- Comment:**
- Cue: If asked, the NLO will report that MCC, SWGR, BATT RMS MODE SWITCH TRAIN A DAMPER switch is in NORMAL and CONT RM EXHAUST DAMPER A, M24-F051A, is open.**
- Cue: If asked, the NLO will report that MCC, SWGR, BATT RMS MODE SWITCH TRAIN B DAMPER switch is in NORMAL and CONT RM EXHAUST DAMPER B, M24-F051B, is closed.**

Performance Step: Verify the condensate loop seals of Supply Plenum M25-B001A and
5.6.5 M25-B001B are filled as follows:

- a. Check all loop seals for the blowing or sucking of air.
- b. If either situation is present, remove the fill cap and fill the seal with water.
- c. Recheck the seal for the blowing or sucking of air.

Standard: Dispatches NLO to check loop seals.

Comment: **Cue: Notify candidate that loop seals are full.**

Terminating Cue:

When SOI-M25/26, Section 5.6 is completed, the evaluation for this JPM is complete.

Job Performance Measure No. 2002 NRC S3

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator: N/A

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

INITIAL
CONDITIONS:

Train A and B of the Control Room HVAC and Emergency Recirculation System automatically started due to a spurious upscale trip of the Control Room Airborne Gas Monitor, D17-K776.

SOI-M25/26 Section 4.5 has been performed with Train A in operation and Train B overridden off.

The spurious signal has cleared and alarms at D17-K776 have been reset.

INITIATING CUE:

The Unit Supervisor directs you, as the Reactor Operator, to shift Control Room HVAC Train A from the Emergency Recirculation Mode to the Normal Mode in accordance with SOI M25/26.

Facility: Perry **Task No:** 217-509-01-01

Task Title: RCIC Startup from Standby Readiness (CST to CST) (Alt. Path) **JPM No:** 2002 NRC S4

K/A Reference: 217000 A1.01, A2.10, A3.02, A4.04

Examinee: **NRC Examiner:**

Facility Evaluator: N/A **Date:**

Method of testing

Simulated Performance

Actual Performance

In Simulator

Classroom

Simulator

Plant

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 shutdown. PEI-B13, RPV Control (Non-ATWS), has been entered due to low RPV level. The MSIVs are closed. ESW Loop A and ECC Loop A are in operation.

Task Standard: RCIC System is operating in the CST to CST mode at 700 gpm.

Required Materials: SOI-E51, Rev 7, PIC 12

General References: SOI-E51, Rev 7, PIC 12

Initiating Cue: The Unit Supervisor directs you, as the Reactor Operator, to startup RCIC from standby readiness (CST to CST) and establish and maintain 700 gpm flow in accordance with SOI-E51.

Time Critical Task: NO

Validation Time: 14 minutes

(Denote Critical Steps with an asterisk)

Performance Step: Initiate evacuation of any personnel from the Reactor Building
4.5.1 Annulus and Containment.

Standard: Candidate makes plant announcement.

Comment: **Cue: If candidate contacts SAS to request Key Card verification, inform candidate that all personnel are clear.**

Performance Step: Perform ECC Loop A Manual Startup per SOI-P42.
4.5.2

Standard: Confirms that ECC Loop A is in operation.

Comment:

Performance Step: Verify RCIC PUMP CST SUCTION VALVE, 1E51-F010, is open
4.5.3

Standard: Verifies valve is open. Observes red light on, green light off.

Comment:

* **Performance Step:** Take the RCIC SECOND TEST VALVE TO CST, 1E51-F059, to
4.5.4 OPEN to provide a discharge path to the CST.

Standard: Places valve control switch to OPEN position. Observes red light on, green light off.

Comment:

Performance Step: Take RCIC TURBINE GLAND SEAL COMP, 1E51-C004, to
4.5.5 START.

Standard: Places RCIC Turbine Gland Seal Compressor control switch to START position. Observes red light on, green light off.

Comment:

- * **Performance Step:** Simultaneously perform the following:
4.5.6
- a. Take RCIC STEAM SHUTOFF, 1E51-F045, to OPEN to roll the RCIC turbine.
 - b. Open the RCIC FIRST TEST VALVE TO CST, 1E51-F022, by holding the control switch in OPEN.

Standard: Simultaneously places F045 valve control switch to OPEN position and holds F022 valve control switch in OPEN position. Observes red light on and green light off for each valve. Observes turbine speed, pressure, and pump flow increasing (E51-R607, R601, and R606).

Comment: **RCIC Pump Flow Controller failure is active. Candidate must determine RCIC Pump Flow Controller has failed before the completion of Step 4.5.9.**

Performance Step: Ensure RCIC PUMP MIN FLOW VALVE, 1E51-F019, opens if
4.5.7 RCIC flow is less than 120 GPM and the RCIC pump discharge pressure is greater than 125 psig.

Standard: Observes flow and pressure indication and verifies valve remains closed.

Comment:

Performance Step: 4.5.8 Verify the following valves automatically close after RCIC STEAM SHUTOFF, 1E51-F045 is open:

- a. RCIC TURB CNDS TO CRW FIRST SHUTOFF, 1E51-F004.
- b. RCIC TURB CNDS TO CRW SECOND SHUTOFF, 1E51-F005.
- c. RHR & RCIC ST SUPP FIRST DRN SHUTOFF, 1E51-F025.
- d. RHR & RCIC ST SUPP SECOND DRN SHUTOFF, 1E51-F026.

Standard: Verifies valves are closed. Observes green light on and red light off for each valve.

Comment: **Note: The following step will require the candidate to perform the alternate path.**

* **Performance Step:** 4.5.9 Using RCIC PUMP FLOW CONTROL, 1E51-R600, adjust flow until the desired flow is reached.

Standard: Determines RCIC Pump Flow Controller has failed in Automatic, informs Unit Supervisor, takes manual control, and adjusts RCIC flow to 700 gpm.

Comment: **Cue: Acknowledge RCIC Pump Flow Controller failure in Automatic and concur with placing the RCIC Pump Flow Controller in Manual.**

Performance Step: 4.5.10 Prior to lowering RCIC flow to less than 350 GPM, take manual control of RCIC flow by placing RCIC PUMP FLOW CONTROL, 1E51-R600, in MANUAL.

Standard: No action required.

Flow will not be reduced at this time.

Comment:

- * **Performance Step:** Throttle RCIC FIRST TEST VALVE TO CST, 1E51-F022, to
4.5.11 achieve a RCIC Pump discharge pressure of approximately reactor pressure +100 psig.
- Standard:** Throttles valve and adjusts RCIC Pump Flow Controller to maintain RCIC Pump discharge pressure approximately 100 psig above reactor pressure and RCIC flow at 700 gpm.
- Comment:**

Terminating Cue:

When SOI-E51, Section 4.5 is completed, the evaluation for this JPM is complete.

Job Performance Measure No. 2002-NRC S4

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

INITIAL
CONDITIONS:

The reactor is shutdown. PEI-B13, RPV Control (Non-ATWS), has been entered due to low RPV level. The MSIVs are closed. ESW Loop A and ECC Loop A are in operation.

INITIATING CUE:

The Unit Supervisor directs you, as the Reactor Operator, to startup RCIC from standby readiness (CST to CST) and establish and maintain 700 gpm flow in accordance with SOI-E51.

Facility: Perry **Task No:** 205-626-05-01**Task Title:** Terminate RHR
Containment Spray Loop A **JPM No:** 2002 NRC S5**K/A Reference:** 226001 A1.06, A4.03, A4.18**Examinee:** **NRC Examiner:****Facility** N/A **Date:**
Evaluator:**Method of testing****Simulated
Performance****Actual
Performance**In Simulator

Classroom

Simulator

Plant

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: A small break LOCA has occurred. The reactor is shutdown. PEI-B13, RPV Control (Non-ATWS) and PEI-T23, Containment Control, have been entered due to high Drywell pressure. RHR Loops A and B are operating in the Containment Spray mode.

Task Standard: RHR Containment Spray Loop A has been terminated.

Required Materials: PEI-SPI 3.1, Rev. 0

General References: PEI-SPI 3.1, Rev. 0

Initiating Cue: The Unit Supervisor directs you, as the Reactor Operator, to terminate RHR Loop A Containment Spray in accordance with PEI-SPI 3.1 utilizing the procedure.

Cue: If asked, it is not necessary to perform this operation from memory.

Time Critical Task: NO

Validation Time: 7 minutes

(Denote Critical Steps with an asterisk)

* **Performance Step:** 3.1 If LPCI A initiation signal is present, then take LPCI A INJECTION VALVE E12-F042A control switch to CLOSE to obtain the amber override light.

Standard: Determines LPCI A initiation signal is present:

- H13-P601-20 (B3), LPCS AND LPCI A DRYWELL PRESSURE HIGH alarm is on.
- LPCS and LPCI A white Seal-in light is ON above the LPCS and LPCI A Seal-in Reset pushbutton.

Place valve control switch to CLOSE position. Observes green light on, red light off, and amber override light on.

Comment:

Performance Step: 3.2 Place CNTMT SPRAY A MANUAL INITIATION E12-S63A pushbutton collar in DISARM.

Standard: Rotates collar to the DISARM position.

Comment: Alarm H13-P601-20 (C4), CONTAINMENT SPRAY A MANUAL INITIATION SWITCH ARMED is expected to clear.

* **Performance Step:** 3.3 Depress CNTMT SPRAY A SEAL IN RESET E12A-S64A pushbutton to reset the Containment Spray initiation logic.

Standard: Depresses pushbutton. Verifies CNTMT SPRAY white Seal-in light off above CNTMT SPRAY A SEAL-IN RESET pushbutton.

Comment: Alarm H13-P601-20 (A4), CONTAINMENT SPRAY A START SIGNAL RECEIVED is expected to clear.

-
- * Performance Step:** 3.4 IF Combustible Gas Mixing System A is NOT running, then close CNTMT SPRAY A FIRST SHUTOFF E12-F028A.
- Standard:** Locates Combustible Gas Mixing System A at H13-P800 and verifies Combustible Gas Mixing System A is not running.
- Places valve control switch to CLOSE position. Observes green light on, red light off, and RHR Pump A flow decreases to zero.
- Comment:** The candidate should confirm that RHR A Minimum Flow Valve 1E12-F064A automatically opens.
- Performance Step:** 3.5 Close CNTMT SPRAY A SECOND SHUTOFF E12-F537A.
- Standard:** Places valve control switch to CLOSE Position. Observes green light on, red light off.
- Comment:** **Note: The candidate may terminate the JPM at the completion of this step since he has not been directed to inject into the RPV or re-align to the Suppression Pool Cooling mode.**
- Performance Step:** 3.6 If directed to inject into the RPV, then commence injection with RHR A Pump as follows:
- Standard:** No action required.
- Comment:** **Note: Candidate may have already terminated the JPM at the completion of Step 3.5.**
- Cue: RHR injection is not required.**

Performance Step: 3.7 If directed to place RHR A in Suppression Pool Cooling, then commence Suppression Pool Cooling as follows:

Standard: No action required.

Comment: **Note:** Candidate may have already terminated the JPM at the completion of Step 3.5.

Cue: Suppression Pool Cooling is not required.

Terminating Cue:

When PEI-SPI 3.1, Step 3.5 is completed, the evaluation for this JPM is complete.

Job Performance Measure No. 2002 NRC S5

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator: N/A

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

**INITIAL
CONDITIONS:**

A small break LOCA has occurred. The reactor is shutdown. PEI-B13, RPV Control (Non-ATWS) and PEI-T23, Containment Control, have been entered due to high Drywell pressure. RHR Loops A and B are operating in the Containment Spray mode.

**INITIATING
CUE:**

The Unit Supervisor directs you, as the Reactor Operator, to terminate RHR Loop A Containment Spray in accordance with PEI-SPI 3.1 utilizing the procedure.

Facility: Perry **Task No:** 264-521-01-01

Task Title: Remotely Transfer Bus EH12 to the Alternate Preferred Source from the DG **JPM No:** 2002 NRC S6

K/A Reference: 264000 A1.09, A4.04, A4.05

Examinee: **NRC Examiner:**

Facility Evaluator: N/A **Date:**

Method of testing

Simulated Performance	Actual Performance	<u>In Simulator</u>
Classroom	Simulator	Plant

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 Division 2 Diesel Generator is supplying Bus EH12 with control of the Diesel Generator from the Control Room.

An NLO (Bill Smith) is on station at the Division 2 Diesel Generator.

Task Standard: Bus EH12 is transferred to the Alternate Preferred source from the Diesel Generator.

Required Materials: SOI-R43, Rev 8, PIC 17

General References: SOI-R43, Rev 8. PIC 17

Initiating Cue: The Unit Supervisor directs you, as the Reactor Operator, to remotely transfer Bus EH12 to the Alternate Preferred source from the Diesel Generator in accordance with SOI-R43.

Time Critical Task: NO

Validation Time: 22 minutes

(Denote Critical Steps with an asterisk)

Performance Step: If the Diesel Generator is being controlled locally, perform
5.4.1 Transferring Control to the Control Room (Remote Control).

Standard: No action required.

Comment: **Note: Information contained in Initial Conditions.**

* **Performance Step:** Perform one of the following as applicable:
5.4.2

- a. If placing Bus EH12 on the Alternate Preferred Source, place SYNCH SEL SWITCH in TH21.
- b. If placing Bus EH12 on the Preferred Source, place SYNCH SEL SWITCH in TH1.

Standard: Places SYNCH SEL SWITCH to TH21 position. Observes Synchroscope is activated.

Comment:

* **Performance Step:** Adjust the following as necessary:
5.4.3

- a. DIESEL GEN GOVERNOR such that SYNCHROSCOPE, 1R43-R032B, is moving slow in the FAST direction.
- b. DIESEL GEN VOLTAGE RGLTR to match Bus EH12 VOLTS, INCOMING, 1R22-R031B; and RUNNING, 1R22-R032B.

Standard: Operates Governor control switch to ensure synchroscope is moving slowly in the FAST direction.

Operates Voltage Regulator control switch to match Bus EH12 incoming and running voltages.

Comment: **Cue: If asked, mechanical governor control is not in use.**

- * Performance Step:** With SYNCHROSCOPE, 1R43-R032B moving slow in the FAST direction, at approximately the 2 minutes to 12 o'clock position, perform one of the following as applicable:
- 5.4.4**
- NOTE: When the Preferred or Alternate Preferred Source Breaker is closed, the indicated Generator Load will decrease (sometimes less than 0) unless using mechanical governor control. It may be necessary to raise load with the DIESEL GEN GOVERNOR to prevent a reverse power condition.
- a. If placing Bus EH12 on the Alternate Preferred Source, close Brkr EH1213, ALTN PREFERRED SOURCE BRKR.
 - b. If placing EH12 on the Preferred Source, close Brkr EH1212, PREFERRED SOURCE BRKR.
- Standard:** Closes Brkr EH1213 when synchroscope points to 2 minutes before 12 o'clock. Observes breaker red light on, green light off. Operates Governor control switch as necessary to prevent a reverse power condition.
- Comment:** **Cue: If asked, mechanical governor control is not in use.**
- Performance Step:** Place SYNCH SEL SWITCH in OFF.
- 5.4.5**
- Standard:** Places SYNCH SEL SWITCH to OFF position.
- Comment:** **Candidate should not exit SOI-R43 at Step 5.4.6, but should continue on to Step 5.4.7.**
- Cue: If asked, then inform the candidate it is not desired to operate the Diesel Generator in parallel with the grid.**

*** Performance Step:
5.4.7**Perform the following concurrently:

- a. Adjust DIESEL GEN VOLTAGE RGLTR to achieve approximately 100 KVAR on DG LOADING KILOVARs, 1R43-R022B.
- b. If time permits and rapid generator load reduction is not necessary, adjust DIESEL GEN GOVERNOR to achieve approximately 100 KW on DG LOADING KILOWATTS, 1R43-R023B as follows:

- 1) Lower generator load to 2500 KW at the rate of 150-200 KW per minute.

NOTE: The Diesel Generator should be shutdown within 5 minutes after reaching 2500 KW. Load reduction limitations do not apply below 2500 KW.

- 2) Lower generator load to 100 KW.

- c. If time does not permit and rapid load reduction is necessary, adjust DIESEL GEN GOVERNOR to achieve approximately 100 KW on DG LOADING KILOWATTS, 1R43-R023B.

Standard:

- a. Operates Voltage Regulator control switch to achieve 100 KVARs.
- b. Operates Governor control switch to achieve 100 KW.

Comment:**Cue: Rapid load reduction is not necessary.***** Performance Step:
5.4.8**

Take Brkr EH1201, DIESEL GEN BRKR, to TRIP.

Standard:

Places breaker control switch to TRIP position. Observes green light on, red light off.

Comment:

Performance Step: Shutdown Division 2 Diesel Generator to the desired configuration.
5.4.9

Standard: No action required.

Comment: **Cue: Inform candidate that another Reactor Operator will be assigned to shutdown the Division 2 Diesel Generator.**

Terminating Cue:

When SOI-R43, Section 5.4, is completed, the evaluation for the JPM is complete.

Job Performance Measure No. 2002 NRC S6

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

INITIAL
CONDITIONS:

The Division 2 Diesel Generator is supplying Bus EH12 with control of the Diesel Generator from the Control Room.

An NLO (Bill Smith) is on station at the Division 2 Diesel Generator.

INITIATING CUE: The Unit Supervisor directs you, as the Reactor Operator, to remotely transfer Bus EH12 to the Alternate Preferred source from the Diesel Generator in accordance with SOI-R43.

Facility:	<u>Perry</u>	Task No:	<u>239-546-05-01</u>
Task Title:	<u>Opening Inboard Main Steam Isolation Drain Valve (for RPV Pressure Control)</u>	JPM No:	<u>NRC 2002 - S7</u>
K/A Reference:	<u>239001 A1.08, A4.02, A4.09, A2.12</u>		

Examinee:	NRC Examiner:
------------------	----------------------

Facility Evaluator: <u>N/A</u>	Date:
---------------------------------------	--------------

Method of testing

Simulated Performance	<u>N/A</u>	Actual Performance	<u>In Simulator</u>
------------------------------	------------	---------------------------	---------------------

Classroom	Simulator	Plant
-----------	------------------	-------

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: A major seismic event has occurred. The Severe Accident Guidelines have been entered due to not being able to maintain RPV pressure at least 60 psig greater than Containment pressure. To provide an alternate method to prevent repressurization of the RPV, opening of the Inboard Main Steam Line Drain Valve (B21-F016) is required by SAG-2, RPV, Containment, and Radioactivity Release Control.

Task Standard: Inboard Main Steam Line Drain Valve B21-F016 is open.

Required Materials: Control Room PEI-SPI File Cabinet:
PEI-SPI 9.1, Rev. 0
Four PEI-SPI keys

General References: PEI-SPI 9.1, Rev. 0

Initiating Cue: The Unit Supervisor directs you, as the Reactor Operator, to open the Inboard Main Steam Line Isolation Valve, B21-F016, in accordance with PEI-SPI 9.1.

Time Critical Task: NO

Validation Time: 10 minutes

(Denote Critical Steps with an asterisk)

Performance Step: VERIFY the following control switches are in CLOSE:
1.0

- MSL B INBD MSIV B21-F022B
- MSL D INBD MSIV B21-F022D
- MSL A INBD MSIV B21-F022A
- MSL C INBD MSIV B21-F022C
- MSL B OTBD MSIV B21-F028B
- MSL D OTBD MSIV B21-F028D
- MSL A OTBD MSIV B21-F028A
- MSL C OTBD MSIV B21-F028C

Standard: Verifies each MSIV Control Switch is in CLOSE position.

Comment:

Performance Step: VERIFY the following valves are closed:
2.0

- MSL DRN & MSIV BYP INBD ISOL B21-F016
- MSL DRN & MSIV BYP OTBD ISOL B21-F019

Standard: Verifies each valve closed (green light on, red light off).

Comment:

- * Performance Step:** 3.1 Defeat MSIV low RPV level isolation as follows:
- At H13-P694, place MSIV ISOL LO LEVEL BYPASS CH D B21H-S76D keylock switch in BYP.
- Standard:** Places MSIV ISOL LO LEVEL BYPASS CH D in BYPASS.
- Comment:** Candidate may first locate panel H13-P694, and then proceed to the Simulator PEI-SPI panel and place the keylock switch in BYPASS.
- * Performance Step:** 3.2 At H13-P691, place MSIV ISOL LO LEVEL BYPASS CH A B21H-S76A keylock switch in BYP.
- Standard:** Places MSIV ISOL LO LEVEL BYPASS CH A keylock switch in BYPASS.
- Comment:** Candidate may first locate panel H13-P691, and then proceed to the Simulator PEI-SPI panel and place the keylock switch in BYPASS.
- * Performance Step:** 3.3 At H13-P692, place MSIV ISOL LO LEVEL BYPASS CH B B21H-S76B keylock switch in BYP.
- Standard:** Places MSIV ISOL LO LEVEL BYPASS CH B keylock switch in BYPASS.
- Comment:** Candidate may first locate panel H13-P692, and then proceed to the Simulator PEI-SPI panel and place the keylock switch in BYPASS.
- * Performance Step:** 3.4 At H13-P693, place MSIV ISOL LO LEVEL BYPASS CH C B21H-S76C keylock switch in BYP.
- Standard:** Places MSIV ISOL LO LEVEL BYPASS CH C keylock switch in BYPASS.
- Comment:** Candidate may first locate panel H13-P693, and then proceed to the Simulator PEI-SPI panel and place the keylock switch in BYPASS.

* **Performance Step:** When the following alarms have cleared,
4.0

Note: Alarms located at H13-P601-19:

- MSL ISOL MAIN STEAM LINE FLOW HIGH (A3)
- MSL ISOL TURBINE AREA TEMP HIGH (B3)
- MSL & RWCU ISOL STEAM TUNNEL TEMP HIGH (B4)

then depress the following pushbuttons:

- MSL & NS4 INBD ISOL SEAL IN RESET, 1B21H-S32
- MSL & NS4 OTBD ISOL SEAL IN RESET, 1B21H-S33

Standard: Verifies alarms have cleared and then depresses each Seal-in Reset pushbutton.

Comment: Expect alarm H13-P601-19 (A1), MSIV CLOSED SIGNAL RECEIVED to clear.

***Procedure discrepancy exists. S32 is the Outboard Seal-in Reset Pushbutton and S33 is the Inboard Seal-in Reset Pushbutton.**

* **Performance Step:** Verify the MSL DRN & MSIV BYP INBD ISOL B21-F016 valve is
5.0 open.

Standard: Places control switch to OPEN; observes red light on, green light off.

Comment:

Terminating Cue:

When PEI-SPI 9.1, Step 5.0 is completed, the evaluation for this JPM is complete.

Job Performance Measure No. 2002 NRC S7

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

INITIAL
CONDITIONS:

A major seismic event has occurred. The Severe Accident Guidelines have been entered due to not being able to maintain RPV pressure at least 60 psig greater than Containment pressure. To provide an alternate method to prevent repressurization of the RPV, opening of the Inboard Main Steam Line Drain Valve (B21-F016) is required by SAG-2, RPV, Containment, and Radioactivity Release Control.

INITIATING
CUE:

The Unit Supervisor directs you, as the Reactor Operator, to open the Inboard Main Steam Line Isolation Valve, B21-F016, in accordance with PEI-SPI 9.1.

Facility: Perry **Task No:** 211-524-05-01

Task Title: Commence Alternate Boron Injection **JPM No:** 2002 NRC P1

K/A Reference: 211000
295037 EA1.10

Examinee: **NRC Examiner:**

Facility N/A **Date:**
Evaluator:

Method of testing

Simulated Performance	<u>In-Plant</u>	Actual Performance
Classroom	Simulator	Plant

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: An ATWS has occurred. PEI-B13, RPV Control (ATWS) has been entered. Alternate Boron Injection is required.

Task Standard: Alternate born injection into the RPV has commenced.

Required Materials: PEI-SPI 1.8, Rev. 1 (from OSC PEI File Cabinet)

General References: PEI-SPI 1.8, Rev. 1

Initiating Cue: The Unit Supervisor directs you, as an In-Plant Operator, to coordinate with the Control Room to inject boron into the RPV in accordance with PEI-SPI 1.8, Alternate Boron Injection. PEI-SPI 1.8 has been completed up through Step 9.3.

Time Critical Task: NO

Validation Time: 18 minutes

(Denote Critical Steps with an asterisk)

Performance Step: Candidate obtains procedure and necessary equipment for the task.

Standard: Locates copy of procedure.

Comment: **Cue: When candidate has stated where procedure is located (Control Room or OSC PEI File Cabinet), then provide candidate with copy of procedure.**

* **Performance Step:** Commence Alternate Boron Injection as follows:
9.4.1

At AX 620' D/02, AX hallway, open ABI Pump Inlet Valve 1C41-F561.

Standard: Opens (simulates) valve by turning handwheel in the counterclockwise direction.

Comment: **Cue: Valve 1C41-F561 is open.**

Performance Step: Verify the following valves are closed:
9.4.2

- HPCS INJECTION VALVE, E22-F004
- HPCS PUMP MIN FLOW VALVE, E22-F012
- HPCS TEST VALVE TO SUPR POOL, E22-F023
- HPCS FIRST TEST VALVE TO CST, E22-F010
- HPCS SECOND TEST VALVE TO CST, E22-F011

Standard: Contacts (simulates) Control Room to verify valves are closed (or to perform Step 9.4.2).

Comment: **Cue: Step 9.4.2 is completed (valves are closed).**

- * Performance Step:** At AX 620' D/02, HPCS Valve Room, open HPCS Pump Disch
9.4.3 Line Flush Conn 1E22-F031.
- Standard:** Opens (simulates) valve by turning handwheel in the counterclockwise direction.
- Comment:** Note: If the HPCS Valve Room is still designated as a High Radiation Area, then the candidate should explain (but not enter) the radiological controls required to enter the HPCS Valve Room.
- Cue:** The candidate is not required to enter the HPCS Valve Room.
- Cue:** Valve 1E22-F031 is open.
- Performance Step:** Notify the Control Room that you are ready to inject with boron.
9.4.4
- Standard:** Notifies (simulates) Control Room that he is ready to inject with boron.
- Comment:** **Cue:** Direct candidate to inject boron in accordance with Step 9.4.5.
- Cue:** Inform candidate that Step 9.4.5.1 is completed.
- Note:** If the candidate requests assistance, then inform him that no one else is available.
- * Performance Step:** At IB 620' I/05, close Trsf Pump A Test Line Isol Vlv C41-F516A.
9.4.5.2
- Standard:** Closes (simulates) valve by turning handwheel in the clockwise direction.
- Comment:** **Cue:** Valve C41-F516A is closed.

- * **Performance Step:** 9.4.5.3 At AX 620' D/02, ABI Pump Local Starter, start ABI Pump 1C41-C004.
- Standard:** Depresses (simulates) START pushbutton. Observes red light on, green light off. Observes ABI Pump is running
- Comment:** **Cue: ABI Pump 1C41-C004 is running. Red light on, green light off.**
- * **Performance Step:** 9.4.5.4 At AX 620' D/02, AX Hallway, open ABI Pressure Gauge Isol Vlv 1C41-F564.
- Standard:** Opens (simulates) valve by turning handwheel in the counterclockwise direction. Informs Control Room that Step 9.4 is completed.
- Comment:** **Cue: Valve 1C41-F564 is open.**
- Cue: Direct candidate to inform the Control Room when SLC Transfer Tank level begins to drop.**
- Cue: Inform candidate that another In-Plant Operator has been assigned to monitor the SLC Transfer Tank level in accordance with Step 10. You are to return to the Control Room.**
- * **Performance Step:** 10.0 When SLC Transfer Tank level reaches 18% as indicated on SLC Transfer Tank Level C41-N415A or SLC Transfer Tank Level C41-N415B, Then SECURE injection into the RPV as follows:
- Standard:** Locates SLC Transfer Tank Level Indicators C41-N415A and N415B in order to trend SLC Transfer Tank level.
- Comment:** **Cue: Inform candidate that SLC Transfer Tank level is 90% and slowly decreasing.**
- Cue: Inform candidate that another In-Plant Operator has been assigned to monitor the SLC Transfer Tank level in accordance with Step 10. You are to return to the Control Room.**

Terminating Cue:

The evaluation for the JPM is complete when PEI-SPI 1.8, Step 10.0 is completed.

Job Performance Measure No. 2002 NRC P1

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator: N/A

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

INITIAL
CONDITIONS: An ATWS has occurred. PEI-B13, RPV Control (ATWS) has been entered. Alternate Boron Injection is required.

INITIATING CUE: The Unit Supervisor directs you, as an In-Plant Operator, coordinate with the Control Room to inject boron into the RPV in accordance with PEI-SPI 1.8, Alternate Boron Injection. PEI-SPI 1.8 has been completed up through Step 9.3.

Facility: Perry **Task No:** 205-627-05-01**Task Title:** RHR Loop B Alternate Injection **JPM No:** 2002 NRC P2**K/A Reference:** 203000 A2.16
295031 EA1.08**Examinee:** **NRC Examiner:****Facility** N/A **Date:**
Evaluator:**Method of testing****Simulated Performance** In-Plant **Actual Performance**Classroom Simulator **Plant****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: A LOCA has occurred. PEI-B13, RPV Control (Non-ATWS) has been entered. No injection systems are available. Alternate injection systems must be lined up. ESW Pump B is operating. The Division 2 Diesel Generator is in secured status.**Task Standard:** RHR Loop B is aligned and injecting into the RPV**Required Materials:** PEI-SPI 4.2, Rev 0 (From OSC PEI File Cabinet)
PEI-SPI 4.2 Tools (From OSC PEI File Cabinet -- simulated)
Ladder (Simulated)**General References:** PEI-SPI 4.2, Rev 0**Initiating Cue:** The Unit Supervisor directs you, as an In-Plant Operator, to coordinate with the Control Room to inject into the RPV in accordance with PEI-SPI 4.2, RHR Loop B Flood Alternate Injection. PEI-SPI 4.2 has been completed up through Step 2.4.**Time Critical Task:** NO**Validation Time:** 34 minutes

(Denote Critical Steps with an asterisk)

Performance Step: Candidate obtains procedure and necessary equipment for the task.

Standard: Locates copy of procedure.

Comment: **Cue: When candidate has stated where procedure is located (Control Room or OSC PEI File Cabinet), then provide candidate with copy of procedure.**

Performance Step: At AX 599' C/03, above RHR B HX Room Door, verify RHR B
2.5 FPCC Supplement Cooling Discharge Vlv 1E12-F099B is closed.

Standard: Confirms (simulates) green "close" locking device is installed.

Comment: **Cue: Valve 1E12-F099B green "close" locking device is installed.**

Note: Candidate should explain where he would obtain ladder (IB 599' K/05).

Note: Candidate should state that HP approval is required to gain access to equipment located more than 6 feet above floor level.

Note: Candidate should identify that 1E12-F099B is located in a Contaminated Area.

Performance Step: Verify RHR Pump B E12-C002B is secured.
2.6

Standard: Contacts (simulates) Control Room to verify RHR Pump B is secured.

Comment: **Cue: RHR Pump B E12-C002B is secured.**

- Performance Step:** 2.7 Verify RHR B TO CNTMT SHUTOFF E12-F027B is open.
- Standard:** Contacts (simulates) Control Room to verify E12-F027B is open.
- Comment:** **Cue: Valve E12-F027B is open.**
-
- * **Performance Step:** 2.8.1 At AX 599' B/03, perform the following:
Close ESW Emg Inject to Rx Vsl Loop Drain 1P45-F578.
- Standard:** Closes (simulates) valve by turning handwheel in clockwise direction.
- Comment:** **Cue: Valve 1P45-F578 is closed.**
-
- * **Performance Step:** 2.8.2 Unlock and open ESW Emg Inject to Reactor Vessel Isol 1P45-F572.
- Standard:** Unlocks and opens (simulates) valve by turning handwheel in counterclockwise direction.
- Comment:** **Cue: Valve 1P45-F572 is open.**
-
- * **Performance Step:** 2.8.3 Unlock and open approximately 260 turns ESW Emg Inject to Reactor Vessel Isol 1P45-F573 to open the valve 20%.
- Standard:** Unlocks and open (simulates) valve by turning handwheel 260 times in the counterclockwise direction.
- Comment:** **Cue: Valve 1P45-F573 is opened 260 turns to 20% open.**
- Note: Candidate should explain that a ladder is required to reach valve.**
- Note: As candidate is exiting RCA to complete this JPM, the Evaluator is to continue with the remainder of Admin JPM A3.**

- * Performance Step:** At CC 574' C/05, close ECC HX B ESW Inlet 1P45-F536B.
2.9
- Standard:** Closes (simulates) valve by turning handwheel in the clockwise direction.
- Comment:** **Cue: Valve 1P45-F536B is closed.**
-
- Performance Step:** If Division 2 Diesel Generator is not required to be operating, then secure ESW to Division 2 Diesel Generator as follows:
2.10.1
- Standard:** No action is required.
- Comment:** **Note: Division 2 Diesel Generator is already in secured status.**
-
- * Performance Step:** At DGB 620' A/02, Division 2 Diesel Generator Room, unlock and close Div 2 Diesel HX ESW Outlet 1P45-F534B.
2.10.2
- Standard:** Unlocks and closes (simulates) valve by turning handwheel in the clockwise direction.
- Comment:** **Cue: Valve 1P45-F534B is closed.**
-
- Performance Step:** At H13-P970, verify the following valves are closed:
2.11
- ECC TO FPCC HX B IN VLV P42-F260B
 - ECC TO FPCC HX B BYP VLV P42-F255B
 - ECC TO FPCC HX B OUT VLV P42-F265B
- Standard:** Contacts (simulates) Control Room to verify valves are closed (or to perform Step 2.11).
- Comment:** **Cue: Step 2.11 is completed (valves are closed).**

Performance Step: Verify ESW Pump B P45-C001B is running.
2.12

Standard: Contacts (simulates) Control Room to verify ESW Pump B is running.

Comment: **Cue: ESW Pump B is running.**

Performance Step: If ESW Pump B P45-C001B is not running, then cross connect Fire Water and ESW as follows:
2.13

Standard: No action is required.

Comment: **Note: ESW Pump B is running.**

Cue: Inform the candidate that injection will be performed inside the shroud per Step 3.2 and that Step 3.2.1 has been performed in the Control Room.

* **Performance Step:** At CC 620' B/03, MCC EF1D07 Compartment XL, place Remote Shutdown control switch for RHR B HX's ESW Outlet Valve 1P45-F068B in CLOSE to close the valve.
3.2.2

Standard: Momentarily places (simulates) control switch in the CLOSE position. Informs Control Room.

Comment: **Cue: Green light on and red light off.**

Terminating Cue:

When PEI-SPI 4.2, Step 3.2.2 is completed, the evaluation for this JPM is complete.

Job Performance Measure No. 2002 NRC P2

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator: N/A

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

INITIAL
CONDITIONS:

A LOCA has occurred. PEI-B13, RPV Control (Non-ATWS) has been entered. No injection systems are available. Alternate injection systems must be lined up. ESW Pump B is operating. Division 2 Diesel Generator is in secured status.

INITIATING CUE:

The Unit Supervisor directs you, as an In-Plant Operator, to coordinate with the Control Room to inject into the RPV in accordance with PEI-SPI 4.2. RHR Loop B Flood Alternate Injection. PEI-SPI 4.2 has been completed up through Step 2.4.

Facility: Perry **Task No:** 286-518-04-01**Task Title:** Initiate CR Subfloor CO2
from Outside Control Room
(Alt. Path) **JPM No:** 2002 NRC P3**K/A Reference:** 286000 A2.08
600000 AA1.08**Examinee:** **NRC Examiner:****Facility** N/A **Date:**
Evaluator:**Method of testing****Simulated** **Actual**
Performance In-Plant **Performance**Classroom Simulator **Plant****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: An electrical fire in the Control Room West Subfloor Area required the evacuation of the Control Room. All immediate actions for ONI-C61, Evacuation of the Control Room, have been completed.**Task Standard:** CO2 has been manually actuated for the Control Room West Subfloor Area.**Required Materials:** SOI-P54 (Gas) Rev 0, PIC-10**General References:** SOI-P54 (Gas) Rev 0, PIC-10**Initiating Cue:** The Unit Supervisor has directed you, as an In-Plant Operator, to manually initiate the Carbon Dioxide System for the Control Room West Subfloor Area in accordance with SOI-P54 (GAS).**Time Critical Task:** NO**Validation Time:** 25 minutes

(Denote Critical Steps with an asterisk)

Performance Step: Candidate obtains procedure and necessary for the task.

Standard: Locates copy of procedure.

Comment: **Cue: When candidate has stated where procedure is located (Control Room), then provide candidate with copy of procedure.**

Performance Step: If there is a fire in a Reactor Recirc Pump, verify open CNTMT CO2
5.4.1 SUPPLY OTBD ISOL, 1P54-F340, per ONI-P54.

Standard: No action is required. Fire is not in Recirc Pump

Comment:

* **Performance Step:** Open the Selector Valve by smashing the breakglass and rotating the
5.4.1a pilot valve clockwise.

Standard: Locates Selector Valve Pilot Valve 1P54-F3451. (Simulates) smashing and rotating Selector Valve Pilot Valve 1P54-F3451 in the clockwise direction.

Comment: **Cue: Selector Valve Pilot Valve 1P54-F3451 is open.**

Performance Step: Hold the Selector Valve pilot valve open for the discharge time as
5.4.2 listed in Attachment 3, then close the pilot valve.

Standard: (Simulates) holding Selector Valve Pilot Valve 1P54-F3451 in the open position for 4 minutes, then closes the pilot valve.

Comment: **Cue: No CO2 flow noise is heard and 4 minutes have elapsed.**

The following step will require the candidate to perform the alternate path.

- * **Performance Step:** If no CO2 discharge occurs, leave the Selector Valve pilot valve open and open the Master Valve by smashing the breakglass and rotating the pilot valve clockwise and perform the following:
- 5.4.3**
- a. Hold the Master Valve open for the discharge time specified in Attachment 3.
 - b. Close the Master Valve pilot valve.
 - c. Close the Selector Valve pilot valve.
- Standard:**
- (Simulates) leaves Selector Valve Pilot Valve 1P54-F3451 in open position.
- Locates Master Valve Pilot Valve P54-F3441.
- (Simulates) smashing breakglass, rotating the Master Valve Pilot Valve P54-F3441 clockwise and holds the Master Valve Pilot Valve open for 4 minutes.
- (Simulates) closing Master Valve Pilot Valve P54-F3441.
- (Simulates) closing Selector Valve Pilot Valve 1P54-F3451
- Comment:**
- Cue: Master Valve Pilot Valve P54-F3441 is open, CO2 flow noise is heard and 4 minutes have elapsed.**
- Cue: Master Valve Pilot Valve P54-F3441 is closed.**
- Cue: Selector Valve Pilot Valve 1P54-F3451 is closed.**

Terminating Cue:

When SOI-P54 (GAS), Step 5.4.3, is completed, the evaluation for this JPM is complete.

Job Performance Measure No. 2002 NRC P3

Examinee's Name:

Examiner's Name:

Date Performed:

Facility Evaluator: N/A

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT OR UNSAT

Examiner's Signature and Date: _____

INITIAL
CONDITIONS:

An electrical fire in the Control Room West Subfloor Area required the evacuation of the Control Room. All immediate actions for ONI-C61, Evacuation of the Control Room, have been completed.

INITIATING CUE:

The Unit Supervisor has directed you, as an In-Plant Operator, to manually initiate the Carbon Dioxide System for the Control Room West Subfloor Area in accordance with SOI-P54 (GAS).