

**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.

**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  
Writer

03/20/02  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
Date

  
Nuclear Training Supv.

6/13/02  
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:

**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

Page 3 of 11

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

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

Step	Action	Standard	Eval	Comments
	<b><u>Evaluator</u></b> <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.	Obtain a controlled copy of ON-184-001.	Control copy obtained.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 11

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.  <b>Evaluator</b> 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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 11

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><u>Evaluator</u></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><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 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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 6 of 11

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><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.</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><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.</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><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.</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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 7 of 11

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><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>	Notes the amber light ON and red light OFF for SSE MN STM SUP LN DRN HV-10767.		
11.	<p>Ensure the drain for main steam supply to the SSE is closed.</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>	Notes the amber light ON and red light OFF for SSE MN STM SUP LN DRN HV-10768.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1



# PERFORMANCE CHECKLIST

Page 8 of 11

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 CTLR 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 CTLR 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 SJAIE ISO HV-10107.</p> <p>Notes the amber light ON and red light OFF for HV-10107.</p>		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 9 of 11

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><u>Evaluator</u></b> As the Unit Supervisor direct resetting the NSSSS Main Steam Line Isolation.</p> <p><b><u>Evaluator</u></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><u>Evaluator</u></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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 10 of 11

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><u>Evaluator</u></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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 11 of 11

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><u>Evaluator</u></b> If this task is being simulated, inform the student that the d/p is ≈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><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.</p> <p><b><u>Evaluator</u></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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

## **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.

#### 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.

**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  
Writer

03/06/02  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_ 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:



**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

Page 3 of 5

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

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

Step	Action	Standard	Eval	Comments
	<b>Evaluator</b> <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><b>pfs1 IMF PM03: 1P501A</b></li> <li><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.	Monitor Reactor water level.  Using ON-145-001, RPV Level Control System Malfunction, Section 3.1, perform the following.	Verify RPV level approximately +35 inches NR using PICSY/CRT format or 1C652 (SIP).		
2.	Verify RFP SPD CTL/DEMAND SIGNAL SIC-C32-1R601A CONTROLLER in AUTO.	Verify controller green light is on and amber light is off.		
3.	Place the failed RFP SPD CTL/DEMAND SIGNAL SIC-C32-1R601A CONTROLLER in MANUAL.	Depress the Manual pushbutton, verify amber light is on, green off.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 5

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

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

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

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 5

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

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

Step	Action	Standard	Eval	Comments
	<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."			
*6.	Slow Lower MSC on RFPT "A" until speed decreases.	Using HS-12730A1 SLOW LOWER RFPT A MTR SPD CHANGER until speed decreases.		
	<b><u>Evaluator</u></b> If this task is being simulated, inform the student that RFPT "A" speed is decreasing.	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.		
	<b><u>Evaluator</u></b> If this task is being simulated, inform the student that amber light is off and red on.			
*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.		
	<b><u>Evaluator</u></b> <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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

### **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.

**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.

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

<u>S/RO</u>	<u>78.AR.003.104</u>	<u>0</u>	<u>03/20/02</u>	<u>215004</u>	<u>3.5</u>
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:

N/A  
Requesting Supv./C.A. Head

\_\_\_\_\_  
Date

  
Nuclear Training Supv.

6/13/02  
Date

Date of Performance:

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

18 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 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 Reactivity PCO.
- 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**

Continue the reactor startup in accordance with GO-100-002, beginning at Step 6.21.7.

# PERFORMANCE CHECKLIST

Page 3 of 5

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

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

Step	Action	Standard	Eval	Comments
	<b><u>Evaluator</u></b> <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 <b>RUN</b>.</li> </ul>			
1.	Obtain a copy of GO-100-002.	Obtains a controlled copy.		
2.	Begin at the correct step.	Selects Step 6.21.7.		
3.	Review the rod pull procedure.	Reviews the copy of the Startup Control Rod Sequence.		
*4.	Select and pull the next appropriate control rod to achieve criticality.	Selects control rod 14-23 in accordance with the pull sheet.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 5

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

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

Step	Action	Standard	Eval	Comments
	<p><b>FAULT STATEMENT:</b> AFTER THE COMPLETION OF THE NEXT ACTION, SRM CHANNEL "C" WILL FAIL DOWNSCALE.</p> <p>When rod withdrawal has begun, <b>DEPRESS P-1</b> to cause the SRM C failure.</p>			
5.	Acknowledge annunciators and control rod block condition and refers to applicable Annunciator Response procedures.	Obtains procedure AR-104-001.		
6.	Determine SRM causing alarm.	Using PICSY and/or 1C652 indications, determines that SRM C has failed. Notes the amber SRM DNSC status light ON.		
7.	Check SRM detector position.	Notes SRM detectors white IN status light is ON and the white OUT status light is OFF.		
8.	Perform SRM channel check.	Compares the affected SRM indication with other channels using PICSY or 1C652.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 5

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

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

Step	Action	Standard	Eval	Comments
9.	Determine the C SRM has failed downscale.  <b><u>Evaluator</u></b> When SRO concurrence is requested to bypass 'C' SRM, state permission is granted to bypass 'C' SRM.	States the C SRM has failed downscale.		
*10.	Bypass the C SRM.	Places the SRM bypass switch for the C channel to the BYPASS position.  Notes SRM C white BYPASS status light is ON and the amber DNSC status light is OFF.		
11.	Ensure the SRM downscale condition clears.  <b><u>Evaluator</u></b> When the rod block is reset, instruct the student to stop.	Verifies annunciators AR-104-C06 and AR-104-H03 reset.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

**TASK CONDITIONS:**

- A. You are the Reactivity PCO.
- 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:**

Continue the reactor startup in accordance with GO-100-002, beginning at Step 6.21.7.

**TASK CONDITIONS:**

- A. You are the Reactivity PCO.
- 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:**

Continue the reactor startup in accordance with GO-100-002, beginning at Step 6.21.7.

**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.

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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:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
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:



**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

Page 3 of 6

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

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

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></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>Large break LOCA.</li> <li>Both loops of RHR OOS.</li> <li>Both CS loops failed to auto start.</li> <li>Manual initiation pushbutton overridden off for "B" Core Spray Loop.</li> </ol> </li> </ul>			
*1.	<p>Initiate "A" Loop of Core Spray.</p> <p><b><u>Evaluator</u></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>		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 6

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

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

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

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 6

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.  <b><u>Evaluator</u></b> 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.  <b><u>Evaluator</u></b> This will become a CRITICAL STEP IF RPV PRESS $\geq 436$ 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.  <b><u>Evaluator</u></b> <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 F031 B; amber light on.</li> </ul>	Throttles open HV-152-F005B to obtain $\geq 6,000$ but $\leq 6,350$ gpm.   Verifies MIN FLOW HV-152-F031 B closes.		
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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 6 of 6

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>	Checks CS Unit Coolers 1V211A and/or C AUTO STARTS as indicated on 1C681.		

\*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.

## **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.



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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  
Writer

03/29/02  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

JA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
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:

**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

Page 3 of 5

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

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

Step	Action	Standard	Eval	Comments
	<b><u>Evaluator</u></b> <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.		
	<b><u>Evaluator</u></b> If asked, inform the student "bypassing MSIV and CIG interlocks is directed by Emergency Operating Procedures."			

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 5

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>		
*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>		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 5

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.		
	<b><u>FAULT STATEMENT:</u></b> <b>SV-12605 DOES NOT OPEN.</b>			
*7.	Restore CIG System.	Restores CIG System as follows:		
	(HC)	• Open INST GAS CMP SUCT ISO HV-12603.		
	(HC)	• Open INST GAS TO CONTN ISO SV-12651.		
	(HC)	• Open INST GAS CMP OB SUCT ISO SV-12605.		
		Note SV-12605 did not open.		
	(HC)	Directs NPO to cross-tie instrument air to 90# CIG header by slowly opening 12672 and 12667.		
	<b><u>Evaluator</u></b> To cross-tie instrument air: <b>MRF PC125001 OPEN</b> as NPO inform student that IA is cross-tied to CIG.			

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

### **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.

**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.



**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

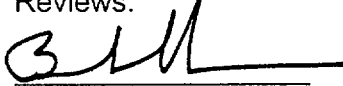
Task Title: Initiate The SBLC System In Accordance With OP-153-001 With RWCU F004 Valve Failing to Isolate

Completed By:

Kenneth L. Long  
Writer

04/30/98  
Date

Reviews:

      6/13/02  
Instructor/Writer      Date

Approval:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
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:

**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

Page 3 of 5

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>			
1.	Obtain a key for the SBLC Manual Initiation Switch.	Obtains key.		
*2.	<p>(HC) 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>	Places the SBLC Manual Initiation Switch in the START position.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 5

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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 5

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><u>Evaluator</u></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><u>Evaluator</u></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><u>Evaluator</u></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><u>Evaluator</u></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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

### **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.

**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.



**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:

  
Instructor/Writer

6/13/02  
Date

Approval:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
Date

  
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:

**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

Page 3 of 9

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

STCP-QA-125B

Rev. 1 (9/92)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 9

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><u>Evaluator</u></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

STCP-QA-125B

Rev. 1 (9/92)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 9

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.  <b>Evaluator</b> Insert <b>MRF DC188128 OPEN</b> to open the Aux Oil Pump breaker. Inform student that breaker is open.	Directs NPO to open Breaker 1D274031.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 1 (9/92)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 6 of 9

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.  <b>Evaluator</b> 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

STCP-QA-125B

Rev. 1 (9/92)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 7 of 9

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>		
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>		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 1 (9/92)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 8 of 9

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>		
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.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 1 (9/92)

Page 1 of 1



# PERFORMANCE CHECKLIST

Page 9 of 9

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

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

Step	Action	Standard	Eval	Comments
14.	Check that HPCI turbine starts.	Observes: • Aux Oil Pump starts. • HPCI Injection Valve HV-155-F006 opens.		
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.	Closes HV-155-F002 and F003 HPCI Steam Isolation valves.		
	<b><u>Evaluator</u></b> Inform the student the JPM is completed.	Inform the Unit Supervisor that HPCI is isolated due to a steam leak.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 1 (9/92)

Page 1 of 1

### **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      13.EO.001.103      0      03/20/02      295031 EA1.08      3.8  
Appl To      JPM Number      Rev No.      Date      NUREG 1123 Sys. No.      K/A


Task Title: Fire Protection System Crosstie to RHRSW, ES-013-001 (In-Plant)

Completed By:

Terry W. Logsdon  
Writer

03/20/02  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
Date

  
Nuclear Training Supv.

6/13/02  
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 13.EO.001.103**

**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. ES-013-001 Fire Protection System Crosstie to RHRSW

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. A LOCA and Station Blackout have occurred, and all control rods are full-in.
- B. A Rapid Depressurization has been manually performed IAW EO-000-112, with reactor pressure at approximately 30 psig and stable.
- C. The EOPs direct implementing ES-013-001, Fire Protection System Crosstie to RHRSW.
- D. The ESW Pumphouse hose connection from the hydrant at Hose House 1FH122 to Loop A RHRSW has been completed.
- E. The Diesel Engine-Driven Fire Pump, OP511, is operating IAW OP-013-001.

**V. INITIATING CUE**

Crosstie the Fire Protection System to supply Unit 2 Loop A RHRSW and align the system for Suppression Chamber Sprays IAW ES-013-001, Fire Protection System Crosstie to RHRSW.

# PERFORMANCE CHECKLIST

Page 3 of 5

Appl. To/JPM No.: S/RO 13.EO.001.103

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

Step	Action	Standard	Eval	Comments
	<b><u>Evaluator</u></b> <ul style="list-style-type: none"> <li>Prior to performing this JPM, obtain a copy of the latest revision of ES-013-001, 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.	Review all sections.  Follows all precautions as applicable.		
2.	Notes Shift Supervisor approval to perform Section 4.0.	Observes Shift Supervisor signature, date, and time in Step 4.1 of the procedure.		
3.	Locates the correct procedure section.	Refers to section 4.9 and 4.12.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 5

Appl. To/JPM No.: S/RO 13.EO.001.103

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

Step	Action	Standard	Eval	Comments
*4.	Open RHRSW Crosstie Valves.  <b><u>Evaluator</u></b> Inform the student that the valves are open, when student indicates he/she opened the valves.	<b>At 34-670'</b> , RHR Pump Room overhead • OPEN RHRSW CROSSTIE HV-212-F073A • OPEN RHRSW CROSSTIE HV-212-F075A • ENSURE RHRSW/RHR LOOP A CROSSTIE DRAIN VLV HV-212-F074A CLOSED		
*5.	Ensure Unit 2 RHRSW inlet valve closed.  <b><u>Evaluator</u></b> Inform student that valve is closed.  <b><u>Evaluator</u></b> Exiting Unit 2 RCA is required for the next action but will not be done.	<b>At 34-645'</b> , ENSURE RHRSW HX A INLET HV-212-F010A CLOSED.		
6.	Ensure Unit 1 RHRSW inlet valve closed.  <b><u>Evaluator</u></b> Inform student that Unit 1 valve is closed.	<b>At 29-645'</b> , ENSURE RHRSW HX A INLET HV-112-F010A CLOSED.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 5

Appl. To/JPM No.: S/RO 13.EO.001.103

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

Step	Action	Standard	Eval	Comments
*7.	Open RHRSW Loop A Hose Connection Isolation Valve 012062.  <u>Evaluator</u> Inform student that valve is open.	Direct Plant Operator to OPEN RHRSW LOOP A Hose Conn Iso Valve 012062.		
*8.	Ensure RHR Injection Outboard Isolation Valve HV-251-F015A CLOSED.  <u>Evaluator</u> Inform student that valve is closed.	At 34-704', ENSURE RHR INJ OB ISO HV-251-F015A CLOSED.		
*9.	Open Suppression Chamber Spray Test Shutoff Valve HV-251-F028A.  <u>Evaluator</u> Inform student that valve is open.	At 34-704', OPEN SUPP CHMBR SPR TEST SHUTOFF HV-251-F028A.		
*10.	Open Suppression Chamber Spray Control Valve HV-251-F027A.  <u>Evaluator</u> Inform student that valve is open.  This completes the JPM.	At 34-704', OPEN SUPP CHMBR SPRAY CTL HV-251-F027A.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1



## **TASK CONDITIONS**

- A. A LOCA and Station Blackout has occurred, and all control rods are full in.
- B. A Rapid Depressurization has been manually performed IAW EO-000-112, with the reactor pressure at approximately 30 psig and stable.
- C. The EOPs direct implementing ES-013-001, Fire Protection System Crosstie to RHRSW.
- D. The ESW Pumphouse hose connection from the hydrant at Hose House 1FH122 to Loop A RHRSW has been completed.
- E. The Diesel Engine-Driven Fire Pump OP511 is operating IAW OP-013-001.

## **INITIATING CUE**

Crosstie the Fire Protection System to supply Unit 2 Loop A RHRSW and align the system for Suppression Chamber Sprays IAW ES-013-001, Fire Protection System Crosstie to RHRSW.

## **TASK CONDITIONS**

- A. A LOCA and Station Blackout has occurred, and all control rods are full in.
- B. A Rapid Depressurization has been manually performed IAW EO-000-112, with the reactor pressure at approximately 30 psig and stable.
- C. The EOPs direct implementing ES-013-001, Fire Protection System Crosstie to RHRSW.
- D. The ESW Pumphouse hose connection from the hydrant at Hose House 1FH122 to Loop A RHRSW has been completed.
- E. The Diesel Engine-Driven Fire Pump OP511 is operating IAW OP-013-001.

## **INITIATING CUE**

Crosstie the Fire Protection System to supply Unit 2 Loop A RHRSW and align the system for Suppression Chamber Sprays IAW ES-013-001, Fire Protection System Crosstie to RHRSW.

**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:

Charles W. Hess  
Writer

05/06/96  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
Date

  
Nuclear Training Supv.

6/13/02  
Date

Date of Performance:

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

25 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

Page 3 of 8

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

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

Step	Action	Standard	Eval	Comments
	<p><b><u>Evaluator</u></b>  The following conditions exist:</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.</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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 8

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

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

Step	Action	Standard	Eval	Comments
4.	Review the precautions.  <b><u>Evaluator</u></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><u>Evaluator</u></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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 5 of 8

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 268</math> VDC</li> <li>• V1 increases to <math>\approx 208</math> 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>		
7.	<p>Check inverter parameters.</p> <p><b><u>Evaluator</u></b>            Inform the student that V2 is 264 volts, V1 is 208 volts if SW2 is turned ON (0 if SW2 is in OFF), and 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>		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 6 of 8

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 480</math> VAC.</li> <li>• V3 increases to <math>\approx 208</math> VAC if SW4 is in an ON position.</li> <li>• F3 increases to <math>\approx 60</math> Hertz.</li> </ul>	Lifts up to close		
9.	<p>Check alternate power parameters.</p> <p><b><u>Evaluator</u></b>            Inform the student that V4 is 480 volts, V3 is 208 volts if SW4 is turned ON (0 if SW4 is in OFF), and 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>		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1



# PERFORMANCE CHECKLIST

Page 7 of 8

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.		
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 the student that PL6 is illuminated.</p>	Notes that the Normal Mode light PL6 is illuminated.		
*13.	<p>Load the inverter.</p> <p><b><u>Evaluator</u></b> Inform the student that PL1 has illuminated.</p>	<p>Depresses the Inverter To Load pushbutton PB1.</p> <p>Notes that the INVERTER SUPPLY light PL1 illuminates.</p>		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 8 of 8

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.  <u><b>Evaluator</b></u> When CB-2 is closed: <ul style="list-style-type: none"> <li>• PL1 illuminates.</li> <li>• PL2 extinguishes.</li> </ul>	Lifts up to close.		
15.	Close the desired load breakers on Panel 1Y629.  <u><b>Evaluator</b></u> Inform the student that all desired breakers are closed.	Closes desired breakers.		
16.	Check that the inverter has picked up the load.  <u><b>Evaluator</b></u> Inform the student that A1 indicates <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

STCP-QA-125B

Rev. 2, (9/93)

Page 1 of 1

### **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.

**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  
Writer

04/02/02  
Date

Reviews:

  
Instructor/Writer

6/13/02  
Date

Approval:

NA  
Requesting Supv./C.A. Head

\_\_\_\_\_  
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:

**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.  $H_2/O_2$  concentrations are below combustible limits.

**V. INITIATING CUE**

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

# PERFORMANCE CHECKLIST

Page 3 of 5

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

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

Step	Action	Standard	Eval	Comments
	<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.			
1.	Obtain a controlled copy of OP-273-001.	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.		
	<b><u>Evaluator</u></b> Inform Student that all prerequisites have been met.			
4.	Review the precautions.	Follows precautions as applicable.		

\*Critical Step

#Critical Sequence

STCP-QA-125B

Rev. 2, 09/93

Page 1 of 1

# PERFORMANCE CHECKLIST

Page 4 of 5

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 will illuminate.	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

STCP-QA-125B

Rev. 2, 09/93

Page 1 of 1



# PERFORMANCE CHECKLIST

Page 5 of 5

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

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

Step	Action	Standard	Eval	Comments
10.	Periodically monitor temperature.  <b><u>Evaluator</u></b> 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.  <b><u>Evaluator</u></b> 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

STCP-QA-125B

Rev. 2, 09/93

Page 1 of 1

**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) 2E440A(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) 2E440A(B)(C)(D) in Automatic.