

**PENNSYLVANIA POWER LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO      84.OP.001.152      0      03/29/02      295037      3.5  
 Appl To      JPM Number      Rev No.      Date      NUREG 1123 Sys. No.      K/A

Task Title: Bypass MSIV And CIG Interlocks During An ATWS And Restore CIG

Completed By: Terry W. Logsdon      03/29/02      [Signature]      6/13/02  
 Writer      Date      Instructor/Writer      Date

Approval: [Signature]      7-29-02      [Signature]      6/13/02  
 Requesting Supv./C.A. Head      Date      Nuclear Training Supv.      Date

Date of Performance: \_\_\_\_\_      20 Min      \_\_\_\_\_  
    Allowed Time (Min)      Time Taken (Min)

JPM Performed By: \_\_\_\_\_  
    Last      First      M.I.      Employee #/S.S. #

Performance Evaluation:    ( ) Satisfactory    ( ) Unsatisfactory

Evaluator Name: \_\_\_\_\_  
    Signature      Typed or Printed

Comments: \_\_\_\_\_

**84.OP.001.152**

**BYPASS MSIV AND CIG INTERLOCKS DURING AN ATWS AND RESTORE CIG**

NOTE: These setup instructions are also applicable to JPM 53.OP.002.151.

**SETUP INSTRUCTIONS**

1. Build a file (YPP.SIMJPM5) that contains the following:
  - a. IA/CIG Cross-tie
    - pfs 1 MRF PC125001 OPEN
2. Initialize simulator to IC-20.
3. Insert failure to scram, bat RPB.ATWS-ELEC
4. Insert RWCU F004 valve logic failure to auto close, IMF MV06:HV144F004
5. Place simulator to RUN.
6. Insert a leak into drywell, IMF RR164010 2
7. Ensure 1.72 isolations, place HPCI on min flow.
8. Perform all scram actions and initiate ARI.
9. Insert failure to open SV-12605, IOR ZDIHS12605 CLOSE
10. When stable, snapshot to a saved IC, number 160.

**To perform JPM 53.OP.002.151 do the following:**

1. Initialize simulator to saved IC 160.
2. Run the JPM, the F004 valve failure is built into the IC.

**To perform JPM 84.OP.001.152 do the following:**

1. Initialize simulator to saved IC 160.
2. Load file: restorepref YPP.SIMJPM5
3. IA/CIG crosstie should be assigned to program button 1.

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 84.OP.001.152**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

OP-184-001, MAIN STEAM SYSTEM

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the following Operational Activity(s):

None

**IV. TASK CONDITIONS**

- A. An ATWS is in progress with power level above five percent.
- B. MSIVs and steam line drains are open.
- C. The main condenser is available.
- D. RPS power is available.
- E. CIG System has isolated due to high drywell pressure; both compressors have tripped.

**V. INITIATING CUE**

Bypass MSIV and CIG interlocks, and restore CIG System.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.OP.001.152

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b></p> <ul style="list-style-type: none"> <li>• This JPM should be performed in the simulator.</li> <li>• Select a 100 percent power IC.</li> <li>• Insert a failure to scram: <b>bat RPB.ATWS-ELEC.</b></li> <li>• Insert a DW leak: <b>IMF RR164001 0.2.</b></li> <li>• Place the simulator in <b>RUN.</b></li> <li>• When the reactor scrams, <b>perform all scram actions.</b></li> <li>• Ensure 1.72 isolations occur; <b>place HPCI on min flow.</b></li> <li>• Insert failure to open SV-12605: <b>IOR ZDIHS12605 CLOSE</b></li> <li>• Place the simulator in <b>FREEZE.</b></li> <li>• The <b>FAULT STATEMENT</b> will precede the expected action.</li> <li>• When student is ready to begin JPM, place the simulator in <b>RUN.</b></li> </ul>			
1.	Obtain controlled copy of OP-184-001.	Obtains controlled copy.		
2.	Select the appropriate section.	Selects Section 3.4.		
3.	Review the prerequisites.	Ensures prerequisites are met.		
	<p><b><u>Evaluator</u></b>                      If asked, inform the student "bypassing MSIV and CIG interlocks is directed by Emergency Operating Procedures."</p>			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.OP.001.152

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*4.	<p>(HC) Bypass MSIV low water Level 1 isolation at 1C645.</p> <p>(HC)</p> <p>(HC)</p> <p><b><u>Evaluator</u></b> When first switch on 1C645 is placed in BYPASS, Annunciator AR-147-D1 will alarm. As each switch is placed in BYPASS, the white light will extinguish, and the green light will illuminate.</p>	<p>Places the following switches to BYPASS:</p> <ul style="list-style-type: none"> <li>• HS-B21-S38A RX WTR LVL 1 MSIV BYPASS LOGIC A</li> <li>• HS-B21-S38C RX WTR LVL 1 MSIV BYPASS LOGIC C</li> </ul>	1	
*5.	<p>(HC) Bypass CIG low water Level 1 and high drywell pressure isolation at 1C645 and 1C644.</p> <p>(HC)</p> <p>(HC)</p> <p>(HC)</p> <p><b><u>Evaluator</u></b> When switch on 1C644 is placed in BYPASS, Annunciator AR-148-D1 will alarm. As each switch is placed in BYPASS, the white light will extinguish, and the green light will illuminate.</p>	<p>Places the following switches to BYPASS:</p> <ul style="list-style-type: none"> <li>• At 1C645, HS-12694 LOW LVL 1/HI DRYWELL PRESS CIG BYPASS (HV-12603)</li> <li>• At 1C645, HS-12695 LOW LVL 1/HI DRYWELL PRESS CIG BYPASS (SV-12651)</li> <li>• At 1C644, HS-12696 LOW LVL 1/HI DRYWELL PRESS CIG BYPASS (SV-12605)</li> </ul>	1	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.OP.001.152

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
6.	(HC) Verify high drywell pressure signal has occurred.	Verifies high drywell pressure from Task Sheet or Control Room indications.		
*7.	<p><b><u>FAULT STATEMENT:</u></b> SV-12605 DOES NOT OPEN.</p> <p>Restore CIG System.</p> <p>(HC)</p> <p>(HC)</p> <p>(HC)</p> <p>(HC)</p> <p><b><u>Evaluator</u></b> To cross-tie instrument air: MRF PC125001 OPEN as NPO inform student that IA is cross-tied to CIG.</p>	<p>Restores CIG System as follows:</p> <ul style="list-style-type: none"> <li>• Open INST GAS CMP SUCT ISO HV-12603.</li> <li>• Open INST GAS TO CONTN ISO SV-12651.</li> <li>• Open INST GAS CMP OB SUCT ISO SV-12605.</li> </ul> <p>Note SV-12605 did not open.</p> <p>Directs NPO to cross-tie instrument air to 90# CIG header by slowly opening 126172 and 126167.  </p>	/	

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

- A. An ATWS is in progress with power level above five percent.
- B. MSIVs and steam line drains are open.
- C. The main condenser is available.
- D. RPS power is available.
- E. CIG System has isolated due to high drywell pressure; both compressors have tripped.

## **INITIATING CUE**

Bypass MSIV and CIG interlocks, and restore CIG System.

## **TASK CONDITIONS**

- A. An ATWS is in progress with power level above five percent.
- B. MSIVs and steam line drains are open.
- C. The main condenser is available.
- D. RPS power is available.
- E. CIG System has isolated due to high drywell pressure; both compressors have tripped.

## **INITIATING CUE**

Bypass MSIV and CIG interlocks, and restore CIG System.



## PENNSYLVANIA POWER LIGHT COMPANY JOB PERFORMANCE MEASURE APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO                      53.OP.002.151                      0                      04/30/98                      211000                      4.1  
 Appl To                      JPM Number                      Rev No.                      Date                      NUREG 1123 Sys. No.                      K/A

Task Title: Initiate The SBLC System In Accordance With OP-153-001 With RWCU F004 Valve Failing to Isolate

Completed By:

Kenneth L. Long  
Writer

04/30/98  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

  
Requesting Supv./C.A. Head                      7-29-02  
Date

  
Nuclear Training Supv.                      6/13/02  
Date

Date of Performance:

\_\_\_\_\_                      10 Min  
Allowed Time (Min)                      \_\_\_\_\_  
Time Taken (Min)

JPM Performed By:

\_\_\_\_\_                      \_\_\_\_\_                      \_\_\_\_\_                      \_\_\_\_\_  
Last                      First                      M.I.                      Employee #/S.S. #

Performance Evaluation:    ( ) Satisfactory    ( ) Unsatisfactory

Evaluator Name:

\_\_\_\_\_                      \_\_\_\_\_  
Signature                      Typed or Printed

Comments:

**53.OP.002.151**  
**INITIATE SBLC SYSTEM IAW OP-153-001 WITH RWCU FOO4 VLAVE FAILING TO ISOLATE**

NOTE: For the 2002 NRC Exam this JPM will be performed using the same setup instructions as JPM 84.OP.001.152. All of the necessary support functions for this JPM are built into saved IC-160.

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 53.OP.002.151**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

- A. OP-153-001 Standby Liquid Control System

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Operational Activities(s):

None

**IV. TASK CONDITIONS**

- A. A reactor scram has occurred.
- B. Reactor power has remained greater than five percent.
- C. The plant is being controlled in accordance with EO-100-113.
- D. Shift Supervision has determined that SBLC must be initiated.

**V. INITIATING CUE**

Initiate the Standby Liquid Control System.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 53.OP.002.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b></p> <ul style="list-style-type: none"> <li>• The FAULTED step in this JPM is preceded by a FAULT STATEMENT in <b>BOLD TYPE WITH CAPITAL LETTERS</b>.</li> <li>• Under no circumstances is a key to be inserted in the switch in the Control Room.</li> </ul> <p>1. Obtain a key for the SBLC Manual Initiation Switch.</p> <p>*2. <b>(HC)</b> Initiate SBLC.</p> <p><b><u>Evaluator</u></b></p> <p>The following will occur:</p> <ul style="list-style-type: none"> <li>• Both SBLC Squib Ready A-B white indicating lights will extinguish.</li> <li>• Both SBLC Pumps 1P208A and B, amber indicating lights will extinguish, and both red indicating lights will illuminate.</li> <li>• Annunciator AR-107-A03 will alarm.</li> <li>• SBLC Pump discharge pressure will increase to about 200 psig above reactor pressure.</li> <li>• SBLC storage tank level will begin decreasing.</li> <li>• SBLC injection flow will increase to approximately 80-86 gpm.</li> </ul>	<p>Obtains key.</p> <p>Places the SBLC Manual Initiation Switch in the START position.</p>	<p>i</p> <p>i</p>	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 53.OP.002.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval.	Comments
3.	<p>(HC) Check that both SBLC Pumps start.</p> <p><b><u>Evaluator</u></b> If simulating this task, inform the student that the amber lights have extinguished, and the red lights have illuminated for both 1P208A and B.</p> <p><b><u>FAULT STATEMENT</u></b> <b>THE RWCU F004 VALVE FAILS TO ISOLATE.</b></p>	Notes that both 1P208A and B red indicating lights illuminate.	/	
*4.	(HC) Check that RWCU Inlet Outboard Isolation Valve goes closed.	Notes that RWCU F004 Valve did not isolate. Manually isolates F004 Valve.		
5.	<p>(HC) Check that both explosive valves fire.</p> <p><b><u>Evaluator</u></b> If simulating this task, inform the student that both white lights have been extinguished.</p>	Notes that both SBLC Squib Ready A-B white indicating lights extinguish.		
6.	<p>(HC) Check that Annunciator AR-107-A03 alarms.</p> <p><b><u>Evaluator</u></b> If simulating this task, inform the student that Annunciator AR-107-A03 has alarmed.</p>	Acknowledges Annunciator AR-107-A03, SBLC Squib Valves Loss of Continuity.	/	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 53.OP.002.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
7.	<p><b>(HC)</b> Check that both SBLC Pumps discharge pressure increases to above reactor pressure.</p> <p><b>Evaluator</b> If simulating this task, inform the student that SBLC Pump discharge pressure is ~200 psig greater than reactor pressure.</p>	Compares SBLC Pump Dsch Press PI-C41-1R600 indication with any available reactor pressure indication.	/	
8.	<p><b>(HC)</b> Check that SBLC flow is indicated.</p> <p><b>Evaluator</b> If simulating this task, inform the student that flow is indicated. Flow should be 80 to 86 gpm.</p>	Notes injection flow indicated on Standby Liquid Ctl, LI/FI-14806.		
9.	<p><b>(HC)</b> Check that SBLC Storage Tank Level decreases.</p> <p><b>Evaluator</b> If simulating this task, inform the student that level is decreasing. The pumps need to be running several minutes before level can be seen to decrease.</p>	Notes SBLC Tank Level decrease on Standby Liquid Ctl, LI/FI-14806.		
10.	<p><b>(HC)</b> Check that reactor power decreases.</p> <p><b>Evaluator</b> If simulating this task, inform the student that reactor power is decreasing as expected.</p>	Notes that reactor power begins decreasing on any available power level indicator on 1C651 or 1C652.	/	

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. A reactor scram has occurred.
- B. Reactor power has remained greater than five percent.
- C. The plant is being controlled in accordance with EO-100-113.
- D. Shift Supervision has determined that SBLC must be initiated.

### **INITIATING CUE**

Initiate the Standby Liquid Control System.

### **TASK CONDITIONS**

- A. A reactor scram has occurred.
- B. Reactor power has remained greater than five percent.
- C. The plant is being controlled in accordance with EO-100-113.
- D. Shift Supervision has determined that SBLC must be initiated.

### **INITIATING CUE**

Initiate the Standby Liquid Control System.



**PENNSYLVANIA POWER & LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**


S/RO      45.ON.001.151      0      03/06/02      295002      3.7  
 Appl To      JPM Number      Rev No.      Date      NUREG 1123 Sys. No.      K/A

Task Title: Respond to a Failure of "A" RFPT SPD/CTL/Demand Signal in Accordance With ON-145-001

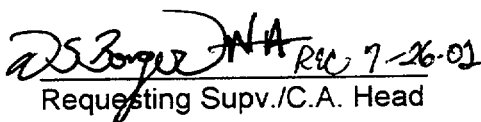
Completed By:

Terry W. Logsdon      03/06/02  
 Writer      Date

Reviews:

      6/13/02  
 Instructor/Writer      Date

Approval:

 NA REC 7-26-02      7-29-02  
 Requesting Supv./C.A. Head      Date

      6/13/02  
 Nuclear Training Supv.      Date

Date of Performance: \_\_\_\_\_

15 MIN  
~~20 MIN~~ REC 7-29-02  
 Allowed Time (Min)

Time Taken (Min)

JPM Performed By:

\_\_\_\_\_  
 Last      First      M.I.      Employee #/S.S. #

Performance Evaluation:    ( ) Satisfactory    ( ) Unsatisfactory

Evaluator Name:

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Typed or Printed

Comments:

#### 45.ON.001.151

### RESPOND TO FAILURE OF 'A' RFPT SPD/CTL/DEMAND SIGNAL IAW ON-145-001

#### SETUP INSTRUCTIONS

1. Build a file (YPP.SIMJPM2) that contains following:
  - a. Fail 1R601A 'INC' and 'DEC' pushbuttons using:
    - IOR ZDISCC32R601AA AsIs INC BUTTON
    - IOR ZDISCC32R601AB AsIs DEC BUTTON
    - IOR ZDISCC32R601AC AsIs FAST DETENT
  - b. pfs 1 IMF PMO3:1P501A 'A' CW Pump trip
  - c. pfs 2 IMF FW145004A RFPT 'A' CTL SIG FAILURE
2. Initialize simulator to IC-20.
3. Load file: **restorepref YPP.SIMJPM2**
4. Place simulator to RUN.
5. Insert 'A' CW Pump trip and Control signal failure, **DEPRESS PB-1 AND PB-2**.
6. Allow the plant to stabilize.
7. Ensure RFP flows are unbalanced.
8. When stable, snapshot to a saved IC, number 164.

#### To Perform JPM 45.ON.001.151 do the following:

1. Initialize simulator to saved IC-164.
2. Perform the JPM.

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 45.ON.001.151**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

- A. ON-145-001 RPV Level Control System Malfunction
- B. AR-101-B16 RFPT Control Signal Failure

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Operational Activity(s):

18 Reactor Level Control Malfunction

**IV. TASK CONDITIONS**

- A. The unit was operating at 100 percent Reactor power.
- B. You have been assigned as the Unit Responsible PCO and will operate 1C651 controls.
- C. A Reactor recirc runback has occurred, which was initiated by a CW pump trip.
- D. During the runback AR-101-B16 RFPT CONTROL SIGNAL FAILURE alarm came in.

**V. INITIATING CUE**

Respond to the RFPT CONTROL SIGNAL FAILURE annunciator.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 45.ON.001.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b>Evaluator</b></p> <ul style="list-style-type: none"> <li>• The FAULTED step in this JPM is preceded by a Fault Statement in <b>BOLD TYPE WITH CAPITAL LETTERS</b>.</li> <li>• This JPM should be performed in the Simulator. Select an IC that establishes 100 percent reactor power.</li> <li>• Build a file containing the following:                             <ol style="list-style-type: none"> <li>1. <b>pfs1 IMF PM03: 1P501A</b></li> <li>2. <b>pfs2 IMF FW145004A</b></li> </ol> </li> <li>• Place Simulator in RUN.</li> <li>• <b>DEPRESS PB1 and 2.</b></li> <li>• Allow the Plant to stabilize, then place the Simulator in FREEZE.</li> <li>• Give the student a few minutes to read the Task Conditions/Cue Sheet, and look over Panel 1C651.</li> <li>• Place Simulator in RUN.</li> </ul>			
1.	<p>Monitor Reactor water level.</p> <p>Using ON-145-001, RPV Level Control System Malfunction, Section 3.1.2, perform the following.</p>	<p>Verify RPV level approximately +35 inches NR using PICSY/CRT format or 1C652 (SIP).</p>		
2.	<p>Verify RFP SPD CTL/DEMAND SIGNAL SIC-C32-1R601A CONTROLLER in AUTO.</p>	<p>Verify controller green light is on and amber light is off.</p>		
3.	<p>Place the failed RFP SPD CTL/DEMAND SIGNAL SIC-C32-1R601A CONTROLLER in MANUAL.</p>	<p>Depress the Manual pushbutton, verify amber light is on, green off.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 45.ON.001.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*4.	<p><b>Evaluator</b> If this task is being simulated, inform the student that amber light is on, green light off.</p> <p><b>FAULT STATEMENT: MANUAL RFP CONTROL SIC-C32-1R601A DOES NOT WORK.</b></p> <p>Attempts to adjust RFP 'A' SPD CTL/DEMAND SIGNAL SIC-C32-1R601A to control Reactor Water Level ≈35" and discharge flows on operating pumps ≈equal.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that RFP speed and flow is not changing.</p>	<p>Using the DECREASE button on the SIC-C32-1R601A, attempt to decrease the speed of 'A' RFPT while observing 'B' and 'C' increasing.</p> <p>Verify RFP speed and flow is not changing.</p>		
5.	<p>Report to the Unit Supervisor that manual control has failed for RFPT 'A'.</p>	<p>Report to the Unit Supervisor that manual control has failed for RFPT 'A'.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 45.ON.001.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b> As the Unit Supervisor direct that RFPT "A" be placed on the JACK and speeds matched with "B" and "C."</p>			
*6.	Slow Lower MSC on RFPT "A" until speed decreases.	Using HS-12730A1 SLOW LOWER RFPT A MTR SPD CHANGER until speed decreases.		
	<p><b><u>Evaluator</u></b> If this task is being simulated, inform the student that RFPT "A" speed is decreasing.</p>	Level should remain between the high and low level alarm point.		
7.	Engage the HYD JACK.	DEPRESS HYD JACK A and verify red light on.		
	<p><b><u>Evaluator</u></b> If this task is being simulated, inform the student that amber light is off and red on.</p>			
*8.	Adjust the MSC on RFPT "A" to equalize the discharge flows of all three RFPTs.	Adjust RFPT "A" MTR SPD CHANGER using the SLOW pushbutton to control Reactor water level approximately +35 inches and RFPT discharge flows approximately equal.		
	<p><b><u>Evaluator</u></b></p> <ul style="list-style-type: none"> <li>• If this task is being simulated, inform the student that RFPT "A" speed decreasing and "B" and "C" increasing until they are matched.</li> <li>• This JPM may now be terminated.</li> </ul>	Level should remain between the high and low level alarm point.		

\*Critical Step

#Critical Sequence

### TASK CONDITIONS

- A. The unit was operating at 100 percent Reactor power.
- B. You have been assigned as the Unit Responsible PCO and will operate 1C651 controls.
- C. A Reactor recirc runback has occurred, which was initiated by a CW pump trip.
- D. During the runback, AR-101-B16, RFPT CONTROL SIGNAL FAILURE, alarm came in.

### INITIATING CUE

Respond to the RFPT CONTROL SIGNAL FAILURE annunciator.

## TASK CONDITIONS

- A. The unit was operating at 100 percent Reactor power.
- B. You have been assigned as the Unit Responsible PCO and will operate 1C651 controls.
- C. A Reactor recirc runback has occurred, which was initiated by a CW pump trip.
- D. During the runback, AR-101-B16, RFPT CONTROL SIGNAL FAILURE, alarm came in.

## INITIATING CUE

Respond to the RFPT CONTROL SIGNAL FAILURE annunciator.



**PENNSYLVANIA POWER & LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO      51.OP.002.152      0      01/18/00      209001      3.8  
Appl To      JPM Number      Rev No.      Date      NUREG 1123 Sys. No.      K/A

Task Title: Perform Manual Startup Component by Component of Core Spray System in Accordance  
With OP-151-001

Completed By:

Frank A Tarselli  
Writer

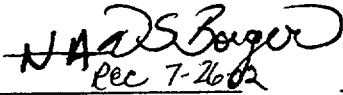
01/18/00  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

  
Requesting Supv./C.A. Head

7-29-02  
Date

  
Nuclear Training Supv.

6/13/02  
Date

Date of Performance:

20 Min  
Allowed Time (Min)

Time Taken (Min)

JPM Performed By:

Last

First

M.I.

Employee #/S.S. #

Performance Evaluation:    ( ) Satisfactory    ( ) Unsatisfactory

Evaluator Name:

Signature

Typed or Printed

Comments:

**51.OP.002.152**  
**PERFORM MANUAL STARTUP COMPONENT BY COMPONENT OF CORE SPRAY**  
**SYSTEM**

**SETUP INSTRUCTIONS**

1. Build a file (YPP.SIMJPM4) that contains following:
  - a. Prevent auto injection of 'A' Loop CS using:
    - IMF RLO1:E211K5A
    - IMF RLO1:E211K7A
  - b. Prevent auto and manual injection of 'B' Loop CS using:
    - IMF RLO1:E211K5B
    - IMF RLO1:E211K7B
    - IMF RLO1:E211K2B
  - c. Prevent RHR injection using:
    - IMF RL01:E111K8A
    - IMF RL01:E111K6A
    - IMF RL01:E111K8B
    - IMF RL01:E111K6B
  - d. pfs 1 IMF RR164010 20      LOCA
2. Initialize simulator to IC-20.
3. Load file: **restorepref YPP.SIMJPM4**
4. Place simulator to RUN.
5. Override HPCI and RCIC.
6. Place master FW controller to MAN and '0' output signal.
7. Initiate a manual scram, trip main turbine.
8. Reset main generator lockout relays.
9. Insert LOCA, **DEPRESS PB-1**.
10. Stop all 4 condensate pumps.
11. Manually open 6 ADS SRVs to lower RPV pressure to  $\approx$ 100 psig.
12. Allow the plant to stabilize.
13. When stable, snapshot to a saved IC, number 163.

**To Perform JPM 51.OP.002.152 do the following:**

1. Initialize simulator to saved IC-163.
2. Perform the JPM.

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 51.OP.002.152**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

- A. OP-151-001 Core Spray System

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Operational Activity(s):

None

**IV. TASK CONDITIONS**

- A. The Core Spray System is aligned for automatic initiation in accordance with OP-151-001.
- B. A LOCA has occurred.
- C. The LPCI System cannot be initiated.
- D. Generator lockouts have been reset.
- E. CS System failed to auto initiate.

**V. INITIATING CUE**

Manually initiate both loops of Core Spray.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*1.	<p><b>Evaluator</b></p> <ul style="list-style-type: none"> <li>• The <b>FAULTED</b> step in this JPM is preceded by a Fault Statement in <b>BOLD TYPE WITH CAPITAL LETTERS</b>.</li> <li>• If this task is performed in the Simulator, set up the following conditions in a saved IC:                             <ol style="list-style-type: none"> <li>1. Large break LOCA.</li> <li>2. Both loops of RHR OOS.</li> <li>3. Both CS loops failed to auto start.</li> <li>4. Manual initiation pushbutton overridden off for "B" Core Spray Loop.</li> </ol> </li> </ul> <p>Initiate "A" Loop of Core Spray.</p> <p><b>Evaluator</b> The following annunciator alarms, AR109-A01 (Core Spray Loop "A" Initiation Switch Armed).</p>	<p>Rotates the collar on Core Spray Loop "A" MAN INIT HS-E21-1S16A pushbutton to the ARMED position.</p> <p>Notes that AR-109-A01. Core Spray Loop "A" Man Init Switch Armed, annunciator alarms.</p> <p>Depress E21-1S16A pushbutton.</p> <p>Notes that Core Spray Loop "A" initiated</p>	<p>i</p> <p>l</p>	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
<p>*2.</p> <p>3.</p> <p>*3a.</p>	<p><b><u>FAULT STATEMENT</u></b>  <b>LOOP B CORE SPRAY FAILS TO INITIATE WHEN THE MANUAL PUSHBUTTON IS ARMED AND DEPRESSED.</b></p> <p>Initiate "B" Loop of Core Spray.</p> <p><b><u>Evaluator</u></b>                      The following annunciator alarms, AR113-A01 (Core Spray Loop "B" Initiation Switch Armed).</p> <p>Manual startup component by component of "B" Loop of CS System.</p> <p>Start Core Spray Pumps B and D.</p> <p><b><u>Evaluator</u></b>                      When HS for CS Pumps B and/or D taken to Start position amber lights off; red lights on.</p>	<p>Rotates the collar on Core Spray Loop "B" MAN INIT HS-E21-1S16B pushbutton to the ARMED position.</p> <p>Notes that AR-113-A01, Core Spray Loop "B" Man Init Switch Armed, annunciator alarms.</p> <p>Depress E21-1S16B pushbutton.</p> <p>Notes that Core Spray Loop "B" failed to initiate.</p> <p>Notes Manual Startup required for "B" Loop Core Spray</p> <p>Place the HS for 1P206B and D to the START position.</p>	<p>1</p> <p>1</p>	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
3b.	Open or check open OB INJ SHUTOFF HV-152-F004B.  <u>Evaluator</u> HV-152-F004B red light on.	Verifies that HV-152-F004B open.	/	
*3c.	When Reactor pressure $\leq 436$ psig, place LO RX PRESS PERM Switch HS-152-15249B to BYPASS.  <u>Evaluator</u> This will become a CRITICAL STEP IF RPV PRESS $\leq 436$ PSIG.	When Reactor pressure $\leq 436$ psig, places HS-15249B to BYPASS.		
*3d.	THROTTLE OPEN CORE SPRAY LOOP "B" IB INJ SHUTOFF HV-152-F005B to establish loop flow $\leq 6,350$ gpm for two-pump operation.  <u>Evaluator</u> <ul style="list-style-type: none"> <li>When HS for HV-152-F005 B taken to OPEN position; red light on.</li> <li>When CS system flow <math>\geq 635</math> gpm F031B; amber light on.</li> </ul>	Throttles open HV-152-F005B to establish and maintain $\leq 6,350$ gpm.  Verifies MIN FLOW HV-152-F031B closes.		
3.d.1	Maintain $\leq 6350$ gpm	Throttles HV-152-F005B to maintain $\leq 6,350$ gpm.	/	
3e.	Check CS room coolers AUTO starts.	Checks CS Unit Coolers 1V211B and/or D AUTO STARTS as indicated on 1C681.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
4.	<p>Check CS room coolers AUTO starts.</p> <p><b><u>Evaluator</u></b> When both loops of Core Spray are injecting inform the student the JPM is completed.</p>	<p>Checks CS Unit Coolers 1V211A and/or C AUTO STARTS as indicated on 1C681.</p>	<p>1</p>	

\*Critical Step

#Critical Sequence

## TASK CONDITIONS

- A. The Core Spray System is aligned for automatic initiation in accordance with OP-151-001.
- B. A LOCA has occurred.
- C. The LPCI System cannot be initiated.
- D. Generator lockouts have been reset.
- E. CS System failed to Auto Initiate.

## INITIATING CUE

Manually initiate both loops of Core Spray.



## **TASK CONDITIONS**

- A. The Core Spray System is aligned for automatic initiation in accordance with OP-151-001.
- B. A LOCA has occurred.
- C. The LPCI System cannot be initiated.
- D. Generator lockouts have been reset.
- E. CS System failed to Auto Initiate.

## **INITIATING CUE**

Manually initiate both loops of Core Spray.

**PENNSYLVANIA POWER & LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO                      78.AR.003.104                      0                      03/20/02                      215004                      3.5  
Appl To                      JPM Number                      Rev No.                      Date                      NUREG 1123 Sys. No.                      K/A

Task Title: Bypass SRM Channel "C" Rod Block Input To RMCS

Completed By:

Terry W. Logsdon  
Writer

03/20/02  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

REC 7-26-02 NA DS Beggs  
Requesting Supv./C.A. Head

7-29-2002  
Date

  
Nuclear Training Supv.

6/13/02  
Date

Date of Performance:

\_\_\_\_\_ 18 Min  
Allowed Time (Min)

\_\_\_\_\_           
Time Taken (Min)

JPM Performed By:

\_\_\_\_\_                             
Last First M.I.

\_\_\_\_\_           
Employee #/S.S. #

Performance Evaluation:    ( ) Satisfactory    ( ) Unsatisfactory

Evaluator Name:

\_\_\_\_\_           
Signature

\_\_\_\_\_           
Typed or Printed

Comments:

**78.AR.003.104**  
**BYPASS SRM CHANNEL C ROD BLOCK INPUT TO RMCS**

**SETUP INSTRUCTIONS**

1. Build a file (YPP.SIMJPM3) that contains the following:

pfs 1 IMF NM178002C 0 SRM 'C' DNSC FAILURE

**To Perform JPM 78.AR.003.104 do the following:**

1. Initialize simulator to IC-4.
2. Load file: **restorepref YPP.SIMJPM3**
3. Place simulator to RUN.
4. Select rod 38-15 (step 61) as the rod just moved to position 48.
5. Acknowledge all RWM messages.
6. Ensure the CRC Book at the PCO desk is the B-2 Sequence.
7. Prepare a marked up copy of SO-156-007, CONTROL ROD COUPLING CHECK.
8. Prepare a marked up copy of GO-100-002 step 6.21 up to 6.21.7.
9. SRM 'C' failure malfunction should be assigned to program button 1.
10. Perform the JPM.

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 78.AR.003.104**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

- A. AR-104-001, RPS Div 2 1C651
- B. GO-100-002, Plant Startup

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the following Operational Activity(s):

None

**IV. TASK CONDITIONS**

- A. You are the PCOM monitoring the core during shift turnover.
- B. A reactor startup is in progress in accordance with GO-100-002.
- C. Reactor power is in the Source Range.
- D. The startup is at step 61 of the B-2 Startup Control Rod Sequence. Rod 38-15 has been moved from notch position 20 to notch position 48.

**V. INITIATING CUE**

Respond to any alarms on Control Room Panel 1C651 as required.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 78.AR.003.104

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
1.	<p><b><u>Evaluator</u></b></p> <ul style="list-style-type: none"> <li>• This JPM should be performed in the simulator.</li> <li>• <b>INITIALIZE to IC 4</b>, ensure simulator is set for rod step 61 (rod 38-15) in B-2 Startup Sequence.</li> <li>• <b>ASSIGN</b> the SRM Channel C failure malfunction to a Function Button (either the Instructor Station or the Hand-Held Remote): <b>IMF NM178002C 0</b></li> <li>• Place the simulator in RUN.</li> </ul> <p><b>FAULT STATEMENT: SRM CHANNEL "C" WILL FAIL DOWNSCALE.</b></p> <p>When the candidate is ready, <b>DEPRESS P-1</b> to cause the SRM C failure.</p> <p>Acknowledge annunciators and refers to applicable Annunciator Response procedures.</p>	Obtains procedure AR-104-001		
2.	Determine SRM causing alarm.	Using PICSY and/or 1C652 indications determines that SRM C has failed.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 78.AR.003.104

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
3.	Check SRM detector position and status.	Turns Power button on and notes the amber SRM DNSC status light ON.  Notes SRM detectors white IN status light is ON and the white OUT status light is OFF.		
4.	Perform SRM channel check.	Compares the affected SRM indication with other channels using PICSY or 1C652. States the C SRM has failed downscale.		
5.	Determine the C SRM has failed downscale and informs the Unit Supervisor.	Informs Unit Supervisor of SRM status		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 78.AR.003.104

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*6	<p><b><u>Evaluator</u></b> The SRO directs the PCO to Bypass the SRM</p> <p>Bypass the C SRM.</p>	<p>Places the SRM bypass switch for the C channel to the BYPASS position.</p>	/	
7.	<p>Ensure the SRM downscale condition clears</p> <p><b><u>Evaluator</u></b> When the rod block is reset, instruct the student to stop.</p>	<p>Notes SRM C white BYPASS status light is ON and the amber DNSC status light is OFF Verifies annunciators AR-104-C06 and AR-104-H03 reset..</p>	/	

\*Critical Step

#Critical Sequence

**TASK CONDITIONS:**

- A. You are the PCOM monitoring the core during shift turnover.
- B. A reactor startup is in progress in accordance with GO-100-002.
- C. Reactor power is in the Source Range.
- D. The startup is at step 61 of the B-2 Startup Control Rod Sequence. Rod 38-15 has been moved from notch position 20 to notch position 48.

**INITIATING CUE:**

Respond to any alarms on Control Room Panel 1C651 as required..



**TASK CONDITIONS:**

- A. You are the PCOM monitoring the core during shift turnover.
- B. A reactor startup is in progress in accordance with GO-100-002.
- C. Reactor power is in the Source Range.
- D. The startup is at step 61 of the B-2 Startup Control Rod Sequence. Rod 38-15 has been moved from notch position 20 to notch position 48.

**INITIATING CUE:**

Respond to any alarms on Control Room Panel 1C651 as required.

**PENNSYLVANIA POWER & LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO 84.ON.003.101 0 03/20/02 239001 4.0  
 Appl To JPM Number Rev No. Date NUREG 1123 Sys. No. K/A

Task Title: Main Steam Line Isolation and Quick Recovery in Accordance With ON-184-001

Completed By:

Terry W. Logsdon 03/20/02  
 Writer Date

Reviews:  
[Signature] 6/13/02  
 Instructor/Writer Date

Approval:

[Signature] REC 7-26-02 7-29-02  
 Requesting Supv./C.A. Head Date

[Signature] 6/13/02  
 Nuclear Training Supv. Date

Date of Performance: \_\_\_\_\_  
 \_\_\_\_\_ 50 Min \_\_\_\_\_  
 Allowed Time (Min) Time Taken (Min)

JPM Performed By: \_\_\_\_\_  
 Last First M.I. Employee #/S.S. #

Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

Evaluator Name: \_\_\_\_\_  
 Signature Typed or Printed

Comments:

**84.ON.003.101**  
**MAIN STEAM LINE ISOLATION AND QUICK RECOVERY**

**SETUP INSTRUCTIONS**

1. Initialize simulator to IC-20.
2. Place simulator to RUN.
3. Insert an MSIV isolation using file bat **MSB.MSIVISOL**
  - a. IMF RL01:B211K7A
  - b. IMF RL01:B211K7B
  - c. IMF RL01:B211K7C
  - d. IMF RL01:B211K7D
4. Perform all scram actions.
5. Do not place the MSIV control switches to CLOSE.
6. Stabilize reactor water level with HPCI/RCIC as necessary.
7. Stabilize RPV pressure with SRVs.
8. Delete the MSIV isolation logic malfunctions inserted above. \_
9. When stable, snapshot to a saved IC, number 162.

**To Perform JPM 84.ON.003.101 do the following:**

1. Initialize simulator to saved IC-162.
2. Perform the JPM.

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 84.ON.003.101**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

- A. ON-184-001, MAIN STEAM LINE ISOLATION AND QUICK RECOVERY

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Operational Activity(s):

None

**IV. TASK CONDITIONS**

- A. An MSIV isolation and reactor scram occurred from 100% reactor power.
- B. The cause of the MSIV isolation was a faulty isolation logic surveillance test procedure.
- C. HPCI and/or RCIC injection is controlling reactor water level.
- D. Reactor pressure is controlled by manual SRV actuation.
- E. Restoration of normal steam loads and turbine bypass system is required for a reactor cooldown.

**V. INITIATING CUE**

Perform a quick recovery from a Main Steam Line Isolation and reopen the MSIVs.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b>Evaluator</b></p> <ul style="list-style-type: none"> <li>• This JPM should be performed in the Simulator.</li> <li>• Select an IC that establishes 100 percent reactor power.</li> <li>• Build a file containing the following:                             <ul style="list-style-type: none"> <li>• pfs1 IMF RL01:B211K7A</li> <li>• pfs2 IMF RL01:B211K7B</li> <li>• pfs3 IMF RL01:B211K7C</li> <li>• pfs4 IMF RL01:B211K7D</li> </ul> </li> <li>• Place Simulator in RUN.</li> <li>• DEPRESS PB1.</li> <li>• DEPRESS PB2.</li> <li>• DEPRESS PB3.</li> <li>• DEPRESS PB4.</li> <li>• Perform scram actions.</li> <li>• Delete the isolation logic malfunctions</li> <li>• Allow the plant to stabilize, then, place the Simulator in FREEZE.</li> <li>• Give the student a few minutes to read the Task Conditions/Cue Sheet, and look over Control Panels.</li> <li>• Place Simulator in RUN.</li> </ul>		1	
1.	Obtain a controlled copy of ON-184-001.	Control copy obtained.	1	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*2.	Place the control switches for the MSIVs to close.	Places the control switch to CLOSE for the following: <ul style="list-style-type: none"> <li>• MN STM LINE A IB ISO HV-141-F022A</li> <li>• MN STM LINE B IB ISO HV-141-F022B</li> <li>• MN STM LINE C IB ISO HV-141-F022C</li> <li>• MN STM LINE D IB ISO HV-141-F022D</li> <li>• MN STM LINE A OB ISO HV-141-F028A</li> <li>• MN STM LINE B OB ISO HV-141-F028B</li> <li>• MN STM LINE C OB ISO HV-141-F028C</li> <li>• MN STM LINE D OB ISO HV-141-F028D</li> </ul>		
3.	Ensure the main steam line drain valves are closed.  <u>Evaluator</u> If this task is being simulated, inform the student that amber lights are ON and red lights are OFF.	Notes amber light ON an red light OFF for: <ul style="list-style-type: none"> <li>• MN STM LINE IB DRAIN HV-141-F016</li> <li>• MN STM LINE OB DRAIN HV-141-F019</li> <li>• MN STM LINE IB DRAIN TO CDSR HV-141-F021</li> </ul>	/	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
4.	<p>Ensure the Main Turbine and RFP Turbines are tripped.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that trip annunciation is ON for each turbine. The red Main Turbine Trip status light is ON and the green Reset status light is OFF. For each RFP the amber light is ON and red light OFF above the Trip &amp; Reset switch.</p>	<p>For the Main Turbine:</p> <ul style="list-style-type: none"> <li>• Notes Main Turbine trip annunciation ON</li> <li>• Red Main Turbine Trip status light is ON and the green Reset status light is OFF.</li> </ul> <p>For each RFP:</p> <ul style="list-style-type: none"> <li>• Notes RFP Trip annunciation ON</li> <li>• Amber light is ON and red light OFF above the Trip &amp; Reset switch.</li> </ul>		
5.	<p>Determines the isolation was <u>not</u> due to an EHC system malfunction.</p>	<p>States the isolation was due to a faulty logic surveillance test.</p>		
6.	<p>Closes Drip Leg Drain Valves.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF for each drain valve.</p>	<p>Depress the AUTO pushbutton on DRIP LEG DRN HS-10112. Note white light ON and red light OFF.</p> <p>Note amber light ON and red light OFF for :</p> <ul style="list-style-type: none"> <li>• DRIP LEG DRAIN HV-10112A1</li> <li>• DRIP LEG DRAIN HV-10112B1</li> <li>• DRIP LEG DRAIN HV-10112C1</li> <li>• DRIP LEG DRAIN HV-10112D1</li> </ul>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval :	Comments
7.	<p>Close the bypass valve header drain valve.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF.</p>	<p>Depress the AUTO pushbutton on HS-10108A to CLOSE HV-10108A. Note the white light is ON and the red light is OFF.</p> <p>Note amber light ON and red light OFF for HV-10108A.</p>		
8.	<p>Close the main stop valve before seat drain valves.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF.</p>	<p>Depress the CLOSE pushbutton for MSV BST DRN HV-10101A,B,C,D.</p> <p>Note amber light ON and red light OFF.</p>		
9.	<p>Close the main steam supply to the SSE.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF.</p>	<p>Depress the CLOSE pushbutton for SSE MN STM SUP CV HV-10703.</p> <p>Note amber light ON and red light OFF.</p>		

\*Critical Step

#Critical Sequence



PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
10.	<p>Ensure the drain for main steam supply to the SSE is closed.</p> <p><u>Evaluator</u> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF.</p>	<p>Notes the amber light ON and red light OFF for SSE MN STM SUP LN DRN HV-10767.</p>	<p>1</p>	
11.	<p>Ensure the drain for main steam supply to the SSE is closed.</p> <p><u>Evaluator</u> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF.</p>	<p>Notes the amber light ON and red light OFF for SSE MN STM SUP LN DRN HV-10768.</p>	<p>1</p>	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
12.	<p>Establish SSE header pressure between 0.25 and 0.5 psig using the bypass.</p> <p><b><u>Evaluator</u></b> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF for HV-10704.</p> <p>If this task is being simulated, inform the student that the amber light and red lights are ON for HV-10705 and SSE header pressure is ≈0.4 psig.</p> <p><b><u>Evaluator</u></b> After HV-10705 is throttled open several times inform the student PI-10723 is reading 0.4 psig.</p>	<p>Depress the CLOSE pushbutton for SSE PRESS CTRLR ISO HV-10704.</p> <p>Note amber light is ON and red light is OFF.</p> <p><b><u>AND</u></b></p> <p>THROTTLE OPEN SSE PRESS CTRLR BYPS HV-10705 to establish 0.25 to 0.5 psig on SSE Pressure indication PI-10723.</p> <p>Note red and amber lights ON for HV-10705.</p>		
13.	<p>Close the main steam supply to the SJAEs.</p> <p><b><u>Evaluator</u></b> If this task is being simulated, inform the student that amber lights are ON and red lights are OFF.</p>	<p>Depress the CLOSE pushbutton for MN STM SJAE ISO HV-10107.</p> <p>Notes the amber light ON and red light OFF for HV-10107.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
14.	<p>Request Shift Supervision permission and reset N4S isolation system.</p> <p><b>Evaluator</b> As the Unit Supervisor direct resetting the NSSSS Main Steam Line Isolation.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that all 4 white status lights are ON for the MSIV trip logic.</p>	<p>With direction from Shift Supervision RESET NSSSS Main Steam Line Isolation by depressing the RESET pushbutton for:</p> <ul style="list-style-type: none"> <li>• MN STM LINE DIV 1 ISO RESET HS-B21-1S32.</li> <li>• MN STM LINE DIV 2 ISO RESET HS-B21-1S33.</li> </ul> <p>Notes that all 4 white status lights are ON for the MSIV trip logic.</p>		
*15.	<p>Open the inboard MSIVs.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that amber lights are OFF and red lights ON.</p>	<p>Places the control switch to AUTO for:</p> <ul style="list-style-type: none"> <li>• MN STM LINE A IB ISO HV-141-F022A</li> <li>• MN STM LINE B IB ISO HV-141-F022B</li> <li>• MN STM LINE C IB ISO HV-141-F022C</li> <li>• MN STM LINE D IB ISO HV-141-F022D</li> </ul> <p>Notes amber light OFF and red light ON for each valve.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
#16.	<p>Perform the alignment for steam line pressurization.</p> <p><b>Evaluator</b>                      If this task is being simulated, inform the student that the red light ON and amber light OFF for following:</p> <ul style="list-style-type: none"> <li>• HV-141-F016</li> <li>• HV-141-F019</li> <li>• HV-141-F020</li> </ul>	<p>Align the steam line for pressurization as follows:</p> <ul style="list-style-type: none"> <li>• Place AC MOV OL BYPS HS-B21-1S37A to TEST.</li> <li>• Place DC MOV OL BYPS HS-B21-1S37B to TEST.</li> <li>• Place switch to OPEN for MN STM LINE IB DRAIN HV-141-F016.</li> <li>• Place switch to OPEN for MN STM LINE OB DRAIN HV-141-F019.</li> <li>• Ensure MN STEAM LINE WARM UP HV-141-F020 is OPEN by observing the red light ON and the amber light OFF.</li> <li>• After 2 minutes, place the AC MOV OL BYPS HS-B21-1S37A to NORM.</li> <li>• After 2 minutes, place the DC MOV OL BYPS HS-B21-1S37B to NORM.</li> </ul>		
#17.	<p>Observe main steam line pressure is increasing.</p>	<p>Observes pressure recorder reading on Main Stm Press PR-10101C.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
#18.	<p>Equalize the differential pressure across the outboard MSIVs to a value of 50 to 200 psid.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that the d/p is <math>\approx</math> 170 psid.</p>	<p>Compares RPV pressure with steam line pressure on PR-10101C until the d/p is between 50 and 200 psid.</p>	/	
*#19.	<p>Open the outboard MSIVs.</p> <p><b>Evaluator</b> If this task is being simulated, inform the student that the amber light is ON and the red light is OFF.</p> <p><b>Evaluator</b> Inform the student the JPM is complete.</p>	<p>When outboard MSIV d/p is between 50 and 200 psid, OPEN the outboard MSIVs by placing the control switch to AUTO for:</p> <ul style="list-style-type: none"> <li>• MN STM LINE A OB ISO HV-141-F028A</li> <li>• MN STM LINE B OB ISO HV-141-F028B</li> <li>• MN STM LINE C OB ISO HV-141-F028C</li> <li>• MN STM LINE D OB ISO HV-141-F028D</li> </ul> <p>Notes amber light OFF and red light ON for each valve.</p>	/	

\*Critical Step

#Critical Sequence

## TASK CONDITIONS

- A. An MSIV isolation and reactor scram occurred from 100% reactor power.
- B. The cause of the MSIV isolation was a faulty isolation logic surveillance test procedure.
- C. HPCI and/or RCIC injection is controlling reactor water level.
- D. Reactor pressure is controlled by manual SRV actuation.
- E. Restoration of normal steam loads and turbine bypass system is required for a reactor cooldown.

## INITIATING CUE

Perform a quick recovery from a Main Steam Line Isolation and reopen the MSIVs

## TASK CONDITIONS

- A. An MSIV isolation and reactor scram occurred from 100% reactor power.
- B. The cause of the MSIV isolation was a faulty isolation logic surveillance test procedure.
- C. HPCI and/or RCIC injection is controlling reactor water level.
- D. Reactor pressure is controlled by manual SRV actuation.
- E. Restoration of normal steam loads and turbine bypass system is required for a reactor cooldown.

## INITIATING CUE

Perform a quick recovery from a Main Steam Line Isolation and reopen the MSIVs.

**PENNSYLVANIA POWER & LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO      52.OP.005.151      0      03/21/00      20600      4.1  
 Appl To      JPM Number      Rev No.      Date      NUREG 1123 Sys. No.      K/A

Task Title:      Recovery from a Manual Closure of HPCI Isolation Valves With an Initiation Signal Present  
With a Steam Leak Developing.

Completed By:

Sidney W. Morgan  
 Writer

03/21/00  
 Date

Reviews:

[Signature]  
 Instructor/Writer

6/13/02  
 Date

Approval:

REC 7-26-02 NA [Signature]  
 Requesting Supv./C.A. Head

7-29-02  
 Date

[Signature]  
 Nuclear Training Supv.

6/13/02  
 Date

Date of Performance:

\_\_\_\_\_      25 Min  
 Allowed Time (Min)

\_\_\_\_\_   
 Time Taken (Min)

JPM Performed By:

\_\_\_\_\_   
 Last                      First                      M.I.

\_\_\_\_\_   
 Employee #/S.S. #

Performance Evaluation:      ( ) Satisfactory      ( ) Unsatisfactory

Evaluator Name:

\_\_\_\_\_   
 Signature

\_\_\_\_\_   
 Typed or Printed

Comments:



## 52.OP.005.151

# RECOVERY FROM MANUAL CLOSURE OF HPCI ISOLATION VALVES WITH AN INITIATION SIGNAL PRESENT WITH A STEAM LEAK DEVELOPING

### SETUP INSTRUCTIONS

1. Build a file (YPP.SIMJPM7) that contains following:
  - a. **bat HPB.STMLK**
  - b. **pfs 1 MRF DC188128 OPEN**
  - c. **pfs 2 MRF DC188128 CLOSE**
2. Initialize simulator to IC-20.
3. Place simulator to RUN.
4. CLOSE HPCI F002 and F003 valves and depressurize the steam line.
5. Insert HPCI spurious actuation using: **IMF HP152004**.
6. Depress the HPCI MANUAL ISOLATION PUSHBUTTON ON 1C601.
7. Override RCIC to prevent injection.
8. Trip all RFPs.
9. Initiate a manual reactor scram and perform all scram actions
10. Shut the MSIVs and drains insert: **bat MSB.MSIVISOL**.
11. Reduce RPV level to  $\approx 50$ ".
12. Start RCIC injection in Auto at 600 gpm.
13. Allow the plant to stabilize.
14. Close HPCI steam line drain when header is depressurized.
15. When stable, snapshot to a saved IC, number 161.

### To Perform JPM 52.OP.005.151 do the following:

1. Initialize simulator to saved IC 161.
2. Load file: **restorepref YPP.SIMJPM7**
3. Perform the JPM.

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 52.OP.005.151**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

OP-152-001, High Pressure Coolant Injection System

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Operational Activity(s):

44 HPCI Recovery from Isolation

**IV. TASK CONDITIONS**

- A. Due to an inadvertent initiation, HPCI has been manually isolated.
- B. After HPCI was isolated, a reactor scram occurred from a MSIV isolation. HPCI is now required to maintain vessel inventory.

**V. INITIATING CUE**

Recover from the HPCI System isolation, and establish injection to the vessel at approximately 5,000 gallons per minute.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 52.OP.005.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b></p> <ul style="list-style-type: none"> <li>• This JPM should be performed in the Simulator.</li> <li>• Select an IC that establishes 100 percent reactor power.</li> <li>• Place Simulator in RUN.</li> <li>• Insert HPCI spurious actuation malfunction <b>IMF HP152004</b>.</li> <li>• Depress the MANUAL ISOLATION pushbutton.</li> <li>• Close the F002 and F003 valves, and depressurize the steam line.</li> <li>• Perform all scram actions.</li> <li>• Shut the MSIVs.</li> <li>• Do not allow RCIC to inject.</li> <li>• Place the Simulator in FREEZE.</li> <li>• Enter the following command bat <b>HPB.STMLK</b>.</li> <li>• The <b>FAULT STATEMENT</b> will precede the expected action.</li> <li>• When the student is ready to begin, place the Simulator in RUN.</li> </ul>			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 52.OP.005.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
1.	Obtain a controlled copy of OP-152-001.	Obtains controlled copy of OP-152-001.		
2.	Select appropriate section.	Selects Section 3.10.		
3.	Review the prerequisites.  <b>Evaluator</b> Inform the student that the prerequisites have been met.	Ensures that the prerequisites have been met.		
4.	Review the precautions.	Follows applicable precautions.		
5.	Select appropriate step.	Selects Step 3.10.4.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 52.OP.005.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
6.	Check the status of HPCI components.	Notes status of the following components: <ul style="list-style-type: none"> <li>• Injection HV-155-F006 CLOSED.</li> <li>• Min Flow HV-155-F012 CLOSED.</li> <li>• L-O Cooling Water HV-156-F059 CLOSED.</li> <li>• Steam Supply IB Isolation HV-155-F002 CLOSED.</li> <li>• Steam Supply OB Isolation HV-155-F003 CLOSED.</li> <li>• Aux Oil Pump in Operation.</li> <li>• Turbine Steam Supply HV-155-F001 OPEN.</li> </ul>		
*7.	Prevent the HPCI Aux Oil Pump from starting.  <u>Evaluator</u> Insert MRF DC188128 OPEN to open the Aux Oil Pump breaker. Inform student that breaker is open.	Directs NPO to open Breaker 1D274031.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 52.OP.005.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
8.	Check that the turbine stop and control valves go closed.	Notes amber light indication for: <ul style="list-style-type: none"> <li>• HPCI TURB STOP VLV FV-15612</li> <li>• HPCI TURB CTL VLV FV-15611</li> </ul>		
*9.	Reset HPCI System Isolation.  <u>Evaluator</u> Student may not reset "A" Isolation Logic since there are no isolation signals on that side. Performance or omission of this step will not affect JPM Performance Evaluation.	<ul style="list-style-type: none"> <li>• Ensure Control Switch for HPCI STM SUPPLY IB ISO HV-155-F002 in CLOSE position.</li> <li>• Ensure Control Switch for HPCI STM SUPPLY OB ISO HV-155-F003 in CLOSE position.</li> <li>• Check Control Switch for HPCI WARM-UP LINE ISO HV-155-F100 in CLOSE position.</li> <li>• Place HPCI AUTO ISO SIG A RESET HS-E41-1S30 to RESET.</li> <li>• Ensure isolation status light extinguishes.</li> <li>• Return HPCI AUTO ISO SIG A RESET HS-E41-1S30 to NORMAL.</li> </ul>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 52.OP.005.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*9.	Continued	<ul style="list-style-type: none"> <li>• Place HPCI AUTO ISO SIG B RESET HS-E41-1S18 to RESET.</li> <li>• Ensure isolation status light extinguishes.</li> <li>• Return HPCI AUTO ISO SIG B RESET HS-E41-1S18 to NORM.</li> </ul>	1	
10.	Pressurize the steam supply line.	<ul style="list-style-type: none"> <li>• Opens HPCI STM SUPPLY OB ISO HV-155-F003.</li> <li>• Opens HPCI WARM-UP LINE ISO HV-155-F100.</li> <li>• Observes reactor steam to HPCI turbine pressure (using PI-E41-1R602) increase to approximately Reactor pressure.</li> <li>• Opens HPCI STM SUPPLY IB ISO HV-155-F002.</li> <li>• Closes HPCI WARM-UP LINE ISO HV-155-F100.</li> </ul>	1	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 52.OP.005.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
11.	Ensure the HPCI exhaust vacuum breakers are open.	Notes red light indication for: <ul style="list-style-type: none"> <li>• HPCI TURB EXH VAC HV-155-F075</li> <li>• HPCI TURB EXH VAC HV-155-F079</li> <li>• Verifies annunciators cleared.</li> </ul>	1	
12.	Verify the HPCI turbine flow controller in manual set to minimum speed.  <b>FAULTED CONDITION</b> <b>WHEN THE STOP VLV FV-15612 OPENS, A STEAM LEAK DEVELOPS IN HPCI EQUIPMENT ROOM.</b>	Verifies Man/Auto selector switch in M position. Verifies controller output meter indicates zero.		
*13.	Start the Aux Oil Pump.  <b>Evaluator</b> Insert MRF DC188128 CLOSE to close breaker. Inform student that breaker is closed.	Directs NPO to close Breaker 1D274031.	1	

\*Critical Step

#Critical Sequence



PERFORMANCE CHECKLIST

Appl. To/JPM No.: 52.OP.005.151

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
14.	Check that HPCI turbine starts.	Observes: <ul style="list-style-type: none"> <li>• Aux Oil Pump starts.</li> <li>• HPCI Injection Valve HV-155-F006 opens.</li> </ul>	1	
15.	Respond to annunciator on AR-114	Acknowledge AR-114-F04 and F05.		
16.	Observe STM SUPPLY Isolation valves not closed	Verifies and observes F002 and F003 not closing Observe Steam Leak Detection alarms.		
*17	Isolates HPCI steam supply valves.  <u>Evaluator</u> Inform the student the JPM is completed.	Closes HV-155-F002 and F003 HPCI Steam Isolation valves.  Inform the Unit Supervisor that HPCI is isolated due to a steam leak.	1	

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

- A. Due to an inadvertent initiation, HPCI has been manually isolated.
- B. After HPCI was isolated, a reactor scram occurred from an MSIV isolation. HPCI is now required to maintain vessel inventory.

## **INITIATING CUE**

Recover from the HPCI System isolation, and establish injection to the reactor vessel at approximately 5,000 gpm.

## **TASK CONDITIONS**

- A. Due to an inadvertent initiation, HPCI has been manually isolated.
- B. After HPCI was isolated, a reactor scram occurred from an MSIV isolation. HPCI is now required to maintain vessel inventory.

## **INITIATING CUE**

Recover from the HPCI System isolation, and establish injection to the reactor vessel at approximately 5,000 gpm.

**PENNSYLVANIA POWER & LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO 73.OP.011.201 0 04/02/02 223001 3.7  
 Appl To JPM Number Rev No. Date NUREG 1123 Sys. No. K/A

Task Title: Start a Containment Hydrogen Recombiner IAW OP-273-001

Completed By: Terry W. Logsdon 04/02/02 Date  
 Reviews: [Signature] 6/13/02 Date  
 Instructor/Writer

Approval: [Signature]  
Rec 7-3-02 NA 7/30/02 [Signature] 6/12/02  
 Requesting Supv./C.A. Head Date Nuclear Training Supv. Date

Date of Performance: \_\_\_\_\_  
20 Min  
 Allowed Time (Min) Time Taken (Min)

JPM Performed By: \_\_\_\_\_  
 Last First M.I. Employee #/S.S. #

Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

Evaluator Name: \_\_\_\_\_  
 Signature Typed or Printed

Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
RO 73.OP.011.201**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

OP-273-001, Containment Atmosphere Control System

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the following Operational Activity(s):

None

**IV. TASK CONDITIONS**

- A. The plant is in a post-LOCA condition, approximately 24 hours after the event.
- B. H<sub>2</sub>/O<sub>2</sub> concentrations are below combustible limits.

**V. INITIATING CUE**

Start Containment Hydrogen Recombiner(s) 1(2)E440A(B)(C)(D) in Automatic.

PERFORMANCE CHECKLIST

Appl To/JPM No: S/RO 73.OP.011.201

Student Name \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b>                      Select which Recombiner is to be operated. A and C are in the Upper Relay Room; B and D are in the Lower Relay Room. Circle the selected Recombiner in the Initiating Cue. Component Identification will be addressed according to the applicable unit upon which the task is performed.</p>			
1.	Obtain a controlled copy of OP-1(2)73-001.	Controlled copy obtained.		
2.	Select the correct procedure section to perform.	Selects Section 3.9.		
3.	Review the prerequisites.	Ensures all prerequisites have been met.		
	<p><b><u>Evaluator</u></b>                      Inform Student that all prerequisites have been met.</p>			
4.	Review the precautions.	Follows precautions as applicable.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl To/JPM No: S/RO 73.OP.011.201

Student Name \_\_\_\_\_

Step	Action	Standard	Eval	Comments
5.	Ensures the power adjust control potentiometer is set to zero (000).	Turns H2 Rcb A(B)(C)(D) Heater Power Adj HC-25796 A(B)(C)(D) counterclockwise until it stops, THEN set pot to zero (000).		
6.	Check that the MCC feeder is closed.  <u>Evaluator</u> Inform Student that the light is illuminated.	Observes that the white H2 Rcb A(B)(C)(D) Power In Available light is illuminated.		
*7.	Establish automatic temperature control.	Places the H2 Rcb A(B)(C)(D) Temp Ctl select switch HSS-25796 A(B)(C)(D) to Auto.		
*8.	Energize the Recombiner control circuitry.  <u>Evaluator</u> The red light above the switch illuminates when the switch is place to the On position.	Places the H2 Rcb A(B)(C)(D) Power Out Switch HS-25796A(B)(C)(D) to On.		
*9.	Adjust the temperature controller to the desired value.	Rotates H2 Rcb A(B)(C)(D) Temp Out Indicating Controller TIC-25796 A(B)(C)(D) until it is adjusted to 1250° F.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl To/JPM No: S/RO 73.OP.011.201

Student Name \_\_\_\_\_

Step	Action	Standard	Eval	Comments
10.	Periodically monitor temperature.  <u>Evaluator</u> Inform Student temperature is increasing. After a few seconds, inform Student that four hours have elapsed.	Monitors temperature by placing H2 Rcb A(B)(C)(D) Temp Chan Select TSS-25796 A(B)(C)(D) switch to positions: <ul style="list-style-type: none"> <li>• Channel 1</li> <li>• Channel 2</li> <li>• Channel 3</li> </ul>		
11.	Check that temperature is stabilized.  <u>Evaluator</u> Inform Student temperature is about 1250° F.	Checks temperature placing H2 Rcb A(B)(C)(D) Temp Chan Select TSS-25796 A(B)(C)(D) switch to positions: <ul style="list-style-type: none"> <li>• Channel 1</li> <li>• Channel 2</li> <li>• Channel 3</li> </ul> and observing temperature is stable at ~1250° F on TIC-25796 A(B)(C)(D).		
12.	Check power out to heater indicates 0 KW.	Observes H2 Rcb A(B)(C)(D) Power out to Heater XI-25796 A(B)(C)(D) indicates 0 KW.		

\*Critical Step

#Critical Sequence



**TASK CONDITIONS:**

- A. The plant is in a post-LOCA condition, approximately 24 hours after the event.
- B.  $H_2/O_2$  concentrations are below combustible limits.

**INITIATING CUE:**

Start Containment Hydrogen Recombiner(s) 1(2)E440A(B)(C)(D) in Automatic.

**TASK CONDITIONS:**

- A. The plant is in a post-LOCA condition, approximately 24 hours after the event.
- B.  $H_2/O_2$  concentrations are below combustible limits.

**INITIATING CUE:**

Start Containment Hydrogen Recombiner(s) 1(2)E440A(B)(C)(D) in Automatic.

**PENNSYLVANIA POWER LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO 50.EO.005.102 1 09/14/01 217000 3.6  
 Appl To JPM Number Rev No. Date NUREG 1123 Sys. No. K/A

Task Title: Connect the SLC Storage Tank to the RCIC System in Accordance With ES-150-002

Completed By: \_\_\_\_\_ Reviews: \_\_\_\_\_  
Kenneth L. Long 09/14/01 *Kenneth Long* 9/19/01  
 Writer Date Instructor/Writer Date

Approval:  
*[Signature]* 9/24/01 *[Signature]* 1/10/2002  
 Requesting Supv./C.A. Head Date Nuclear Training Supv. Date

Date of Performance: \_\_\_\_\_  
 \_\_\_\_\_ 30 Min \_\_\_\_\_  
 Allowed Time (Min) Time Taken (Min)

JPM Performed By: \_\_\_\_\_  
 Last First M.I. Employee #/S.S. #

Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

Evaluator Name: \_\_\_\_\_  
 Signature Typed or Printed

Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 50.EO.005.102**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-001, Operations Shift Policies.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

- A. ES-150-002 Boron Injection Using RCIC System

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Reactivity Manipulation(s):

None

**IV. TASK CONDITIONS**

- A. An ATWS condition exists.
- B. ADS has been inhibited.
- C. SLC injection has failed.
- D. EO-100-113, Level Power Control, is being executed in conjunction with other required procedures.
- E. Two Helpers have been assigned to you to provide physical assistance.

**V. INITIATING CUE**

Perform the operator actions in the field to line up the SLC storage tank to the RCIC System in accordance with ES-150-002.

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: S/RO 50.EO.005.102

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b></p> <ul style="list-style-type: none"> <li>Prior to performing this JPM, obtain a copy of the latest revision of ES-150-002, and mark it up as if it was actually to be performed, and provide it to the student with the Task Conditions/Initiating Cue Sheet.</li> </ul>			
1.	Review Sections 1.0 through 3.0.	Reviews the purpose, required equipment, and the precautions and limitations sections of the procedure.		
2.	Ensures that Shift Supervisor approval has been given to perform this procedure.	Notes that Section 4.1 is signed.		
3.	Obtain the required key.	Obtains the following from Shift Supervision:  SLC ES box key		
4.	Establish radio communications.	Ensure radios operating.		
	<p><b><u>Evaluator</u></b></p> <ul style="list-style-type: none"> <li>If desired an ES key may be signed out from the Ops key locker with Shift Supervision approval. DO NOT remove a key from the ES box in the Shift Supervisor's office.</li> </ul>			

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: S/RO 50.EO.005.102

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
5.	Check SLC heaters operating on 1C011 (Elevation 749', Area 29)	Ensures HSS-14802 in Auto.		
6.	At RB Elevation 749', obtain the equipment to perform the connection.  <b>Evaluator:</b> If accessing the ES Box Inventory the equipment with the student, then restore all equipment to the box and lock it. No equipment is to be removed.	Opens the RCIC ES Box and obtains equipment.		
7.	Install couplings on the pipe.	Installs one-inch couplings, taken from the RCIC ES box, on each end of the two-foot pipe From the ES Box.		
8.	Prepare pipe on the downstream side of the SLC Pump Suction Drain Valve 148F015.  <b>Evaluator</b> This elbow is located just above the floor drain between the pumps. (Center top pipe)	Remove pipe elbow on the downstream side of the SLC Pump Suction Drain Valve 148F015.		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: S/RO 50.EO.005.102

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*9.	Install piping.	Installs the two-foot section of one-inch pipe, taken from the RCIC ES box, onto the SLC Pump Suction Drain line.		
10.	Route hose.	Unreels the 300 feet of 1.5 inch non-collapsible hose down center of the northeast stairwell to the RCIC Room on RB Elevation 645'.		
*11.	Secure hose.	Ties off hose to handrail below each splice to take weight off splices, using nylon rope from the ES box.		
*12.	Connect hose to RCIC System.	Removes the cap from the RCIC Supp Pool Suction Drn 149012. Installs a one-inch coupling on RCIC Supp Pool Suction Drn Valve 149012. Using a 2.25-inch hose clamp, taken from the RCIC ES box, fasten the hose to the pipe coupling installed on RCIC Sup Pool Suction Dr Valve 149012.		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: S/RO 50.EO.005.102

Student Name: \_\_\_\_\_

Step	Action	Standard	Veal	Comments
*13.	Connect the hose to the SLC System.	Using a 2.25-inch hose clamp, taken from the RCIC ES Box, fasten the hose to the pipe coupling installed in the two-foot section of one inch pipe. on the downstream side of the SLO Pump Suction Drain Valve 148F015		

\*Critical Step

#Critical Sequence



#### **IV. TASK CONDITIONS**

- A. An ATWS condition exists.
- B. ADS has been inhibited.
- C. SLC injection has failed.
- D. EO-100-113, Level Power Control, is being executed in conjunction with other required procedures.
- E. Two Helpers have been assigned to you to provide physical assistance.

#### **V. INITIATING CUE**

Perform the operator actions in the field to Line up the SLC storage tank to the RCIC System in accordance with ES-150-002.

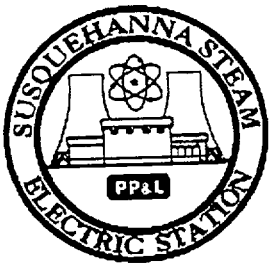
#### **IV. TASK CONDITIONS**

- A. An ATWS condition exists.
- B. ADS has been inhibited.
- C. SLC injection has failed.
- D. EO-100-113, Level Power Control, is being executed in conjunction with other required procedures.
- E. Two Helpers have been assigned to you to provide physical assistance.

#### **V. INITIATING CUE**

Perform the operator actions in the field to Line up the SLC storage tank to the RCIC System in accordance with ES-150-002.

PROCEDURE COVER SHEET

	NUCLEAR DEPARTMENT PROCEDURE	ES-150-002 Revision 13 Page 1 of 14
	BORON INJECTION VIA RCIC	
<u>QUALITY CLASSIFICATION:</u> <input checked="" type="checkbox"/> QA Program <input type="checkbox"/> Non-QA Program		<u>APPROVAL CLASSIFICATION:</u> <input checked="" type="checkbox"/> Plant <input type="checkbox"/> Non-Plant <input type="checkbox"/> Instruction
EFFECTIVE DATE: <u>3/16/01</u> PERIODIC REVIEW FREQUENCY: <u>2 Years</u> PERIODIC REVIEW DUE DATE: <u>6/30/02</u>		
<u>RECOMMENDED REVIEWS:</u>		
Procedure Owner: <u>Shift Technical Advisor-F Shift</u> Responsible Supervisor: <u>Shift Supervisor-F Shift</u> Responsible FUM: <u>Manager-Nuclear Operations</u> Responsible Approver: <u>Manager-Nuclear Operations</u>		

FORM NDAP-QA-0002-1, Rev. 2, Page 1 of 1

ES-150-002  
Revision 13  
Page 2 of 14

1. PURPOSE

This procedure provides instruction for injecting contents of SBLC global tank (sodium pentaborate solution) into the RPV using the RCIC system if SBLC pumps are not available.

2. REQUIRED EQUIPMENT

2.1 Control Room

2.1.1 SBLC ES Tool Box Key (located in SS Office ES Tool Box)

2.2 Reactor Building Elevation 749', Area 29 (east wall near SBLC)

2.2.1 1.5 inch Non-Collapsible Hose (approximately 300 feet located on hose reel)

2.2.2 SBLC ES Tool Box

- a. Pipe Wrench (2)
- b. Flathead Screwdriver (1)
- c. Hose Clamps (2)
- d. Face Shield (1)
- e. Rubber Gloves (1 pair)
- f. Leather gloves (3 pair)
- g. 1 inch Pipe Couplings (3)
- h. 1 inch Pipe, 2 foot long (1)
- i. Nylon Rope, 10 foot long (2)

ES-150-002  
Revision 13  
Page 3 of 14

3. PRECAUTIONS AND LIMITATIONS

- 3.1 This procedure shall only be performed under direction of Shift Supervisor and only when directed by an EO, EP-DS or another ES procedure.
- 3.2 If for any reason a particular section of this procedure and accompanying restoration are not used, N/A should be entered in appropriate signoffs and remaining sections completed as necessary.
- 3.3 This procedure requires at least three individuals to unravel and route a non-collapsible rubber hose from the SBLC skid to the RCIC room.

ES-150-002  
Revision 13  
Page 4 of 14

4. PROCEDURE

4.1 OBTAIN permission of Shift Supervisor to perform this procedure.

Shift Supervisor | Today | Now  
Shift Supervisor | Date | Time

NOTE: The following two steps (4.2 and 4.3) may be performed in parallel.

4.2 INITIATE bypass of RCIC Turbine Isolations and Trips, as necessary, in accordance with ES-150-001.

4.3 ESTABLISH radio communications between field operators.

\_\_\_\_\_  
Confirmed By

4.4 ALIGN SBLC Storage Tank to RCIC System

4.4.1 At Standby Liquid Control Panel 1C011, ENSURE Standby Liquid Control Storage Tank Heaters HSS-14802 in Auto (elevation. 749', area 29).

\_\_\_\_\_  
Confirmed By

NOTE: Placing HSS-14802 in Auto maintains Heater B (40 KW) de-energized while Heater A (10 KW) cycles on and off to maintain temperature of solution 85 - 95°F. Both heaters remain covered with solution during this evolution which does not allow tank contents to drop below 200 gallons per EO-000-113, Level/Power Control.

4.4.2 PERFORM following at SBLC skid:

a. ATTACH 1 inch couplings to each end of the two foot section of 1 inch diameter pipe (from ES tool box).

\_\_\_\_\_  
Confirmed By

ES-150-002  
Revision 13  
Page 5 of 14

- b. REMOVE pipe elbow downstream of SBLC Injection Pumps Suction Drain Vlv 148F015.

\_\_\_\_\_  
Confirmed By

- c. INSTALL two foot section of 1 inch diameter pipe to end of pipe where elbow was removed.

\_\_\_\_\_  
Confirmed By

NOTE (1): The following items from SBLC ES tool box will be needed in the RCIC room:

- Pipe wrenches (2)
- 1 inch pipe coupling (1)
- 2.25 inch hose clamp (1)

NOTE (2): Approximately 20 extra feet of hose exists. The excess hose may be coiled near the SBLC skid.

4.4.3 UNREEL the 1.5 inch non-collapsible rubber hose and direct it to the RCIC room via the north-east stairwell as follows:

- a. ROUTE hose across 749' floor to stairwell landing and under handrail

\_\_\_\_\_  
Confirmed By

- b. DIRECT hose so that its final configuration is straight down through the center of the stairwell.

\_\_\_\_\_  
Confirmed By

4.4.4 SECURE hose to handrail below each splice to take weight off splices in vertical run.

\_\_\_\_\_  
Confirmed By

ES-150-002  
Revision 13  
Page 6 of 14

4.4.5 PERFORM following in the RCIC room:

- a. REMOVE CAP from RCIC Supp Pool Suction Drn 149012.

\_\_\_\_\_  
Confirmed By

- b. INSTALL 1 inch coupling to RCIC Supp Pool Suction Drn 149012 drain line.

\_\_\_\_\_  
Confirmed By

- c. CONNECT 1.5 inch non-collapsible hose with hose clamp to pipe coupling at 149012 drain line.

\_\_\_\_\_  
Confirmed By

4.4.6 At SBLC skid, using hose clamp, CONNECT non-collapsible hose to pipe coupling installed on 2 foot pipe at SBLC Injection Pumps Suction Drain Vlv 148F015.

\_\_\_\_\_  
Confirmed By

4.5 ESTABLISH communications with Control Room and:

- 4.5.1 ENSURE Reactor Water Cleanup System isolated or Filter/Demins bypassed and isolated.

\_\_\_\_\_  
Confirmed By

- 4.5.2 ENSURE RCIC in operation injecting into RPV in accordance with OP-150-001.

\_\_\_\_\_  
Confirmed By

- 4.5.3 INFORM Control Room Operator that following steps may affect RCIC suction pressure.

\_\_\_\_\_  
Confirmed By



**PENNSYLVANIA POWER & LIGHT COMPANY  
JOB PERFORMANCE MEASURE  
APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO      57.OP.001.001      0      05/06/96      262001      3.4  
 Appl To      JPM Number      Rev No.      Date      NUREG 1123 Sys. No.      K/A

Task Title: Place The Vital AC Un-interruptible Power Supply AC System In Service In Accordance With OP-157-001

Completed By: \_\_\_\_\_      Date: 05/06/96  
 Charles W. Hess      Date  
 Writer

Reviews: \_\_\_\_\_      Date: 6/13/02  
 Instructor/Writer      Date

Approval: \_\_\_\_\_  
 Requesting Supv./C.A. Head      Date: 7/30/02

*REC* 7-30-02 NA      Date: 7/30/02  
 Requesting Supv./C.A. Head      Date

\_\_\_\_\_      Date: 6/13/02  
 Nuclear Training Supv.      Date

Date of Performance: \_\_\_\_\_

\_\_\_\_\_      25 Min      \_\_\_\_\_  
 Allowed Time (Min)      Time Taken (Min)

JPM Performed By: \_\_\_\_\_

\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
 Last      First      M.I.      Employee #/S.S. #

Performance Evaluation:    ( ) Satisfactory    ( ) Unsatisfactory

Evaluator Name: \_\_\_\_\_

\_\_\_\_\_      \_\_\_\_\_  
 Signature      Typed or Printed

Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 57.OP.001.001**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
  - 1. Whenever any electrical panel is opened for inspection during JPM performance.
  - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

**II. REFERENCES**

OP-157-001, Computer and Vital UPS

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Operational Activity(s):

None

**IV. TASK CONDITIONS**

- A. Unit 1 is in a Refueling and Inspection Outage.
- B. The Vital AC Un-interruptible Power Supply (UPS) has been completely de-energized for maintenance.
- C. Maintenance has been completed and all permits have been cleared.

**V. INITIATING CUE**

Place the Vital AC Un-interruptible AC System in service.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 57.OP.001.001

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b>                      If in service at the plant, the following conditions exist would exist if maintenance has been completed on the Vital UPS Panel:</p> <ul style="list-style-type: none"> <li>• CB-1, CB-2, CB-4, and CB-6 are open and their OPEN lights are illuminated.</li> <li>• CB-8 is open.</li> <li>• PL6 is illuminated.</li> <li>• PL17, PL3, PL1, PL2, PL5, PL18, PL16, and PL15 are extinguished.</li> <li>• All meters indicate 0. Pay particular attention to A1, V1, V3, and A3. They all must have their respective meter select switches turned on to obtain a reading. Normal lineup is for a position selected other than OFF.</li> </ul>			
1.	Obtain a controlled copy of OP-157-001.	Controlled copy obtained.		
2.	Select the correct section to perform.	Selects Section 3.1.		
3.	Review the prerequisites.	Ensures that all prerequisites have been met.		
	<p><b><u>Evaluator</u></b>                      Inform the student that all prerequisites have been met.</p>			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 57.OP.001.001

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
4.	Review the precautions.  <b>Evaluator</b> Meter select switches SW3, SW2, SW4, and SW5. Must be in an ON position in order to get indication on A1 (SW3), V1 (SW2), V3 (SW4) and A3 (SW5). If the student requires a reading from any of these meters, provide a response of 0 if the appropriate switch is <u>NOT</u> in an ON position.	Follows precautions as applicable.		
*5.	Charge the inverter capacitors.  <b>Evaluator</b> After a few seconds, inform the student that the PRECHARGE light has illuminated.  When voltage is checked, inform the student that V2 indicates about 260 VDC.	Depresses and holds the Precharge Pushbutton.  Notes when the PRECHARGE light illuminates.  Notes that Input Voltage Meter V2 indicates greater than 250 VDC.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 57.OP.001.001

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*6.	<p>Close the Battery Input Breaker CB-1.</p> <p><b><u>Evaluator</u></b>                      When CB-1 is closed:</p> <ul style="list-style-type: none"> <li>• PL10 illuminates.</li> <li>• PL9 extinguishes.</li> <li>• PL17 illuminates.</li> <li>• V2 increases to battery voltage <math>\approx</math> 268 VDC</li> <li>• V1 increases to <math>\approx</math> 208 volts if SW2 is in an ON position.</li> <li>• F1 increases to 60 Hertz.</li> </ul>	<p>Lifts up to close.</p> <p>Releases the Precharge pushbutton.</p>	<p>1</p>	
7.	<p>Check inverter parameters.</p> <p><b><u>Evaluator</u></b>                      Inform the student:                      V2 is 264 volts,                      V1 is 208 volts if SW2 is turned ON (0 if SW2 is in OFF),                      F1 is 60 Hertz.</p>	<p>Notes the following parameters:</p> <ul style="list-style-type: none"> <li>• Input Voltage V2</li> <li>• Output Voltage V1</li> <li>• Frequency F1</li> </ul>	<p>1</p>	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 57.OP.001.001

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*8.	<p>Close the Alternate AC Input Breaker CB-6.</p> <p><b><u>Evaluator</u></b>                      When CB-6 is closed:</p> <ul style="list-style-type: none"> <li>• PL14 illuminates.</li> <li>• PL13 extinguishes.</li> <li>• PL16 illuminates.</li> <li>• V4 increases to <math>\approx</math> 480 VAC.</li> <li>• V3 increases to <math>\approx</math> 208 VAC if SW4 is in an ON position.</li> <li>• F3 increases to <math>\approx</math> 60 Hertz.</li> </ul>	<p>Lifts up to close</p>	<p>1</p>	
9.	<p>Check alternate power parameters.</p> <p><b><u>Evaluator</u></b>                      Inform student:                      V4 is 480 volts                      V3 is 208 volts if SW4 ON (0 if SW4 OFF)                      F3 is 60 Hertz.</p>	<p>Notes the following parameters:</p> <ul style="list-style-type: none"> <li>• Input Voltage V4</li> <li>• Output Voltage V3</li> <li>• Frequency F3</li> </ul>	<p>1</p>	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 57.OP.001.001

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*10.	<p>Close Alternate Source AC Input Static Switch Breaker CB-4.</p> <p><b><u>Evaluator</u></b> When CB-4 is closed:</p> <ul style="list-style-type: none"> <li>• PL8 illuminates.</li> <li>• PL7 extinguishes.</li> <li>• PL3 illuminates.</li> </ul>	Lifts up to close.	1	
11.	<p>Check that the inverter and alternate power are synchronized.</p> <p><b><u>Evaluator</u></b> Inform the student that PL3 is illuminated.</p>	Notes that the Sync Potential light PL3 is illuminated.		
*12.	<p>Check that the Manual Bypass Switch is in the NORMAL position.</p> <p><b><u>Evaluator</u></b> Inform student that PL6 is still illuminated.</p>	Notes that the Normal Mode light PL6 is illuminated.		
*13.	<p>Load the inverter.</p> <p><b><u>Evaluator</u></b> Inform student that when PB1 is depressed</p> <ul style="list-style-type: none"> <li>• PL1 illuminates.</li> <li>• PL2 extinguishes.</li> </ul>	<p>Depresses the Inverter To Load pushbutton PB1.</p> <p>Notes that the INVERTER SUPPLY light PL1 illuminates.</p>	1	

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 57.OP.001.001

Student Name: \_\_\_\_\_

Step	Action	Standard	Eval	Comments
*14.	Close the System Output Breaker CB-2.	Lifts up to close.	/	
15	Close the desired load breakers on Panel 1Y629.  <b><u>Evaluator</u></b> Inform the student that all desired breakers are closed.	Closes desired breakers.		
16..	Check that the inverter has picked up the load.  <b><u>Evaluator</u></b> Inform the student that A1 indicates $\leq 83$ amps. Ensure that SW3 is in an ON position prior to providing the reading.	Checks that the indication on the Output Current Meter A1 is $\leq 83$ amps.	/	

\*Critical Step

#Critical Sequence



**TASK CONDITIONS**

- A. Unit 1 is in a Refueling and Inspection Outage.
- B. The Vital AC Un-interruptible Power Supply (UPS) has been completely de-energized for maintenance.
- C. Maintenance has been completed and all permits have been cleared.

**INITIATING CUE**

Place the Vital AC Un-interruptible System in service.

### **TASK CONDITIONS**

- A. Unit 1 is in a Refueling and Inspection Outage.
- B. The Vital AC Un-interruptible Power Supply (UPS) has been completely de-energized for maintenance.
- C. Maintenance has been completed and all permits have been cleared.

### **INITIATING CUE**

Place the Vital AC Un-interruptible AC System in service.