

**PPL SUSQUEHANNA, LLC**

**JOB PERFORMANCE MEASURE**

<u>S/RO</u>	<u>98.GO.001.151</u>	<u>0</u>	<u>09/28/05</u>	<u>262001</u>	<u>A4.04</u>	<u>3.6/3.7</u>
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

Task Title: Synchronize the Main Generator

Completed By:		Validated	
Rich Chin	09/28/05		
Writer	Date	Instructor/Writer	Date

**Approval:**

Nuclear Trng. Supv. \_\_\_\_\_ Date \_\_\_\_\_

Date of Performance:
25
Validation Time (Min.)
Time Taken (Min.)

JPM Performed By:

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

\_\_\_\_\_  
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 98.GO.001.101**

**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 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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

- A. OP-198-001, Main Generator System (Rev. 3)
- B. GO-100-002, Plant Startup, Heatup And Power Operation (Rev. 49)

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. A Plant Startup is in progress, Reactor Power is ~ 19%
- B. Main turbine Startup is complete, the turbine is @ ~ 1800 RPM awaiting Main Generator Startup.
- C. Generator Prestart Lineup is complete.
- D. GO-100-002, Plant Startup, Heatup And Power Operation has been completed through step 5.61.2

**V. INITIATING CUE**

Synchronize the Main Generator to the Grid IAW section 2.2 of OP-198-001, Main Generator System.

**VI. TASK STANDARD**

Main generator synchronized to grid.

**VII. TASK SAFETY SIGNIFICANCE**

Incorrect performance of this task could lead to grid instabilities and/or LOOP (challenging the EDG to perform their function).

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <ul style="list-style-type: none"> <li>Establish task conditions as directed on attached setup instructions.</li> <li>When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN</b>.</li> <li>Due to the nature of this JPM, the candidate may perform an extensive board walkdown to determine current plant status "Prior" to beginning the JPM:</li> <li>The FAULTED step in this JPM is preceded by a fault statement in <b>BOLD TYPE WITH ALL CAPITAL LETTERS</b>.</li> </ul> <p><b><u>Simulator Setup</u></b></p> <ul style="list-style-type: none"> <li>IC- 13 Reactor Power ~19 %, Turbine @ 1800 RPM ready for Generator Synchronization</li> <li>Place Simulator in RUN</li> <li>Insert <b>IMF BR04:1R101</b> Prevents Auto Closure Of GEN SYNC BKR 1T HS 10001</li> </ul> <p><b><u>(IC-186 for LOC-21 NRC Exam)</u></b></p>			
1	Obtains controlled copy of procedure	Obtains controlled copy of OP-198-001, Main Generator System and refers to section 2.2		

\*Critical Step

#Critical Sequence

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

Step	Action	Standard	Eval	Comments
2	<p>Reviews prerequisites and precautions</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>If necessary inform candidate that service water to the H2 coolers was aligned as part of the Generator Prestart Lineup.</p> <p><b><u>CAUTION</u></b></p> <p>Allowing Main Turbine To Remain Unloaded At Rated Speed Causes Overheating Of Exhaust Hoods.</p>	<p>Determines from initial conditions:</p> <ul style="list-style-type: none"> <li>• Main Turbine S/U complete.</li> <li>• Generator Prestart Lineup complete.</li> <li>• If service water is isolated to the H2 coolers, the Main Generator will overheat. There is NO Control Room indication for the isolation valves</li> </ul>		
3	<p>Ensure the following for EHC:</p> <p>Main Turbine Speed Status AT SET SPEED light ILLUMINATED.</p> <p>LOAD LIMIT SET vernier set at 8.9 (corresponding to 100%).</p> <p>MAXIMUM COMBINED FLOW LIMIT vernier set at 12.5 (corresponding to 125%).</p>	<p>Verifies:</p> <p>AT SET SPEED red light - LIT</p> <p>LOAD LIMIT SET dial pot is at 8.9</p> <p>MAXIMUM COMBINED FLOW LIMIT dial pot is at 12.5</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>The next several steps will cause alarms to come in and clear. The candidate is expected to acknowledge the alarms as they are received. Since these are "Expected" alarms, it will not be necessary to refer to the AR, rather just acknowledge them as "Expected" alarms.</p>			
4	<p>Place Generator Core Monitor and H<sub>2</sub> Gas Analyzer in service as follows:</p> <p><b><u>BOOTH CUE:</u></b></p> <p>Insert <b>MRF EC197002 IN_SVC</b> to place Generator Core Monitor and H<sub>2</sub> Gas Analyzer in service.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play NPO and report Generator Core Monitor and H<sub>2</sub> Gas Analyzer IN service.</p>	<p>Contacts an NPO to Place Generator Core Monitor and H<sub>2</sub> Gas Analyzer are in service</p>		
5	<p>Establish generator field:</p> <p>Ensure VOLT REG XFER SELECT HS 10006 switch in MANUAL.</p>	<p>Verifies:</p> <p>VOLT REG XFER SELECT HS 10006 switch in MANUAL.</p> <p>AND</p> <p>Red light – LIT</p> <p>Amber light – NOT LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
6	Ensure MAN VOLT REG ADJUST HC 10002 at ZERO percent.	Verifies: MAN VOLT REG ADJUST HC 10002 at ZERO		
7	Ensure AUTO VOLT REG ADJUST HC 10001 at ZERO percent.	Verifies: AUTO VOLT REG ADJUST HC 10001 at ZERO		
*8	<p>Close EXCITER FIELD BKR HS 10005.</p> <p>Observe:</p> <p>UNIT 1 MAIN GENERATOR AC KILOVOLTS, X1 10006 (Gen Terminal Voltage) Increases to about 20KV.</p> <p>Iso Phase Bus Duct Cooler Starts if NOT already in OPERATION.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>If necessary, Role-play the NPO and Inform the candidate that the Iso Phase Bus Duct Coolers are in operation.</p>	<p>Places:</p> <p>EXCITER FIELD BKR HS 10005 control switch to CLOSE</p> <p>Verifies:</p> <p>Red light – LIT</p> <p>Amber light – NOT LIT</p> <p>UNIT 1 MAIN GENERATOR AC KILOVOLTS, X1 10006 Increases to about 20 KV</p> <p>Iso Phase Bus Duct Cooler (at 1C628)</p> <ul style="list-style-type: none"> <li>• Red light – LIT</li> <li>• Amber light – NOT LIT</li> </ul>		

\*Critical Step

#Critical Sequence

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

Step	Action	Standard	Eval	Comments
9	Using MAN VOLT REG ADJUST HC 10002 potentiometer, Raise SYNCHRONIZING BKR UNIT 1 GEN VOLTS to MATCH SYNCHRONIZING BKR GRID VOLTS XI 10009.	Turns MAN VOLT REG ADJUST HC 10002 potentiometer CLOCKWISE until:  SYNCHRONIZING BKR UNIT 1 GEN VOLTS are <b>MATCHED</b> with SYNCHRONIZING BKR GRID VOLTS XI 10009.		
10	Check proper operation of auto voltage regulation by Adjusting AUTO VOLT REG ADJUST HC 10001 potentiometer in INCREASE and DECREASE direction while Observing deviation on VR XFER XI 10012.	Turns AUTO VOLT REG ADJUST HC 10001 potentiometer CLOCKWISE then COUNTERCLOCKWISE:  Verifies:  VR XFER XI 10012 raises and lowers with the adjustments to the AUTO VOLT REG ADJUST HC 10001 potentiometer		
11	To balance Auto and Manual Voltage Regulators, Adjust AUTO VOLT REG ADJUST HC 10001 potentiometer until VR XFER XI 10012 Reads ZERO volts.	Turns AUTO VOLT REG ADJUST HC 10001 potentiometer as necessary to:  Verify:  VR XFER XI 10012 is at ZERO		
12	WHEN VR XFER XI 10012 Indicates ZERO, (nulled), Place the VOLT REG XFER SELECT HS 10006 switch to AUTO.	Places:  VOLT REG XFER SELECT HS 10006 switch to AUTO.  Verifies:  Red light – NOT LIT  Amber light – LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 98.GO.001.101

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

Step	Action	Standard	Eval	Comments
13	<p>To Ensure Auto Voltage Regulator has Control using AUTO VOLT REG ADJUST HC 10001 potentiometer:</p> <p>Lower voltage slightly.</p> <p>Raise voltage back to original value.</p>	<p>Turns AUTO VOLT REG ADJUST HC 10001 potentiometer COUNTERCLOCKWISE then CLOCKWISE:</p> <p>Verifies:</p> <p>VR XFER XI 10012 lowers and raises with the adjustments to the AUTO VOLT REG ADJUST HC 10001 potentiometer</p>		
14	<p>Notify Generation Control Center (GCC) of impending synchronization with the Grid.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play GCC and acknowledge the report.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>The next step of the procedure would have been reviewed in the pre-job brief. Since this JPM is NOT faulted in this manner, it will NOT be necessary for the candidate to exercise this Main Generator Connected Single Phase procedure. After the candidate reads the step and attempts to review the procedure, provide the candidate with the EVALUATOR CUE.</p>	<p>Calls GCC on phone and Notifies them of impending synchronization with the Grid.</p>		
15	<p>PRIOR to Performing next step, Review ON 198 003, Unit 1 Main Generator Connected Single Phase to Grid During Startup.</p>	<p>Attempts to review ON 198 003, Unit 1 Main Generator Connected Single Phase to Grid During Startup</p>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
16	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play the Unit Supervisor and inform the candidate that another PCO has been assigned to monitor the Main Generator for potential single phase connection and will implement the Off Normal procedure if necessary.</p> <p><b>CAUTION</b></p> <p>RPV Water Level May Decrease As A Result Of Condenser Parameter Changes During Generator Synchronization.</p> <p><b>CAUTION</b></p> <p>Moisture Separator Drain Tank Levels Will Increase For A Short Duration As A Result Of Steam Flow Changes In The Moisture Separators During Generator Synchronization.</p>			
	<p>Perform either Automatic (preferred) or Manual SYNCHRONIZATION and LOADING section of this procedure</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play the Unit Supervisor and inform the candidate that AUTOMATIC SYNCHRONIZATION will be performed for this startup.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
17	Locates appropriate section of procedure for Automatic SYNCHRONIZATION	Refers to section 2.3 of procedure		
18	Reviews prerequisites and precautions	Determines: Main Generator S/U complete.		
19	Place GEN SYNC SEL 1T HS 10002 switch to MAN.	Places: GEN SYNC SEL 1T HS 10002 keylock switch to MAN Verifies: SYNCHROSCOPE meter is rotating and the lights are LIT when the meter is NOT at 12 O'clock position		
20	Adjust generator output voltage by using AUTO VOLT REG ADJUST HC 10001 potentiometer so SYNCHRONIZING BKR UNIT 1 GEN VOLTS are slightly HIGHER THAN SYNCHRONIZING BKR GRID VOLTS XI 10009.	Turns AUTO VOLT REG ADJUST HC 10001 potentiometer CLOCKWISE then Verifies: SYNCHRONIZING BKR UNIT 1 GEN VOLTS are slightly higher than SYNCHRONIZING BKR GRID VOLTS XI 10009.		
21	Ensure SYNCHRONIZING DIFF VOLTS, XI 10007, is slightly to the RIGHT of ZERO.	Verifies: SYNCHRONIZING DIFF VOLTS, XI 10007, is slightly to the RIGHT of ZERO		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
22	Adjust generator frequency using LOAD SELECTOR INCREASE/DECREASE push buttons until SYNCHROSCOPE is rotating in the CLOCKWISE (FAST) direction at approximately 1 revolution per 30 seconds.	Depresses:  LOAD SELECTOR INCREASE pushbutton until the SYNCHROSCOPE is rotating in the CLOCKWISE (FAST) direction at approximately 1 revolution per 30 seconds.		
	<b><u>FAULT STATEMENT:</u></b> <b>THE GEN SYNC BKR 1T HS 10001 WILL FAIL TO CLOSE IN THE NEXT STEP</b>			
23	Perform next three steps Expeditiously to reduce possibility of a reverse power trip.  To Synchronize Main Generator with the grid, Place GEN SYNC SEL 1T HS 10002 switch to AUTO.  Ensure GEN SYNC BKR 1T Closes by Observing:  Red indicating light at GEN SYNC BKR 1T HS 10001 ILLUMINATES.  Megawatts Increase.	Places:  GEN SYNC SEL 1T HS 10002 keylock switch to AUTO  Verifies:  GEN SYNC BKR 1T HS 10001  Red light - <b>NOT LIT</b>  Amber light – <b>LIT</b>   Megawatts <b>HAVE NOT INCREASED.</b>		
24	Reports Failure to Unit Supervisor	Reports Failure to Unit Supervisor		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 98.GO.001.101

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b> Role-play the Unit Supervisor acknowledge the report <b>AND</b> Direct the candidate to perform a Manual SYNCHRONIZATION IAW section 2.4.			
25	Locates appropriate section of procedure for Manual SYNCHRONIZATION	Refers to section 2.4 of procedure		
26	Reviews prerequisites and precautions	Determines: Main Generator S/U complete.		
27	Obtain Shift Supervision approval to Manually Synchronize main generator.	Determines: Shift Supervision approval to Manually Synchronize main generator has been received		
*28	Place GEN SYNC SEL 1T HS 10002 switch to MAN.	Places: GEN SYNC SEL 1T HS 10002 keylock switch to MAN Verifies: SYNCHROSCOPE meter is rotating and the lights are LIT when the meter is NOT at 12 O'clock position		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
	<p><b><u>BOOTH CUE:</u></b></p> <p><b>Insert DMF BR04:1R101</b> to remove the malfunction on GEN SYNC BKR 1T HS 10001</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>It may not be necessary to adjust voltage in the next step. This was previously performed back in step 20 of the JPM "<b>PRIOR</b>" to the Fault. If the candidate determines that no adjustment is necessary at this point, then step 20 becomes the critical step.</p>			
*29	Adjust generator output voltage by using AUTO VOLT REG ADJUST HC 10001 potentiometer so SYNCHRONIZING BKR UNIT 1 GEN VOLTS are slightly higher than SYNCHRONIZING BKR GRID VOLTS XI 10009.	<p>Turns AUTO VOLT REG ADJUST HC 10001 potentiometer COUNTERCLOCKWISE then</p> <p>Verifies:</p> <p>SYNCHRONIZING BKR UNIT 1 GEN VOLTS are slightly higher than SYNCHRONIZING BKR GRID VOLTS XI 10009.</p>		
30	Ensure SYNCHRONIZING DIFF VOLTS, XI 10007, is slightly to the RIGHT of ZERO	<p>Verifies:</p> <p>SYNCHRONIZING DIFF VOLTS, XI 10007, is slightly to the RIGHT of ZERO</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 98.GO.001.101

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

Step	Action	Standard	Eval	Comments
*31	Adjust generator frequency using LOAD SELECTOR INCREASE/DECREASE push buttons until SYNCHROSCOPE is rotating in the CLOCKWISE (FAST) direction at approximately 1 revolution per 60 seconds.	Depresses:  LOAD SELECTOR DECREASE pushbutton until the SYNCHROSCOPE is rotating in the CLOCKWISE (FAST) direction at approximately 1 revolution per 60 seconds.		
*32	Perform next three steps Expeditiously to reduce possibility of a reverse power trip.  To Synchronize Main Generator with the grid, when synchroscope is at or slightly before "12 O'clock" position Close GEN SYNC BKR 1T HS 10001.	When synchroscope is at or slightly before "12 O'clock" position,  Places:  GEN SYNC BKR 1T HS 10001 control switch to CLOSE		
33	Ensure GEN SYNC BKR 1T Closes by Observing:  Red indicating light GEN SYNC BKR 1T HS 10001 is ILLUMINATED.  Megawatts Increase.	Verifies GEN SYNC BKR 1T HS 10001:  Red light – LIT  Amber light – NOT LIT  Megawatts Increase		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
34	Depress Increase push button on LOAD SELECTOR until all BYPASS VALVES are CLOSED.	Depresses: LOAD SELECTOR INCREASE pushbutton until: BPV1 POSITION indicates ZERO and BPV2 POSITION indicates ZERO and BPV3 POSITION indicates ZERO and BPV4 POSITION indicates ZERO and BPV5 POSITION indicates ZERO		
35	Place GEN SYNC SEL 1T HS 10002 Switch to OFF.	Places: GEN SYNC SEL 1T HS 10002 keylock switch to OFF Verifies: SYNCHROSCOPE meter is NOT rotating and the lights are NOT LIT.		
36	Maintain LOAD SET at 100 MWe ABOVE actual load	Depresses: LOAD SET INCREASE pushbutton until: 100 MWe ABOVE actual load		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b>  This completes the JPM			

\*Critical Step

#Critical Sequence



## **TASK CONDITIONS**

- A. A Plant Startup is in progress, Reactor Power is ~ 19%
- B. Main turbine Startup is complete, the turbine is @ ~ 1800 RPM awaiting Main Generator Startup.
- C. Generator Prestart Lineup is complete.
- D. GO-100-002, Plant Startup, Heatup And Power Operation has been completed through step 5.61.2

## **INITIATING CUE**

Synchronize the Main Generator to the Grid IAW section 2.2 of OP-198-001, Main Generator System.

## **TASK CONDITIONS**

- A. A Plant Startup is in progress, Reactor Power is ~ 19%
- B. Main turbine Startup is complete, the turbine is @ ~ 1800 RPM awaiting Main Generator Startup.
- C. Generator Prestart Lineup is complete.
- D. GO-100-002, Plant Startup, Heatup And Power Operation has been completed through step 5.61.2

## **INITIATING CUE**

Synchronize the Main Generator to the Grid IAW section 2.2 of OP-198-001, Main Generator System.

**PPL SUSQUEHANNA, LLC**

**JOB PERFORMANCE MEASURE**

**APPROVAL AND ADMINISTRATIVE DATA SHEET**

<u>S/RO</u>	<u>79.OP.006.102</u>	<u>0</u>	<u>9/28/05</u>	<u>223001</u>	<u>A1.10</u>	<u>3.4/3.6</u>
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

Task Title: Startup The Containment Radiation Monitor System After Maintenance (CRM A)

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

<u>Rich Chin</u>	<u>9/28/05</u>	_____	_____
Writer	Date	Instructor/Writer	Date

Approval:

\_\_\_\_\_  
Nuclear Trng. Supv.                      Date

_____	<u>15</u>	_____
Date of Performance:	Validation Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name: \_\_\_\_\_  
                                    Last                      First                      M.I.                      Employee # / S.S. #

Performance                      (      ) Satisfactory                      (      ) Unsatisfactory  
Evaluation:

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

Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 79.OP.006.102**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-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.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

OP-179-003, Containment Radiation Monitoring (Revision 5)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. CRM A was shutdown and isolated IAW OP-179-003 section 3.4, to support routine maintenance inspection checks.
- B. Maintenance has completed their inspections.
- C. CRM A is ready to be returned to service.
- D. No Containment Isolation signals are present.
- E. All prerequisites have been met.

**V. INITIATING CUE**

Startup CRM A from the control room IAW the appropriate operating procedure. Use Pump 1 to start the monitor.

**VI. TASK STANDARD**

CRM A is sampling the Containment atmosphere.

**VII. TASK SAFETY SIGNIFICANCE**

Provides a diverse means of detecting RCS leakage into the Containment atmosphere.

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
	<p>From any at power IC, shutdown and isolate CRM A IAW OP-179-003. Place the simulator in Freeze, and write an IC snap. Check "time" on CRM A screen display to verify it is current, the CRM has a separate processor and could be out of sync with simulator/real time.</p> <p><b><u>IC-184 for LOC-21 NRC Exam</u></b></p>			
1	Locates correct procedure.	Obtains controlled copy of OP-179-003		
2	References correct procedure section.	Refers to section 3.1		
3	Reviews prerequisites	Reviews prerequisites		
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>If necessary, Inform candidate that all prerequisites have been met.</p>			
4	Reviews Precautions	Reviews Precautions		
*5	<p>Open Supply and Return Primary Containment Isolation Valves at Containment Monitoring and Recording Panel 1C693 RI 15799A.</p> <p>Place HS 157110A1 CRM A Drywell Air Sample Inboard Supply &amp; Return Isolation Valves Div I, SV 157100A/102A in the OPEN position.</p>	<p>Places:</p> <p>HS 157110A1 CRM A Drywell Air Sample Inboard Supply &amp; Return Isolation Valves Div I, SV 157100A/102A in the OPEN position.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
6	Observe red open indication for SV 157100A.	Verifies: SV 157100A Red Light – LIT Amber Light – NOT LIT		
7	Observe red open indication for SV 157102A.	Verifies: SV 157102A Red Light – LIT Amber Light – NOT LIT		
*8	Place HS 157110A2 CRM A Drywell Air Sample Inboard Supply & Return Isolation Valves Div II, SV 157101A/103A in the OPEN position.	Places: HS 157110A2 CRM A Drywell Air Sample Inboard Supply & Return Isolation Valves Div II, SV 157101A/103A in the OPEN position.		
9	Observe red open indication for SV 157101A.	Verifies: SV 157101A Red Light – LIT Amber Light – NOT LIT		

\*Critical Step

#Critical Sequence

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
10	<p>Observe red open indication for SV 157103A.</p> <p><b>NOTE:</b></p> <p><b>CRMS may be operated locally or from the Control Room as determined by Shift Supervision.</b></p>	<p>Verifies:</p> <p>SV 157103A</p> <p>Red Light – LIT</p> <p>Amber Light – NOT LIT</p> <p>Based on initiating cue:</p> <p>Refers to section 3.1.5</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
11	<p>To Place Containment Radiation Monitor A in service from CONTAINMENT MONITORING AND RECORDING PANEL 1C693 RI 15799A:</p> <p>Observe CRM A Air Sample Rad Monitor CRT parameters:</p> <p>Correct approximate time.</p> <p>"OFF" OR "ISO" Control Status Blocks lit.</p> <p>"LO Temp" Alarm Block NOT lit.</p> <p>"LO Flow" Alarm Block lit.</p> <p>"LLO Flow" Alarm Block lit.</p> <p>"LO Filter Delta P" Alarm Block lit.</p>	<p>Verifies the following status of CRM A Air Sample Rad Monitor CRT:</p> <p>Correct approximate time.</p> <p>"ISO" Control Status Blocks LIT.</p> <p>"LO Temp" Alarm Block NOT LIT.</p> <p>"LO Flow" Alarm Block LIT.</p> <p>"LLO Flow" Alarm Block LIT.</p> <p>"LO Filter Delta P" Alarm Block LIT.</p>		
12	Press ACK to acknowledge local alarms.	Presses ACK pushbutton on CRM A keypad		
13	Confirm CONTAINMENT MONITORING AND RECORDING PANEL 1C693, Annunciator A02 "CONTN RAD DET SYSTEM A TROUBLE" lit.	<p>Verifies the following alarm window is LIT:</p> <p>CONTAINMENT MONITORING AND RECORDING PANEL 1C693, Annunciator A02 "CONTN RAD DET SYSTEM A TROUBLE".</p>		
14	IF CRM A is isolated (i.e., ISO status block lit), the CRM pumps will not start until this status is cleared.	<p>Verifies:</p> <p>"ISO" Status Block is LIT</p>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
15	IF CRM "ISO" (isolate) lit, UNISOLATE system as follows:	Verifies: "ISO" Status Block is LIT		
16	Press #0 on CRM A on CRM A keypad.	Presses 0 on CRM A on CRM A keypad.		
17	Observe screen change.	Verifies screen changes		
18	Press #1 "System Controls."	Presses 1 on CRM A on CRM A keypad.		
19	Press #6 "Isolate/Off" on CRM A keypad.	Presses 6 on CRM A on CRM A keypad		
20	Observe "ISO" status block clear.	Verifies "ISO" status block clears.		
21	Press #0 on CRM A keypad.	Presses 0 on CRM A on CRM A keypad		
22	Ensure CRM A heat trace to reach operating temperature of approximately 135°F.	Contacts NPO to verify CRM A heat trace to reach operating temperature of approximately 135°F.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b> Role-play NPO and Acknowledge the request, and report that you will ensure that the heat tracing reaches 135°F.			
23	Press #0 on CRM A keypad.	Presses 0 on CRM A on CRM A keypad		
24	Press #1 "System Controls" on CRM A keypad.	Presses 1 on CRM A on CRM A keypad		
25	Observe screen change.	Verifies screen changes		
	<b>NOTE:</b> It may be necessary to repeat steps 3.1.5 f. and g. several times in order to clear the LLO Flow alarm block. If the pump will not remain running after three attempts, contact I&C (or alternatively Chemistry) for assistance.			
*26	Start CRM Pump 1P262A1 or 1P262A2 by: Press #0 on CRM A keypad.	Presses 0 on CRM A on CRM A keypad Verifies small block next to pump 1 is LIT.		
27	Observe screen changes.	Verifies screen changes.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
28	Press #1 "System Controls."	Presses 1 on CRM A on CRM A keypad		
29	Press #3 "Pump 1 Control" for 1P262A1	Presses 3 on CRM A on CRM A keypad		
30	Observe Control Status Block lit for PUMP1, after a few seconds.	After a few seconds, Verifies Control Status Block for PUMP1 LIT		
31	Confirm "LLO Flow" alarm block clears.	Verifies: "LLO Flow" alarm block clears (NOT LIT).		
32	Press ACK on CRM A keypad.	Presses ACK on CRM A keypad.		
33	Confirm "LO Flow" alarm block clears.	Verifies: "LO Flow" alarm block clears (NOT LIT).		
34	Confirm CONTAINMENT MONITORING AND RECORDING PANEL 1C693, Annunciator A02 "CONTN RAD DET SYSTEM A TROUBLE" clears.	Verifies the following alarm window is NOT LIT: CONTAINMENT MONITORING AND RECORDING PANEL 1C693, Annunciator A02 "CONTN RAD DET SYSTEM A TROUBLE".		
35	Press #0 "Exit" on CRM A keypad.	Presses 0 on CRM A on CRM A keypad		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
36	Observe screen change.	Verifies screen changes.		
37	Press #3 "Display Current Data" on CRM A keypad.	Presses 3 on CRM A on CRM A keypad		
38	Observe screen change.	Verifies screen changes.		
39	Press #3 "System" on CRM A Air Sample Rad Monitor Keypad.	Presses 3 on CRM A on CRM A keypad		
40	Observe a flow rate of approximately 1.00+00 SCFM indicating normal system operation.	Verifies on CRM A CRT: Flow rate of approximately 1.00+00 SCFM		
41	Press #0 "Exit" on CRM A keypad.	Presses 0 on CRM A on CRM A keypad		
42	Observe screen change.	Verifies screen changes.		
43	Press #0 "EXIT" on CRM A keypad.	Presses 0 on CRM A on CRM A keypad		
44	Observe screen change.	Verifies screen changes.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 79.OP.006.102

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

Step	Action	Standard	Eval	Comments
45	Press #5 "Countrate Histograms" on CRM A keypad.	Presses 5 on CRM A on CRM A keypad		
46	Observe CPM Counting on CRM A Air Sample Rad Monitor CRT.	Verifies: CRM A Air Sample Rad Monitor CRT is counting.		
	<b><u>EVALUATOR CUE:</u></b> This completes the JPM			

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. CRM A was shutdown and isolated IAW OP-179-003 section 3.4, to support routine maintenance inspection checks.
- B. Maintenance has completed their inspections.
- C. CRM A is ready to be returned to service.
- D. No Containment Isolation signals are present.
- E. All prerequisites have been met.

### **INITIATING CUE**

Startup CRM A from the control room IAW the appropriate operating procedure.  
Use Pump 1 to start the monitor.

### **TASK CONDITIONS**

- A. CRM A was shutdown and isolated IAW OP-179-003 section 3.4, to support routine maintenance inspection checks.
- B. Maintenance has completed their inspections.
- C. CRM A is ready to be returned to service.
- D. No Containment Isolation signals are present.
- E. All prerequisites have been met.

### **INITIATING CUE**

Startup CRM A from the control room IAW the appropriate operating procedure.  
Use Pump 1 to start the monitor.

## APPROVAL AND ADMINISTRATIVE DATA SHEET

Task Title: Vent the Drywell IAW OP-173-003

Form NTP-QA-31.8-1, Rev. 0, Page 1 of 2  
2005 NRC Exam Rev. 1



**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 73.OP.001.101**

**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 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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

- A. OP-173-003, Primary Containment Nitrogen Makeup And Venting (Rev. 9)
- B. OP-070-001, Standby Gas Treatment System (Rev. 19)

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. Unit 1 is in Mode 1
- B. Drywell pressure is 0.4 psig

**V. INITIATING CUE**

Your supervisor directs you to reduce Drywell pressure to 0.1 psig IAW OP-173-003, Primary Containment Nitrogen Makeup and Venting section 2.3. All prerequisites have been met. All TR/TS requirements are satisfied.

**VI. TASK STANDARD**

SGTS in operation, Drywell venting with pressure being reduced.

**VII. TASK SAFETY SIGNIFICANCE**

Avoid an unnecessary high drywell pressure SCRAM.

# PERFORMANCE CHECKLIST

Page 3 of 10

Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <ul style="list-style-type: none"> <li>• This JPM must be performed in the simulator.</li> <li>• Select any Mode 1 IC</li> <li>• Secure Drywell cooling fans until Drywell pressure rises to 0.4 psig. Restart drywell cooling fans.</li> <li>• Place simulator in FREEZE.</li> <li>• When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN</b>.</li> </ul>			
1	Obtain controlled copy of OP-173-003, Primary Containment Nitrogen Makeup And Venting.	Controlled copy obtained.		
2	Select the correct section to perform.	Selects section 2.3		
3	Review the prerequisites and precautions.	Ensures all prerequisites and precautions have been met.		
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>If necessary inform the student all prerequisites and precautions have been met.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 4 of 10

Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
4	<p>Manually Start SGTS in accordance with OP-070-001</p> <p>Obtain controlled copy of OP-070-001, Standby Gas Treatment.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play the Unit Supervisor and instruct candidate to start the "A" train of SGTS.</p>	Controlled copy obtained.		
5	Select the correct section to perform.	Selects section 3.2		
6	<p>Review the prerequisites and precautions.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>If necessary inform the student all prerequisites and precautions have been met.</p>	Ensures all prerequisites and precautions have been met.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
	<p><b>NOTE:</b></p> <p>HD 0755A remains open for approximately 70 seconds and HD 0755B remains open for approximately 120 seconds after their respective pushbuttons are released. Steps 3.2.3 through 3.2.5 must be performed expeditiously to establish a flow path and allow SGTS to start.</p>			
*7	At Panel 0C681, DEPRESS SGTS Clg OA Dmp HD07555A OPEN pushbutton.	Depresses SGTS CLG OA DMP HD 07555A OPEN pushbutton.		
8	OBSERVE SGTS Clg OA Dmp HD07555A OPENS to allow suction flow path for start of SGTS Fan A.	Verifies:  SGTS CLG OA DMP HD 07555A  Amber light – NOT LIT  Red light – LIT		
*9	At Panel 0C681, START Standby Gas Treatment System A by placing selector switch for SGTS Fan OV109A to START.	Places selector switch for SGTS FAN OV109A to START  Verifies:  Amber light – NOT LIT  Red light – LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
10	<p>When Fan starts, OBSERVE flow increases &gt;3000 CFM on SGTS Air Flow FR07553A.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>SGTS Fans may not obtain 10,100 CFM due to insufficient suction flow path through SGTS Makeup OA Dmp FD07551A2.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Flowrate for this JPM should be (~4,800 CFM)</p>	<p>Verifies:</p> <p>SGTS AIR FLOW FR-07553A increases to greater than 3000 CFM.</p>		
11	<p>Check SGTS Makeup OA Dmp FD07551A2 MODULATED/OPEN approximately 70 seconds after SGTS Fan OV109A started.</p>	<p>Approximately 70 seconds after SGTS Fan OV109A started.</p> <p>Verifies:</p> <p>SGTS Makeup OA DMP FD 07551A2</p> <p>Amber light – LIT</p> <p>Red light – LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
12	CHECK following positioned as indicated:  SGTS Fan Inlet Dmp HD07552A FULL OPEN.	Verifies:  SGTS FAN INLET DMP HD 07552A  Amber light – NOT LIT  Red light – LIT		
13	SGTS A Inlet Dmp HD07553A FULL OPEN.	Verifies:  SGTS A INLET DMP HD 07553A  Amber light – NOT LIT  Red light – LIT		
14	Refers to appropriate venting procedure.	Refers to OP-173-003 section 2.3.5		
15	Ensure Drywell pressure does not become >0.5 psig below suppression chamber pressure, to prevent opening vacuum breakers.	Checks drywell pressure and determines N/A for current conditions.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 8 of 10

Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
	<p><b>NOTE:</b></p> <p>If pressure decreased to low pressure alarm setpoint (approximately 0.1 psig), pressure will have to be increased to approximately 0.5 psig to reset alarm.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play the Unit Supervisor and inform the candidate that it will not be necessary to actually log the vent start time in the next step.</p>			
16	Log vent start time in Unit 1 Log.	N/A		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
*17	<p>Open following:</p> <p>HD17508A DRWL/WETWELL BURP DMP</p> <p>HD17508B DRWL/WETWELL BURP DMP</p> <p>HV 15713 DRWL VENT IB ISO</p> <p>HV 15711 DRWL VENT BYPS OB ISO</p>	<p>Places Control switches for the following to the OPEN position:</p> <p>HD17508A DRWL/WETWELL BURP DMP</p> <p>HD17508B DRWL/WETWELL BURP DMP</p> <p>HV 15713 DRWL VENT IB ISO</p> <p>HV 15711 DRWL VENT BYPS OB ISO</p> <p>AND</p> <p>Verifies:</p> <p>Amber lights – NOT LIT</p> <p>Red lights – LIT</p>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 73.OP.001.101

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

Step	Action	Standard	Eval	Comments
18	<p>Monitor Drywell Pressure using any of the following:</p> <ul style="list-style-type: none"> <li>• Computer point MAP01 or MAP001Z</li> <li>• PICSY screen CONTN</li> <li>• PI 15702 CONTN OR SUPP CHMBR PRESS with selector switch HSS 15702 selected to CONTN</li> </ul> <p><b><u>EVALUATOR CUE:</u></b></p> <p>This completes the JPM</p>	<p>Determines Drywell pressure is dropping by checking:</p> <p>Computer point MAP01 or MAP001Z</p> <p><b>AND/OR</b></p> <p>PICSY screen CONTN</p> <p><b>AND/OR</b></p> <p>PI 15702 CONTN OR SUPP CHMBR PRESS with selector switch HSS 15702 selected to CONTN</p>		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Unit 1 is in Mode 1
- B. Drywell pressure is 0.4 psig

### **INITIATING CUE**

Your supervisor directs you to reduce Drywell pressure to 0.1 psig IAW OP-173-003, Primary Containment Nitrogen Makeup and Venting section 2.3. All prerequisites have been met. All TR/TS requirements are satisfied.

**TASK CONDITIONS**

- A. Unit 1 is in Mode 1
- B. Drywell pressure is 0.4 psig

**INITIATING CUE**

Your supervisor directs you to reduce Drywell pressure to 0.1 psig IAW OP-173-003, Primary Containment Nitrogen Makeup and Venting section 2.3. All prerequisites have been met. All TR/TS requirements are satisfied.

**PPL SUSQUEHANNA, LLC**

**JOB PERFORMANCE MEASURE**

**APPROVAL AND ADMINISTRATIVE DATA SHEET**

S/RO	58.OP.008.101	0	09/28/05	212000	K4.03	3.0/3.1
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A No.	K/A Imp.

Task Title: Transferring Power Supply From RPS M-G Set To Alternate

Completed By:	Validated:		
<u>Rich Chin</u>	<u>09/28/05</u>		
Writer	Date	Instructor/Writer	Date

Approval:

<u>Nuclear Trng. Supv.</u>	<u>                    </u>	<u>                    </u>	<u>                    </u>
	Date		

<u>                    </u>	<u>15</u>	<u>                    </u>
Date of Performance:	Validation Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name:                                                                                    

                    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 58.OP.008.101**

**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 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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

OP-158-001 RPS System (Revision 29)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Unit 1 is in Mode 1 at ~ 68% power
- B. RPS Shorting Links are installed
- C. Attachment A of OP-158-001, RPS System, is complete
- D. RPS Alternate Power supply is available
- E. All required Tech Spec LCO entries have been made.

**V. INITIATING CUE**

Transfer Power Supply from "A" RPS M-G Set to Alternate and restore plant systems, IAW the appropriate Attachment.

**VI. TASK STANDARD**

"A" RPS Bus powered from Alternate with all reset functions RESET.

**VII. TASK SAFETY SIGNIFICANCE**

Provide reliable power source to RPS

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 58.OP.008.101

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR NOTE:</u></b> <ul style="list-style-type: none"> <li>This JPM must be performed in the simulator.</li> <li>Select Mode 1 IC</li> <li>Complete Attachment A of OP-158-001 (<b>run auto exercise file RPSAXFER_SU</b>) and write an IC</li> <li>Insert pref YPP.CERTJPM-0401 which contains: <ul style="list-style-type: none"> <li><b>pfs 1 MRF RM179024 RESET</b> resets MSL rad monitor RIS-D12-1K603A</li> <li><b>pfs 2 MRF RM179026 RESET</b> resets MSL rad monitor RIS-D12-1K603C</li> <li><b>pfs 3 MRF DB106360 CLOSE</b> Closes breaker for RWCU valve HV-144-F001</li> </ul> </li> <li>When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN</b>.</li> <li><b><u>(YPP.ILONRCJPMDE for LOC-21 NRC exam)</u></b></li> <li><b><u>(IC 185 for LOC-21 NRC exam)</u></b></li> </ul>			
1	Obtain a controlled copy of OP-158-001 RPS System	Controlled copy obtained.		
2	Selects the correct section to perform.	Selects section 2.4		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 58.OP.008.101

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

Step	Action	Standard	Eval	Comments
3	Review the prerequisites.	Based on initial conditions, Determines all prerequisites have been met.		
4	Review all precautions.	Follows all precautions as applicable.		
5	Prepare Plant for isolation in accordance with Attachment A for A RPS,	Based on initial conditions, determines that this has already been done.		
	<b><u>EVALUATOR NOTE:</u></b> Alternate Power Supply can supply only one RPS Bus at a time.			
6	At Reactor Control Rod Test Instrument Panel 1C610: Check Alternate A Feed To RPS Bus A white indicating light ILLUMINATED. Check M-G Set Transfer switch in NORM position.	Verifies: Alternate A Feed To RPS Bus A white indicating light LIT RPS M-G Set Transfer switch HS-C72B-S1 in NORM position		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 58.OP.008.101

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>Following step must be Performed Slowly (approximately 2 seconds) to allow sufficient time for all expected actuations and isolations to occur prior to Transfer Switch reaching Alt A position. Multiple alarms will be received when M-G Set Transfer switch HS-C72B-S1 is placed in RPS ALT-A position.</p>			
*7	Slowly Place RPS M-G Set Transfer switch HS-C72B-S1 in the ALT-A position.	Slowly Places RPS M-G Set Transfer Switch HS-C72B-S1 in the ALT-A position.		
8	Acknowledges the numerous alarms	Depresses Silent and Reset pushbuttons for all panels in alarm.		
9	Restore systems in accordance with Attachment C	Selects Attachment C		
*10	Reset A RPS half scram by Momentarily Positioning REACTOR SCRAM RESET HS-C72A-1S05 to GRP 1/4 position and then to GRP 2/3 position.	<p>Places the RX SCRAM RESET switch to the GRP 1/4 position then to the GRP 2/3 position and returns to the NORM position.</p> <p>Verifies:</p> <p>The following alarm is clear</p> <ul style="list-style-type: none"> <li>RPS CHANNEL B1/B2 AUTO SCRAM, AR-104-A01.</li> </ul>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 58.OP.008.101

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

Step	Action	Standard	Eval	Comments
*11	Reset NSSSS isolation logic as follows: Depress MN STM LINE DIV 1 ISO RESET HS-B21-1S32. Depress MN STM LINE DIV 2 ISO RESET HS-B21-1S33.	Depresses: MN STM LINE DIV 1 ISO RESET HS-B21-1S32. MN STM LINE DIV 2 ISO RESET HS-B21-1S33.		
12	Recover from RBCW isolation as follows: Ensure RRP A CLG WTR OB ISO VALVES HV-18791A1&A2 CLOSED.	Verifies: Amber light LIT and red light NOT LIT for RRP A CLG WTR OB ISO VALVES HV-18791A1&A2		
13	Ensure RRP B CLG WTR IB ISO VALVES HV-18792A1&A2 CLOSED.	Verifies: Amber light LIT and red light NOT LIT for RRP B CLG WTR IB ISO VALVES HV-18792A1&A2		
*14	Depress HV-18791A1&A2 ISOLATION RESET.	Depresses: HV-18791A1&A2 ISOLATION RESET pushbutton		
*15	Depress HV-18792A1&A2 ISOLATION RESET.	Depresses: HV-18792A1&A2 ISOLATION RESET pushbutton		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 58.OP.008.101

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

Step	Action	Standard	Eval	Comments
16	Ensure RRP A CLG WTR OB ISO VALVES HV-18791A1&A2 OPEN.	Verifies: Amber light NOT LIT and red light LIT for RRP A CLG WTR OB ISO VALVES HV-18791A1&A2		
17	Ensure RRP B CLG WTR IB ISO VALVES HV-18792A1&A2 OPEN.	Verifies: Amber light NOT LIT and red light LIT for RRP B CLG WTR IB ISO VALVES HV-18792A1&A2		
18	Recover from CAC System isolation as follows: Ensure CONTN GAS ANLZR IB ISO LOOP A HS-15740A CLOSED. Ensure CONTN GAS ANLZR OB ISO LOOP A HS-15742A CLOSED.	Verifies: CONTN GAS ANLZR IB ISO LOOP A HS-15740A CONTN GAS ANLZR OB ISO LOOP A HS-15742A Amber lights LIT Red lights NOT LIT		
	<b><u>EVALUATOR CUE:</u></b> Role-play Shift supervision, and inform candidate that It is <b>NOT</b> desired to place "A" H <sub>2</sub> O <sub>2</sub> Analyzer in service			
19	IF RHR Shutdown Cooling isolations were defeated, Restore as follows	Determines RHR is NOT in Service		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 58.OP.008.101

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

Step	Action	Standard	Eval	Comments
*20	<p>IF RWCU isolations were defeated, Restore as follows:</p> <p>Close breaker 1B236-053 power supply to RWCU INLET IB ISO HV-144-F001.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play the NPO and Acknowledge the request</p> <p><b><u>BOOTH CUE:</u></b></p> <p>Depress pfs 3 MRF DB106360 CLOSE</p> <p>Contact PCO and inform the PCO that breaker 1B236-053 power supply to RWCU INLET IB ISO HV-144-F001 is CLOSED</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play Shift supervision, and inform candidate that another operator is available to complete Attachment C</p> <p>This completes the JPM.</p>	<p>Contacts NPO to Close breaker 1B236-053 power supply to RWCU INLET IB ISO HV-144-F001.</p>		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Unit 1 is in Mode 1 at ~ 68% power
- B. RPS Shorting Links are installed
- C. Attachment A of OP-158-001, RPS System, is complete
- D. RPS Alternate Power supply is available
- E. All required Tech Spec LCO entries have been made.

### **INITIATING CUE**

Transfer Power Supply from "A" RPS M-G Set to Alternate and restore plant systems, IAW the appropriate Attachment.

## **TASK CONDITIONS**

- A. Unit 1 is in Mode 1 at ~ 68% power
- B. RPS Shorting Links are installed
- C. Attachment A of OP-158-001, RPS System, is complete
- D. RPS Alternate Power supply is available
- E. All required Tech Spec LCO entries have been made.

## **INITIATING CUE**

Transfer Power Supply from "A" RPS M-G Set to Alternate and restore plant systems, IAW the appropriate Attachment.

## APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	55.ON.007.152	0	10/4/05	201003	A2.01	3.4/3.6
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

**Task Title:** Respond To A Stuck Control Rod IAW ON-155-001

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

Rich Chin	10/4/05		
Writer	Date	Instructor/Writer	Date

Approval:

<u>Nuclear Trng. Supv.</u>	<u>Date</u>
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20

Date of Performance:      Validation Time (Min.)      Time Taken (Min.)

JPM Performed By:

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

Last	First	M.I.	Employee # / S.S. #
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Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

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

Signature	Typed or Printed
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Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 55.ON.007.152**

**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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

- A. ON-155-001, CONTROL ROD PROBLEMS (Rev. 23)
- B. Startup Sequence B2.

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. Unit 1 is at 68% power
- B. A Plant Startup is in progress at Unit 1 IAW GO-100-102; step 5.75 has been completed.

**V. INITIATING CUE**

The Unit Supervisor directs you to raise Reactor Power to 75% by **SINGLE NOTCH** Withdrawing Rods IAW startup sequence B2 beginning at step 554. Notify Reactor Engineering when 75% power is achieved. Assume the  $\rho$  briefing for this power change has been completed.

**VI. TASK STANDARD**

Rods 18 55, 42-07, and 18-07 withdrawn to notch 12; Rod 42-55 withdrawn to notch 06

**VII. TASK SAFETY SIGNIFICANCE**

Ability to safely add positive Reactivity with control rod motion

# PERFORMANCE CHECKLIST

Page 3 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <ul style="list-style-type: none"> <li>Establish task conditions as directed on attached setup instructions.</li> <li>Prepare a Startup Sequence B2 signed –off up to step 554.</li> <li>The FAULTED step in this JPM is preceded by a fault statement in <b>BOLD TYPE WITH ALL CAPITAL LETTERS</b>.</li> <li>When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN</b>.</li> </ul> <p><b><u>Simulator Setup</u></b></p> <ul style="list-style-type: none"> <li>MODE 1 68% IC.</li> <li>Place Simulator in RUN</li> <li>Run Display ROD 42-55 select Stuck Rod and Accept</li> <li>Ensure FWFE is on the Venturis</li> <li>Ensure PICYS screen is on CRDA</li> </ul>			

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

Page 4 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
★1	Selects Rod 18-55 for withdraw	Depresses 18 – 55 Verifies 18 and 55: White lights – LIT Full core display reads notch 04		
★2	Withdraws Rod 18-55 to notch 12	Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 06 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 08 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 10 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 12		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 5 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
*3	Selects Rod 42-07 for withdraw	Depresses 42-07 Verifies 42 and 07: White lights – LIT Full core display reads notch 04		
*4	Withdraws Rod 42-07 to notch 12	Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 06 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 08 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 10 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 12		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 6 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
*5	Selects Rod 18-07 for withdraw	Depresses 18-07 Verifies 18 and 07: White lights – LIT Full core display reads notch 04		
*6	Withdraws Rod 18-07 to notch 12	Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 06 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 08 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 10 Depresses W/DRAW ROD pushbutton Verifies: Full core display changes to notch 12		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 7 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
*7	<p>Selects Rod 42-55 for withdraw</p> <p><b><u>FAULT STATEMENT:</u></b></p> <p><b>ROD 42-55 WILL NOT MOVE IN THE NEXT STEP</b></p>	<p>Depresses 42-55</p> <p>Verifies 42 and 55:</p> <p>White lights – LIT</p> <p>Full core display reads notch 04</p>		
8	<p>Withdraws Rod 42-55 to notch 12</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Candidate may request permission to attempt to move rod <b>ONE MORE</b> time before proceeding to the Off-Normal procedure. IF necessary, Role-play Unit Supervisor and grant permission to attempt <b>ONE MORE</b> withdrawal sequence.</p>	<p>Depresses W/DRAW ROD pushbutton</p> <p>Verifies:</p> <p>Full core display <b>DID NOT CHANGE</b> to notch 06</p>		

\*Critical Step

#Critical Sequence

# **PERFORMANCE CHECKLIST**

Page 8 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
9	<p>Proceed to applicable section of OFF-Normal procedure ON-155-001, Control Rod Problems as indicated.</p> <ul style="list-style-type: none"> <li>• Stuck Control Rod Step 3.3</li> <li>• Rod Drift or Rod Scram Step 3.4</li> <li>• Rod Overtravel Step 3.5</li> <li>• Mispositioned Rod Step 3.6</li> <li>• Multiple Rod Notching Step 3.7</li> <li>• Slow to Settle Rod Step 3.8</li> </ul> <p align="center">NOTE:</p> <p>Rx Engineering notification is desired, when this section is performed because a control rod has failed to settle properly.</p>	Determines step 3.3 is applicable based on initial conditions.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 9 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
10	<p>IF rod position indication does not change when valid withdraw OR insert signal applied, Perform the following:</p> <p>Confirm control rod position using any 3 of the available rod position indication as follows:</p> <ul style="list-style-type: none"> <li>• CRT and SIP 4 ROD DISPLAY.</li> <li>• FULL IN/FULL OUT DISPLAY push button.</li> <li>• OD 7</li> <li>• Alarm logging printer, System Event Display Message</li> <li>• RSCS Display when below Low Power Alarm Point.</li> <li>• RWM Main Display when below Low Power Alarm Point.</li> </ul> <p style="text-align: center;"><b>CAUTION</b></p> <p>Scramming a stuck control rod will cause damage to CRD mechanism.</p>	<p>Uses any 3 of the following to confirm Rod 42-55 is <b>STILL AT NOTCH 4</b></p> <ul style="list-style-type: none"> <li>• CRT and SIP 4 ROD DISPLAY.</li> <li>• FULL IN/FULL OUT DISPLAY push button.</li> <li>• OD 7</li> <li>• Alarm logging printer, System Event Display Message</li> <li>• RSCS Display when below Low Power Alarm Point.</li> <li>• RWM Main Display when below Low Power Alarm Point.</li> </ul>		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Page 10 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
	<p>NOTE:</p> <p>If reactor is shutdown and exercising of rods is being performed in accordance with an approved procedure, double clutching with 'continuous withdraw' may be used (per step (1)(a)2), below) with Shift Supervision approval.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 11 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
11	<p>IF rod failed to withdraw:</p> <p>Attempt to operate drive by:</p> <p>Perform either 1) OR 2) below:</p> <p>1. Depress withdraw rod pushbutton.</p> <p>2. With Shift Supervision approval, Depress withdraw and continuous withdraw rod pushbuttons.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play Unit Supervisor and grant permission to Depress withdraw and continuous withdraw rod pushbuttons.</p> <p>Simultaneously Momentarily Depress the continuous insert AND withdraw pushbuttons to Withdraw rod to appropriate position (one notch at power).</p>	<p>Simultaneously Momentarily Depresses the:</p> <ul style="list-style-type: none"> <li>W/DRAW ROD</li> <li>CONT INSERT</li> </ul> <p>pushbuttons</p> <p><b>AND/OR</b></p> <p>Requests permission from Unit Supervisor to Depress withdraw and continuous withdraw rod pushbuttons</p> <p>Simultaneously Momentarily Depresses the:</p> <ul style="list-style-type: none"> <li>W/DRAW ROD</li> <li>CONT W/DRAW ROD</li> <li>CONT INSERT</li> </ul> <p>pushbuttons</p> <p>Uses the following to confirm Rod 42-55 is <b>STILL AT NOTCH 4</b></p> <ul style="list-style-type: none"> <li>CRT and SIP 4 ROD DISPLAY.</li> </ul>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

Page 12 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
12	IF rod position does not change on 4 rod display, Confirm control rod position using available rod position indications.	<p>Uses any 3 of the following to confirm Rod 42-55 is <b>STILL AT NOTCH 4</b></p> <ul style="list-style-type: none"> <li>CRT and SIP 4 ROD DISPLAY.</li> <li>FULL IN/FULL OUT DISPLAY push button.</li> <li>OD 7</li> <li>Alarm logging printer, System Event Display Message</li> <li>RSCS Display when below Low Power Alarm Point.</li> <li>RWM Main Display when below Low Power Alarm Point.</li> </ul>		
13	<p><u>IF</u> rod failed to move, Attempt to move control rod, as follows:</p> <p>Complete rod data on Attachment A.</p>	<p>Records the following on Attachment A</p> <p>Date</p> <p>Time</p> <p>Rod 42-55</p> <p>Position 04</p> <p>Reactor Pressure</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 13 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
*14	<p>In ~ 50 psid increments, Increase drive water pressure</p> <p>AND</p> <p>Perform following at each increment until <math>\leq</math> 350 psid reached:</p> <p>CAUTION</p> <p>Elevated drive pressure increases the risk of multiple notch movement.</p>	<p>Places DRIVE WTR PRESS THLTG PV-146F003 to CLOSE</p> <p>UNTIL</p> <p>DRIVE WATER DIFF PRESSURE PDI-C12-1R602 INCREASES FROM ~250 TO 300 PSID</p>		
15	<p>Attempt to operate drive one notch in intended direction, authorized by procedure governing original Control Rod motion, while observing drive water flows (4 gpm insert/2.5 gpm withdraw).</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Normally, another operator would be assigned to observe drive water flows. If necessary, inform candidate that drive water flow was 2.5 gpm during the withdrawal attempt.</p>	<p>Depresses W/DRAW ROD pushbutton</p> <p>Verifies:</p> <p>Full core display FOR ROD 42-55 <b>DID NOT CHANGE</b> to notch 06</p> <p>AND</p> <p>Verifies:</p> <p>DRIVE WATER FLOW FI-C12-1R604 RAISE to ~2.5 gpm</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 14 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
16	<p>IF rod position does not change on 4 rod display, Confirm control rod position using available rod position indications.</p> <p>NOTE:</p> <p>IF reactor is shutdown AND exercising of rods is being performed in accordance with an approved procedure, double clutching with 'continuous withdraw' may be used (per step (c)1)b), below) with Shift Supervision approval.</p>	<p>Uses the following to confirm Rod 42-55 is <b>STILL AT NOTCH 4</b></p> <ul style="list-style-type: none"> <li>• CRT and SIP 4 ROD DISPLAY.</li> <li>• FULL IN/FULL OUT DISPLAY push button.</li> <li>• OD 7</li> <li>• Alarm logging printer, System Event Display Message</li> <li>• RSCS Display when below Low Power Alarm Point.</li> <li>• RWM Main Display when below Low Power Alarm Point.</li> </ul>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 15 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
17	<p>IF rod failed to withdraw:</p> <p>Attempt to operate drive by:</p> <p>Perform either 1) OR 2) below:</p> <p>1. Depress withdraw rod pushbutton.</p> <p>2. With Shift Supervision approval, Depress withdraw and continuous withdraw rod pushbuttons.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play Unit Supervisor and grant permission to Depress withdraw and continuous withdraw rod pushbuttons.</p> <p>Simultaneously Momentarily Depress the continuous insert AND withdraw pushbuttons to Withdraw rod to appropriate position (one notch at power).</p>	<p>Simultaneously Momentarily Depresses the:</p> <ul style="list-style-type: none"> <li>W/DRAW ROD</li> <li>CONT INSERT</li> </ul> <p>pushbuttons</p> <p><b>AND/OR</b></p> <p>Requests permission from Unit Supervisor to Depress withdraw and continuous withdraw rod pushbuttons</p> <p>Simultaneously Momentarily Depresses the:</p> <ul style="list-style-type: none"> <li>W/DRAW ROD</li> <li>CONT W/DRAW ROD</li> <li>CONT INSERT</li> </ul> <p>pushbuttons</p> <p>Uses the following to confirm Rod 42-55 is <b>STILL AT NOTCH 4</b></p> <ul style="list-style-type: none"> <li>CRT and SIP 4 ROD DISPLAY.</li> </ul>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 16 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
18	IF rod position does not change on 4 rod display, Confirm control rod position using available rod position indications.	<p>Uses any 3 of the following to confirm Rod 42-55 is <b>STILL AT NOTCH 4</b></p> <ul style="list-style-type: none"> <li>CRT and SIP 4 ROD DISPLAY.</li> <li>FULL IN/FULL OUT DISPLAY push button.</li> <li>OD 7</li> <li>Alarm logging printer, System Event Display Message</li> <li>RSCS Display when below Low Power Alarm Point.</li> <li>RWM Main Display when below Low Power Alarm Point.</li> </ul>		
19	<p>Repeat as necessary, until 350 psid</p> <p><b>BOOTH CUE:</b></p> <p><b>Remove ROD 42-55 Stuck Rod malfunction</b></p>	<p>Determines it will be necessary to raise drive water another 50 psid.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 17 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
*20	<p>In ~ 50 psid increments, Increase drive water pressure AND Perform following at each increment until <math>\leq</math> 350 psid reached:</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Elevated drive pressure increases the risk of multiple notch movement.</p>	<p>Places DRIVE WTR PRESS THLTG PV-146F003 to CLOSE  UNTIL DRIVE WATER DIFF PRESSURE PDI-C12-1R602 INCREASES FROM ~300 TO 350 PSID</p>		
*21	<p>Attempt to operate drive one notch in intended direction, authorized by procedure governing original Control Rod motion, while observing drive water flows (4 gpm insert/2.5 gpm withdraw).</p> <p><b><u>EVALUATOR CUE:</u></b> Normally, another operator would be assigned to observe drive water flows. If necessary, inform candidate that drive water flow was 2.5 gpm during the withdrawal attempt.</p>	<p>Depresses W/DRAW ROD pushbutton  Verifies: Full core display FOR ROD 42-55 <b>CHANGES to notch 06</b></p> <p style="text-align: center;">AND</p> <p>Verifies:  DRIVE WATER FLOW FI-C12-1R604 RAISE to ~2.5 gpm  Reports ROD 42-55 is at NOTCH 06 to Unit Supervisor</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 18 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b> Role-play Unit Supervisor and acknowledge the report and direct candidate to complete the ON procedure			
22	IF rod moves one notch in intended direction, Go to step 3.3.1.f.	Proceeds to step 3.3.1.f.		
23	Record drive water pressure required to move control rod on Attachment A.	Records the following on Attachment A: 350 psid drive water pressure required to move control rod		
24	Record drive water flow that is indicated while attempting to move stuck control rod on Attachment A.	Records the following on Attachment A: Indicated drive water flow required to move control rod		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 19 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
	<p>NOTE (1):</p> <p>IF control rod testing is being performed IAW TP-055-001 or TP-055-006, multiple control rod notch movement is allowed at elevated drive water pressure. Drive water pressure must be returned to 250 psid prior to testing next control rod.</p> <p>NOTE (2):</p> <p>Multiple notch movement is permitted for control rods with identified friction (except during startup single notch restraint). If excessive control rod speed is observed, control rod movement must be stopped and drive pressure returned to 250 psid.</p>			
*25	Return drive water pressure to ~ 250 psid, for each subsequent rod notch. Document on Attachment A.	<p>Places DRIVE WTR PRESS THLTG PV-146F003 to OPEN</p> <p>UNTIL</p> <p>DRIVE WATER DIFF PRESSURE PDI-C12-1R602 INCREASES FROM ~250 PSID</p> <p>AND</p> <p>Records the following on Attachment A:</p> <p>250 psid</p>		

\*Critical Step

#Critical Sequence



**PERFORMANCE CHECKLIST**

Page 20 of 20

Appl. To/JPM No.: S/RO 55.ON.007.152

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b>  This completes the JPM			

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

- A. Unit 1 is at 68% power
- B. A Plant Startup is in progress at Unit 1 IAW GO-100-102; step 5.75 has been completed.

## **INITIATING CUE**

The Unit Supervisor directs you to raise Reactor Power to 75% by **SINGLE NOTCH** Withdrawing Rods IAW startup sequence B2 beginning at step 554. Notify Reactor Engineering when 75% power is achieved. Assume the  $\rho$  briefing for this power change has been completed.

## **TASK CONDITIONS**

- A. Unit 1 is at 68% power
- B. A Plant Startup is in progress at Unit 1 IAW GO-100-102; step 5.75 has been completed.

## **INITIATING CUE**

The Unit Supervisor directs you to raise Reactor Power to 75% by **SINGLE NOTCH** Withdrawing Rods IAW startup sequence B2 beginning at step 554. Notify Reactor Engineering when 75% power is achieved. Assume the  $\rho$  briefing for this power change has been completed.

## APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	52.OP.009.151	0	10/4/05	206000	A4.14	4.2/4.1
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

**Task Title:** Override An Inadvertent Start Of The HPCI System In Accordance With OP-152-001

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

Rich Chin	10/4/05		
Writer	Date	Instructor/Writer	Date

Approval:

Nuclear Trng. Supv.	Date
---------------------	------

Date of Performance:
10  
Validation Time (Min.)
Time Taken (Min.)

JPM Performed By:

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

Last	First	M.I.	Employee # / S.S. #
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Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

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

Signature	Typed or Printed
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Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 52.OP.009.151**

**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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

- A. OP-152-001, High Pressure Coolant Injection (HPCI) System (Rev. 36)

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. The plant is in Condition 1 at approximately 68 percent reactor power.
- B. An inadvertent HPCI initiation has occurred.

**V. INITIATING CUE**

Override HPCI injection IAW the appropriate Hardcard

**VI. TASK STANDARD**

HPCI injection stopped with HPCI turbine shutdown.

**VII. TASK SAFETY SIGNIFICANCE**

Ability to control RPV water level.

# PERFORMANCE CHECKLIST

Page 3 of 8

Appl. To/JPM No.: S/RO 52.OP.009.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <ul style="list-style-type: none"> <li>Establish task conditions as directed on attached setup instructions.</li> <li>The IC <b>MUST</b> be set up such that an inadvertent</li> <li>HPCI initiation has just occurred <b>AND</b> no action has yet been taken.</li> <li>A malfunction or override should be used to prevent manual override of HPCI injection, requiring the operator to isolate HPCI.</li> <li>With the given the Task Conditions/Initiating Cue Sheet and allowed to observe the panel.</li> <li>When student is ready to begin JPM, place the simulator in RUN.</li> <li>The <b>FAULTED</b> step in this JPM is preceded by a fault statement in <b>BOLD TYPE WITH ALL CAPITAL LETTERS</b>.</li> </ul>			
1	Candidate refers to appropriate procedural section.	OP-158-001 Attachment C step 2		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 4 of 8

Appl. To/JPM No.: S/RO 52.OP.009.151

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

Step	Action	Standard	Eval	Comments
2	<p>To stop injection place HPCI pump on minimum flow as follows:</p> <ul style="list-style-type: none"> <li>Place or CHECK PLACED HPCI AUXILIARY OIL PUMP 1P213 switch to START.</li> </ul> <p><b><u>FAULT STATEMENT</u></b></p> <p><b>HPCI INJECTION FLOW WILL NOT DECREASE TO ZERO WHEN PRESSURE IS REDUCED TO LESS THAN REACTOR PRESSURE.</b></p>	Places the control switch for HPCI Aux Oil Pump 1P213 in the START position.		
3	Place HPCI TURBINE FLOW CONTROL FC E41 1R600 in MANUAL.	Places the Manual/Auto switch on HPCI Turbine Flow Control FC-E41-1R600 to the M position		
4	Adjust HPCI TURBINE FLOW CONTROL FC E41 1R600 to reduce HPCI discharge pressure less than Reactor pressure.	<p>Depresses the Close pushbutton on HPCI Turbine Flow Control FC-E41-1R600 until the HPCI pump discharge pressure is less than reactor pressure.</p> <p>Verifies:</p> <p>HPCI PP DISCH PRESS PI-E41-1R601 pressure is <b>GREATER THAN</b> any RPV pressure indication</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 5 of 8

Appl. To/JPM No.: S/RO 52.OP.009.151

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

Step	Action	Standard	Eval	Comments
5	Ensure HPCI MIN FLOW TO SUPP POOL HV 155 F012 opens when HPCI flow < 500 gpm and discharge pressure > 125 psig.	Verifies: HPCI MIN FLOW TO SUPP POOL HV 155 F012 Red light – <b>NOT LIT</b> Amber light – <b>LIT</b>  AND HPCI Flow FI-E41-1R600-1 is <b>STILL INDICATED</b>		
6	IF HPCI flow indication does not decrease to zero gpm with HPCI pump discharge pressure less than reactor pressure, Shut Down HPCI per following step.	Determines: HPCI will need Shutdown IAW next step		
7	To stop injection/shutdown HPCI:  Ensure HPCI AUXILIARY PUMP 1P213 switch placed to START.	Previously performed		
8	Depress HPCI INT SIG RESET HS E41 1S17 RESET pushbutton.  IF HPCI initiation resets, Shut Down HPCI in accordance with "Shutdown" section of OP 152 001.	Depresses: HPCI INT SIG RESET HS E41 1S17 RESET pushbutton  Verifies: Green light – <b>LIT</b>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

Page 6 of 8

Appl. To/JPM No.: S/RO 52.OP.009.151

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

Step	Action	Standard	Eval	Comments
9	<p>IF HPCI initiation does not reset, stop injection/shut down using following sections (1) preferred, OR (2):</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>HPCI Flow controller steps were previously performed and were unsuccessful, candidate should proceed to Isolate HPCI per section 2.2</p>	<p>Determines HPCI initiation did NOT reset</p> <p>Verifies HPCI INT SIG RESET HS E41 1S17 RESET</p> <p>Green light – <b>LIT</b></p>		
*10	<p>To isolate HPCI:</p> <p>Depress HPCI STM SUPPLY MAN ISO HS E41 1S32 pushbutton.</p>	<p>Depresses:</p> <p>HPCI STM SUPPLY MAN ISO HS E41 1S32 pushbutton</p>		
*11	<p>Ensure HPCI STM SUPPLY OB ISO HV 155 F003 CLOSES.</p>	<p>Inserts key into keylock switch HPCI STM SUPPLY OB ISO HV 155 F003 and places to CLOSE position</p> <p>Verifies:</p> <p>Red light – NOT LIT</p> <p>Amber light – LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 7 of 8

Appl. To/JPM No.: S/RO 52.OP.009.151

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

Step	Action	Standard	Eval	Comments
12	Ensure HPCI PUMP SUCTION FROM SUPP POOL HV 155 F042 CLOSES.	Verifies: PUMP SUCTION FROM SUPP POOL HV 155 F042 Red light – NOT LIT Amber light – LIT		
13	Ensure HPCI INJECTION HV 155 F006 CLOSES.	Verifies: HPCI INJECTION HV 155 F006 Red light – NOT LIT Amber light – LIT		
14	Ensure HPCI AUX OIL PUMP 1P213 starts as HPCI turbine coasts down.	Verifies: HPCI AUX OIL PUMP 1P213 Red light – LIT Amber light – NOT LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 8 of 8

Appl. To/JPM No.: S/RO 52.OP.009.151

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

Step	Action	Standard	Eval	Comments
★15	Close HPCI STM SUPPLY IB ISO HV 155 F002.	Places:  HPCI STM SUPPLY IB ISO HV 155 F002 to CLOSE  AND  Verifies:  Red light – NOT LIT  Amber light – LIT		
16	Place HPCI STM SUPPLY OB ISO HV 155 F003 KEYSWITCH to CLOSE.  <b><u>EVALUATOR CUE:</u></b>  This completes the JPM	Previously completed in step 11 of this JPM		

\*Critical Step

#Critical Sequence

**TASK CONDITIONS**

- A. The plant is in Condition 1 at approximately 68 percent reactor power.
- B. An inadvertent HPCI initiation has occurred.

**INITIATING CUE**

Override HPCI injection IAW the appropriate Hardcard

**TASK CONDITIONS**

- A. The plant is in Condition 1 at approximately 68 percent reactor power.
- B. An inadvertent HPCI initiation has occurred.

**INITIATING CUE**

Override HPCI injection IAW the appropriate Hardcard

## APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	45.OP.004.151	0	10/4/05	259001	A3.10	3.4/3.4
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

Task Title: Commence Feeding with an additional RFP/Shutdown RFP due to High vibrations

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

Rich Chin	10/4/05		
Writer	Date	Instructor/Writer	Date

Approval:

<u>Nuclear Trng. Supv.</u>	<u>Date</u>
----------------------------	-------------

Date of Performance: \_\_\_\_\_
 
 15  
 Validation Time (Min.)
 

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

**JPM Performed By:**

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

Last	First	M.I.	Employee # / S.S. #
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Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

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

Signature	Typed or Printed
-----------	------------------

Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 45.OP.004.151**

**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.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

OP-145-001, RFP and RFP Lube Oil System (Revision 42)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Unit 1 is @ 68% power with a plant startup in progress.
- B. RFP A and B are feeding the RPV in Automatic level control
- C. RFP C has been started and warmed, and is ready to feed the RPV.
- D. Feedwater venturies selected as input to PICSY Core Thermal Power Heat Balance.

**V. INITIATING CUE**

Commence feeding the RPV with RFP C IAW with the appropriate procedure.

**VI. TASK STANDARD**

RFP C is shutdown and isolated, with RFP A and B in automatic level control

**VII. TASK SAFETY SIGNIFICANCE**

Failure to secure the RFP could lead to unacceptable RPV water level fluctuations, or catastrophic failure of the RFP.

# PERFORMANCE CHECKLIST

Page 3 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
	<p>From any 68% power IC</p> <p>Insert <b>YPP.ILONRCJPMFGH</b></p> <p>Places F condensate Demin in service</p> <ul style="list-style-type: none"> <li>• <b>IOR QDIHSS11600F SRVC</b></li> </ul> <p>"C" RFP TURBINE HI VIBRATION TO 4.2 MILS OVER 15 SECONDS</p> <ul style="list-style-type: none"> <li>• <b>PFS 9 IMF FW145007C 4.2 15 0</b></li> <li>• The FAULTED step in this JPM is preceded by a fault statement in <b>BOLD TYPE WITH ALL CAPITAL LETTERS.</b></li> <li>• Verify Feedwater venturies as input to PICSY Core Thermal Power Heat Balance</li> </ul> <p><b><u>IC-182 OR 183 for LOC-21 NRC Exam</u></b></p>			
1	Locates correct procedure.	Obtains controlled copy of OP-145-001		
2	References correct procedure section.	Refers to section 2.5		
3	Reviews prerequisites	Reviews prerequisites		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

Page 4 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b> If necessary, Inform candidate that all prerequisites have been met.			
4	Reviews Precautions	Reviews Precautions		
5	Check/Establish RFP C discharge pressure 50 - 100 psig below Reactor pressure as follows:  Increase RFP/T C speed using RFP CSPD CTL/DEMAND SIGNAL SIC-C32-1R601C controller, AND  Throttle FV 10604C using RX FEED PUMP C RECIRC FLOW FIC-10604C in MANUAL to maintain RFP C FLOW FI-10604C indication greater RFP C MIN FLOW SET PT FI-10612C indication.	Verifies:  RFP C discharge pressure is 50-100 psig below Reactor pressure		
6	Check RFP C discharge temperature approximately equal to in-service reactor feed pump discharge temperature as indicated on RFP DSCH TEMP TR-10608.	Verifies:  RFP DSCH TEMP TR-10608 reactor feed pump discharge temperatures are all approximately equal		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 5 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
7	<p>IF feeding with second feed pump and not already performed per GO-100-002, Ensure following:</p> <p>RFP C START UP ISO HV-10651C CLOSED.</p> <p>RFP C DSCH ISO HV-10603C OPEN by depressing OPEN push button.</p>	<p>Verifies RFP C START UP ISO HV-10651C</p> <p>Red light – NOT LIT</p> <p>Amber Light – LIT</p> <p>AND</p> <p>RFP C DSCH ISO HV-10603C</p> <p>Red light –LIT</p> <p>Amber Light – NOT LIT</p>		
8	<p>Perform following to feed Reactor Vessel with RFP C:</p> <p>IF placing a RFP in service with HWC in service in Power Determine Setpoint Mode, Restore a Hydrogen Injection string to service IAW HWC OPERATION When Placing Additional Reactor Feed Pump C In Service section of OP-145-002.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play NPO and acknowledge the request.</p>	<p>Contacts NPO to Restore a Hydrogen Injection string to service IAW HWC OPERATION When Placing Additional Reactor Feed Pump C In Service section of OP-145-002</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 6 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
9	Adjust RFP C SPD CTL/DEMAND SIGNAL SIC-C32-1R601C controller to increase turbine speed until incoming pump just begins to feed.	Depresses INC pushbutton on :  RFP C SPD CTL/DEMAND SIGNAL SIC-C32-1R601C controller  Until FEEDFLOW is observed		
10	<p>Monitor Reactor Vessel level to ensure it remains stable.</p> <p><b><u>FAULT STATEMENT:</u></b></p> <p>When the candidate begins the next step, the Hi Vibration alarm will annunciate. The candidate should refer to the AR.</p> <p><b><u>BOOTH OPERATOR CUE:</u></b></p> <p>Insert PFS 9</p> <p>IMF FW145007C 4.2 15 0</p> <p>“C” RFP TURBINE HI VIBRATION TO 4.2 MILS OVER 15 SECONDS</p> <p>DO NOT INCREASE to 5 mils, this would require tripping of the pump.</p> <p>Monitor vibration, increase malfunction magnitude until alarm is received.</p>	Monitors Reactor Vessel level to ensure it remains stable.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 7 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
11	Slowly Reduce RFP minimum flow by depressing RX FEED PUMP C RECIRC FLOW FIC-10604C CLOSE push button	Depresses CLOSE push button on  RX FEED PUMP C RECIRC FLOW FIC-10604C		
12	Refers to AR 101-001 A16, RFPT A,B,C HI Vibration	Refers to AR 101-001 A16, RFPT A,B,C HI Vibration		
13	Check alarm condition and trend on RFPT VIBRATION XRSR-12728.  Reduce load on RFP to determine if vibration load related.  IF vibration increases to 5 mils, THEN Ensure RFPT trips.  IF alarm occurs during startup, THEN Reduce warmup rate of Turbine.  Check bearing oil temperatures prior to trip to determine if oil temperature induced vibration.	Verifies Vibration is rising to 4.2 mils on RFPT VIBRATION XRSR-12728  Depresses DEC pushbutton on :  RFP CSPD CTL/DEMAND SIGNAL SIC-C32-1R601C controller  AND  Rechecks Vibration on RFPT VIBRATION XRSR-12728		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 8 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b> Role-play Unit supervisor and direct candidate to Shutdown RFP C IAW appropriate procedure. Field report suggests unusual noises and vibrations at the RFP			
14	References correct procedure section.	Refers to OP-145-001 section 2.6		
15	Reviews prerequisites	Reviews prerequisites		
	<b><u>EVALUATOR CUE:</u></b> If necessary, Inform candidate that all prerequisites have been met.			
16	IF less than three reactor feed pumps will be in service, Direct Shift Technical Advisor to SELECT Feedwater venturies as input to PICSY Core Thermal Power Heat Balance (OD3) in accordance with OI-TA-021, Selection of Feedwater Inputs for Calculation of Core Thermal Power.	Determines from initial conditions that Feedwater venturies are already selected as input to PICSY Core Thermal Power Heat Balance.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
17	IF RFP A or B is to be shut down, Realign to the appropriate RFP OR Shut Down Depleted Zinc Oxide (DZO) Injection System in accordance with OP-144-001.	Determines this step to be N/A.		
18	Remove Hydrogen Injection String from service for Reactor Feed Pump being Shutdown IAW HWC System Power Operations section of OP-145-002.  <b><u>EVALUATOR CUE:</u></b> Role-play NPO and acknowledge the request.	Contacts NPO to Remove a Hydrogen Injection string to service IAW HWC OPERATION When Placing Additional Reactor Feed Pump C In Service section of OP-145-002		
19	Monitor Reactor Vessel level closely to insure Reactor Feed Pump(s) left in service will maintain reactor vessel level.  <b>NOTE:</b> <b>A Recirculation Flow Controller FIC-10604 demand signal of ~ 40 will provide pump with adequate minimum flow.</b>	Monitors Reactor Vessel level to ensure it remains stable.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
20	Place RFP C SPD CTL/DEMAND SIGNAL SIC-C32-1R601C in MANUAL.	Verifies:  RFP C SPD CTL/DEMAND SIGNAL SIC-C32-1R601C  Amber M light - LIT		
21	Slowly Adjust RX FEED PUMP C RECIRC FLOW FIC-10604C in MANUAL to ~ 40% demand.	Verifies RX FEED PUMP C RECIRC FLOW FIC-10604C switch in M position  AND  Depresses OPEN Pushbutton on RX FEED PUMP C RECIRC FLOW FIC-10604C until ~ 40% demand is achieved.		
22	Slowly Decrease RFP/T C speed using RFP C SPD CTL /DEMAND SIGNAL SIC-C32-1R601C controller to obtain RFP C discharge pressure ~ 100 psig below reactor pressure; AND	Depresses DEC Pushbutton on  RX FEED PUMP C RECIRC FLOW FIC-10604C controller  Until RFP C discharge pressure is 50 100 psig below Reactor pressure		
23	Throttle FV 10604C using RX FEED PUMP C RECIRC FLOW FIC-10604C in MANUAL to maintain RFP C FLOW FI-10604C indication greater RFP C MIN FLOW SET PT FI-10612C indication.	Depresses Open/Close Pushbuttons on RX FEED PUMP C RECIRC FLOW FIC-10604C to maintain RFP C FLOW FI-10604C indication greater RFP C MIN FLOW SET PT FI-10612C indication		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 11 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
24	Monitor Rx Vessel level closely and Maintain level with in service pump(s).	Monitors Reactor Vessel level to ensure it remains stable.		
25	IF Reactor Feed Pump to be placed in Standby on minimum flow during Low Load Operations, Perform following:	Determines step to be N/A		
26	IF Reactor Feed Pump C to be tripped/shutdown:  Ensure Reactor Feed Pump C discharge pressure ~ 100 psig below Reactor pressure.	Verifies:  RFP C discharge pressure is ~ 100 psig below Reactor pressure		
★27	Close/Check Closed RFP C DSCH ISO HV-10603C.	Depresses CLOSED pushbutton on RFP C DSCH ISO HV-10603C.  Verifies:  Red light – NOT LIT  Amber Light – LIT		
28	Close/Check Closed RFP START UP ISO HV-10651C.	Verifies:  RFP START UP ISO HV-10651C.  Red light – NOT LIT  Amber Light – LIT		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
*29	Ensure or Slowly Decrease turbine speed to EAP LOW SPEED STOP (~ 1850 rpm), THEN	Depresses DEC Pushbutton on: RFP C SPD CTL/DEMAND SIGNAL SIC-C32-1R601C controller  Until RFP C turbine speed is at EAP LOW SPEED STOP (~ 1850 rpm)		
*30	Trip RFPT C at RFPT C TRIP RESET HS-12745C.	Depresses TRIP pushbutton on: RFPT C TRIP RESET HS-12745C.  Verifies: Red light – NOT LIT Amber Light – LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 13 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
31	At 1C668, Observe following: <ul style="list-style-type: none"> <li>RFPT C LP ISO HV-12709C CLOSES.</li> <li>RFPT C HP ISO HV-12710C CLOSES.</li> <li>RFPT C FIRST STAGE DRN HV-12717C OPENS.</li> <li>RFP C DSCH CKV HV-10606C CLOSES.</li> </ul>	<p>Verifies:</p> <p>Red light – NOT LIT</p> <p>Amber Light – LIT</p> <p>For the following valves:</p> <ul style="list-style-type: none"> <li>RFPT C LP ISO HV-12709C</li> <li>RFPT C HP ISO HV-12710C</li> <li>RFP C DSCH CKV HV-10606C</li> </ul> <p>AND</p> <p>Red light – LIT</p> <p>Amber Light – NOT LIT</p> <ul style="list-style-type: none"> <li>RFPT C FIRST STAGE DRN HV-12717C</li> </ul>		
*32	Fast Lower RFP C MTR SPD CHANGER, HS-12730C1, to LOW SPEED STOP.	<p>Depresses FAST pushbutton on:</p> <p>LOWER RFP C MTR SPD CHANGER, HS-12730C1 until:</p> <p>RFPT C MTR SPD CHANGER at LOW SPEED STOP AMBER (LSS) light - LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 14 of 14

Appl. To/JPM No.: 45.OP.004.151

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

Step	Action	Standard	Eval	Comments
33	<p>Ensure RFPT C MTR SPD CHANGER at LOW SPEED STOP by only Amber (LSS) light ILLUMINATED above RFPT C MTR SPD CHANGER push buttons or locally on upper stop.</p> <p><b>NOTE:</b></p> <p><b>Decreasing (SIC-C32-1R601A,B,C) SPD CTL/DEMAND SIGNAL to less than '0', may cause RFPT Control Signal Failure to annunciate.</b></p>	<p>Verifies:</p> <p>RFPT C MTR SPD CHANGER at LOW SPEED STOP AMBER (LSS) light - LIT</p>		
34	<p>Ensure RFP C SPD CTL/DEMAND SIGNAL SIC- C32-1R601C in MANUAL with speed output signal (horizontal meter) set at 0.</p>	<p>Verifies:</p> <p>RFP C SPD CTL/DEMAND SIGNAL SIC-C32-1R601C Amber M light – LIT</p> <p><b>AND</b></p> <p>Speed output signal (horizontal meter) set at 0</p>		
*35	<p>Close FV 10604C using RX FEED PUMP C RECIRC FLOW FIC-10604C in MANUAL.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>This completes the JPM</p>	<p>Depresses CLOSE pushbutton on RX FEED PUMP C RECIRC FLOW FIC-10604C until it reaches zero demand.</p>		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Unit 1 is @ 68% power with a plant startup in progress.
- B. RFP A and B are feeding the RPV in Automatic level control
- C. RFP C has been started and warmed, and is ready to feed the RPV.
- D. Feedwater venturies selected as input to PICSY Core Thermal Power Heat Balance.

### **INITIATING CUE**

Commence feeding the RPV with RFP C IAW with the appropriate procedure.

### **TASK CONDITIONS**

- A. Unit 1 is @ 68% power with a plant startup in progress.
- B. RFP A and B are feeding the RPV in Automatic level control
- C. RFP C has been started and warmed, and is ready to feed the RPV.
- D. Feedwater venturies selected as input to PICSY Core Thermal Power Heat Balance.

### **INITIATING CUE**

Commence feeding the RPV with RFP C IAW with the appropriate procedure.

**PPL SUSQUEHANNA, LLC**  
**JOB PERFORMANCE MEASURE**  
**APPROVAL AND ADMINISTRATIVE DATA SHEET**

<u>S/RO</u>	<u>00.ON.015.104</u>	<u>0</u>	<u>09/28/05</u>	<u>295016</u>	<u>AA1.07</u>	<u>4.0/4.0</u>
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

Task Title: Establish and Maintain Reactor Pressure With SRVs from the RSDP IAW ON-100-009

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

<u>Rich Chin</u>	<u>09/28/05</u>		
Writer	Date	Instructor/Writer	Date

Approval:

\_\_\_\_\_  
Nuclear Trng. Supv.                      Date

	<u>20</u>	
Date of Performance:	Validation Time (Min.)	Time Taken (Min.)

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

Student Name: \_\_\_\_\_  
                                    Last                                      First                                      M.I.                                      Employee # / S.S. #

Performance                      (     )    Satisfactory                      (     )    Unsatisfactory  
Evaluation:

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

Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 00.ON.015.104**

**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 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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

- A. ON-100-009, Control Room Evacuation (Rev. 10)

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. A Hazardous GAS condition exists in the control room requiring abandonment of the Control Room.
- B. ON-100-009, Control Room Evacuation has been completed through step 4.2.
- C. Reactor vessel water level is being maintained by RCIC.
- D. Reactor pressure is being maintained by SRVs cycling.

**V. INITIATING CUE**

Transfer control to the RSDP and commence a RCS cooldown **NOT TO EXCEED** 100°F/Hr with SRVs from the Remote Shutdown Panel beginning at step 4.3 of ON-100-009, Control Room Evacuation.

**VI. TASK STANDARD**

Control transferred to the RSDP and a RCS cooldown  $\leq$  100°F/Hr is commenced.

**VII. TASK SAFETY SIGNIFICANCE**

Ability to cooldown the RPV at less than Tech Spec maximum allowed rate; provide control power to critical plant equipment at the RSDP.

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <ul style="list-style-type: none"> <li>Establish task conditions as directed on attached setup instructions.</li> <li>IC-20</li> <li>Place Mode SW to S/D</li> <li>S/D CRD pump to avoid 54" level and excessive vessel C/D</li> <li>Place IRMs to range 1</li> <li>Perform ON-100-009 up to step 4.2</li> <li>Snap into an IC for the JPM</li> <li>Prepare a signed-off copy of ON-100-009, Control Room Evacuation up through step 4.2</li> <li>When student is ready to begin JPM, place the simulator in RUN.</li> </ul> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Provide candidate with a signed-off copy of ON-100-009, Control Room Evacuation up through step 4.2.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Student may review previous sections of procedure.</p>			

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
1	Candidate refers to appropriate procedural section.	Candidate refers to ON-100-009, Control Room Evacuation step 4.3.		
2	<p>Upon arrival at Remote Shutdown Panel, Perform following to determine plant status and gain control of critical systems:</p> <p><b>NOTE:</b></p> <p>Since the laptop is for monitoring purposes only, this should not impact completing the following steps to gain control of the plant.</p>			
3	<p>As time and manpower allows, Connect the PICSY laptop per Attachment E.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Inform the candidate that the STA will commence Connecting the PICSY laptop per Attachment E.</p> <p><b>NOTE:</b></p> <p>Attachment D contains lists of all functions performed by placing transfer switches to EMERG position.</p>	Requests STA to begin Connecting the PICSY laptop per Attachment E.		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
*4	Transfer control to Remote Shutdown Panel as follows, Observe Green Light ILLUMINATES for each transfer switch when placed in EMERG position:  Place HSS-14901A INSTR TRANSFER SWITCH A INSTR SET 1, 2 in EMERG position (located near the top center of the panel).	Places:  HSS-14901A INSTR TRANSFER SWITCH A INSTR SET 1, 2 in EMERG position  Verifies:  Green Light - LIT  Red Light - NOT LIT		
*5	Place HSS-15110A INSTR TRANSFER SWITCH B INSTR SET 3, 4 in EMERG position (located near the top right of the panel).	Places:  HSS-15110A INSTR TRANSFER SWITCH B INSTR SET 3, 4 in EMERG position  Verifies:  Green Light - LIT  Red Light - NOT LIT		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*6	<p>Transfer HSS-14902A CONTROL TRANSFER SWITCH A as follows:</p> <p>Ensure 1P-220 BAROMETRIC CDSR COND PUMP aligned to AUTO.</p> <p>Place HSS-14902A CONTROL TRANSFER SWITCH A in EMERG position.</p>	<p>Verifies:</p> <p>1P-220 BAROMETRIC CDSR COND PUMP Control switch in AUTO.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-14902A CONTROL TRANSFER SWITCH A in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
*7	<p>Transfer HSS-14902B CONTROL TRANSFER SWITCH M as follows:</p> <p>Ensure HV-149-F059 TURB EXH TO SUPP POOL aligned to OPEN.</p> <p>Ensure 1P-219 BAROMETRIC VACUUM PUMP aligned to STOP.</p> <p>Place HSS-14902B CONTROL TRANSFER SWITCH M in EMERG position.</p>	<p>Verifies:</p> <p>HV-149-F059 TURB EXH TO SUPP POOL in OPEN.</p> <p>1P-219 BAROMETRIC VACUUM PUMP Control switch in STOP.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-14902B CONTROL TRANSFER SWITCH M in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*8	<p>Transfer HSS-14903A CONTROL TRANSFER SWITCH B as follows:</p> <p>Ensure HV-149-F060 VAC PP DSCH TO SUPP POOL aligned to OPEN.</p> <p>Place HSS-14903A CONTROL TRANSFER SWITCH B in EMERG position.</p>	<p>Verifies:</p> <p>HV-149-F060 VAC PP DSCH TO SUPP POOL in OPEN.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-14903A CONTROL TRANSFER SWITCH B in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		
*9	<p>Place HSS-14903B CONTROL TRANSFER SWITCH N in EMERG position.</p>	<p>Places:</p> <p>HSS-14903B CONTROL TRANSFER SWITCH N in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*10	Place HSS-14904A CONTROL TRANSFER SWITCH C in EMERG position.	Places: HSS-14904A CONTROL TRANSFER SWITCH C in EMERG position  Verifies: Green Light - LIT Red Light - NOT LIT		
*11	Place HSS-14905A CONTROL TRANSFER SWITCH D in EMERG position.	Places: HSS-14905A CONTROL TRANSFER SWITCH D in EMERG position  Verifies: Green Light - LIT Red Light - NOT LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*12	<p>Transfer HSS-15111B CONTROL TRANSFER SWITCH R as follows:</p> <p>Ensure SV-12651 INSTR GAS TO CONTN ISO aligned to OPEN.</p> <p>Place HSS-15111B CONTROL TRANSFER SWITCH R in EMERG position.</p>	<p>Verifies:</p> <p>SV-12651 INSTR GAS TO CONTN ISO in OPEN.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-15111B CONTROL TRANSFER SWITCH R in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		
*13	<p>Place HSS-15112A CONTROL TRANSFER SWITCH F in EMERG position.</p>	<p>Places:</p> <p>HSS-15112A CONTROL TRANSFER SWITCH F in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*14	Place HSS-15112B CONTROL TRANSFER SWITCH S in EMERG position.	Places: HSS-15112B CONTROL TRANSFER SWITCH S in EMERG position  Verifies: Green Light - LIT Red Light - NOT LIT		
*15	Place HSS-15113A CONTROL TRANSFER SWITCH G in EMERG position.	Places: HSS-15113A CONTROL TRANSFER SWITCH G in EMERG position  Verifies: Green Light - LIT Red Light - NOT LIT		
*16	Transfer HSS-15113B CONTROL TRANSFER SWITCH T as follows:  Ensure HV-151-F006B SHUTDOWN CLG SUCT aligned to CLOSE.	Verifies: HV-151-F006B SHUTDOWN CLG SUCT in CLOSE.		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
★17	<p><b>NOTE:</b></p> <p>Indication for HV-151-F010B RHR LOOP B CROSSTIE will not illuminate due to supply breaker being open.</p>			
	<p>Ensure HV-151-F010B RHR LOOP B CROSSTIE aligned to CLOSE.</p> <p>Place HSS-15113B CONTROL TRANSFER SWITCH T in EMERG position.</p>	<p>Verifies:</p> <p>HV-151-F010B RHR LOOP B CROSSTIE in CLOSE.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-15113B CONTROL TRANSFER SWITCH T in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT Verifies:</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*18	<p>Transfer HSS-15114A CONTROL TRANSFER SWITCH H as follows:</p> <p>Ensure HV-151-F004B RHR PUMP B SUCT aligned to OPEN.</p> <p>Place HSS-15114A CONTROL TRANSFER SWITCH H in EMERG position.</p>	<p>Verifies:</p> <p>HV-151-F004B RHR PUMP B SUCT in OPEN.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-15114A CONTROL TRANSFER SWITCH H in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		
*19	<p>Transfer HSS-15114B CONTROL TRANSFER SWITCH U as follows:</p> <p>Ensure SV-12605 INSTR GAS CMP OB SUCT ISO aligned to OPEN.</p> <p>Place HSS-15114B CONTROL TRANSFER SWITCH U in EMERG position.</p>	<p>Verifies:</p> <p>SV-12605 INSTR GAS CMP OB SUCT ISO in OPEN.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-15114B CONTROL TRANSFER SWITCH U in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*20	Place HSS-15115A CONTROL TRANSFER SWITCH J in EMERG position.	Places:  HSS-15115A CONTROL TRANSFER SWITCH J in EMERG position  Verifies:  Green Light - LIT  Red Light - NOT LIT		
*21	Transfer HSS-15115B CONTROL TRANSFER SWITCH V as follows:  Ensure HV-151-F047B HX B SHELL SIDE INLET aligned to OPEN.  Place HSS-15115B CONTROL TRANSFER SWITCH V in EMERG position.	Verifies:  HV-151-F047B HX B SHELL SIDE INLET in OPEN.  <b>THEN</b>  Places:  HSS-15115B CONTROL TRANSFER SWITCH V in EMERG position  Verifies:  Green Light - LIT  Red Light - NOT LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*22	<p>Transfer HSS-15116A CONTROL TRANSFER SWITCH K as follows:</p> <p>Ensure HV-151-F003B HX B SHELL SIDE OUTLET aligned to OPEN.</p> <p>Place HSS-15116A CONTROL TRANSFER SWITCH K in EMERG position.</p>	<p>Verifies:</p> <p>HV-151-F003B HX B SHELL SIDE OUTLET in OPEN.</p> <p><b>THEN</b></p> <p>Places:</p> <p>HSS-15116A CONTROL TRANSFER SWITCH K in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		
*23	<p>Place HSS-15116B CONTROL TRANSFER SWITCH W in EMERG position.</p>	<p>Places:</p> <p>HSS-15116B CONTROL TRANSFER SWITCH W in EMERG position</p> <p>Verifies:</p> <p>Green Light - LIT</p> <p>Red Light - NOT LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*24	Place HSS-15117A CONTROL TRANSFER SWITCH L in EMERG position.	Places: HSS-15117A CONTROL TRANSFER SWITCH L in EMERG position  Verifies: Green Light - LIT Red Light - NOT LIT		
*25	Place HSS-15117B CONTROL TRANSFER SWITCH X in EMERG position.	Places: HSS-15117B CONTROL TRANSFER SWITCH X in EMERG position  Verifies: Green Light - LIT Red Light - NOT LIT		
26	Ensure Main Steam Lines ISOLATED by EITHER: Observing IB MSIV's indicate CLOSED.  LOCALLY Observing OB MSIV's CLOSED.	Verifies: Main Steam Line IB ISO VLVS A, B, C, and D Amber CLOSED Lights - LIT Red OPEN Lights - NOT LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
27	<p>Monitor available parameters to determine plant status.</p> <p><b>NOTE :</b></p> <p>If PICSY computer available all information that was available in the control room via computer displays will be available at the Remote Shutdown Panel using the PICSY laptop computer.</p> <p><b>NOTE :</b></p> <p>If PICSY computer is not available, the following step is not necessary for control of the plant, but will make the control by the operators smoother.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Inform the candidate that the PICSY computer is not yet available, the STA is still in the process of connecting and starting-up the laptop computer.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
28	<p>IF PICSY is not available Notify I&amp;C to install:</p> <p>Temporary Shutdown level indication in accordance with IC-180-004, LT-B21-1N027 Reactor Range Level Measurement at Rack 1C005.</p> <p>Temporary reactor coolant temperature indication in accordance with IC-149-005, Installation and Removal of Temporary RTD Readers for Local Monitoring of RHR Heat Exchanger B Inlet (TE-E11-1N004B) and Outlet (TE-E11-1N027B)Temperatures.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>If candidate elects to have I &amp; C begin installing, Role-play I&amp;C and acknowledge the request.</p>	<p>Determines N/A since PICYS was available.</p>		
29	<p>IF PICSY is not available and the Control Room was evacuated prior to scrambling the reactor, Ensure the reactor scrambled by locally Observing the positions of the scram valves on a few HCU's. (The scram valve indication should be open (up) for both inlet and exhaust valves.)</p>	<p>Based on initial conditions, determines this to be N/A.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
	<p><b>NOTE:</b></p> <p>Transferring HSS-14454 CONTROL TRANSFER SWITCH Y to EMERG will cause RWCU OB ISO HV-144-F004 to close. Opening Breaker 18 in 1Y219 will de-energize SV-14433 closing HV-144F033.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Since there was no indication of RWCU piping leak OR indication of flow being diverted to condenser or Radwaste through RWCU in the initial conditions, the candidate may not contact the NPO to perform the check in the next step.</p>			
30	<p>IF there is indication of RWCU piping leak OR indication of flow being diverted to condenser or Radwaste through RWCU, Perform the following:</p> <p>Place HSS-14454 CONTROL TRANSFER SWITCH Y to EMERG (located near the top of the panel)</p> <p><b><u>AND</u></b></p> <p>Observe Green Light ILLUMINATED.</p> <p>Open Breaker 1Y219-018 (Area 29/719').</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>If necessary, Role-play NPO and inform candidate that there is NO indication of RWCU piping leak OR indication of flow being diverted to condenser or Radwaste through RWCU</p>	<p>May Contact NPO and request checks for:</p> <p>Indication of RWCU piping leak OR indication of flow being diverted to condenser or Radwaste through RWCU</p>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
31	<p>IF Control Room evacuation was because of fire:</p> <p>Verify that the following Control Structure HVAC Systems are operating:</p> <ul style="list-style-type: none"> <li>a. Computer Room Floor Cooling System</li> <li>b. Control Room Floor Cooling System</li> <li>c. Control Structure H&amp;V System</li> <li>d. Battery Room Exhaust System</li> </ul> <p>IF one or more of the above systems are found inoperable, Enter ON 030 001, Loss of Control Structure HVAC within 3 hours.</p> <p>Perform DC OP 001, Post Fire Recovery Actions within 8 hours.</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>RHR Pump 1P202A may spuriously start preventing Unit 2 from running RHR Pump 2P202A when required.</p>	Determines N/A		
32	<p>IF RHR Pump 1P202A must be tripped, Perform the following at 1A20102:</p> <p>Place Lateral Control Switch to HANDLE OUT position.</p> <p>Place Lateral Control Switch to OPEN.</p>	Determines N/A		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
33	<p>IF Suppression Pool Level drops below 22 feet, WITHIN 10 HOURS:</p> <p>Ensure no systems are in operation that could cause the decrease.</p> <p>Ensure no other condition(s) exist that could cause the decrease.</p> <p>Locally Close manual valve 157025 (Area 27/645').</p>	Determines N/A		
34	<p>IF the fire has caused hot shorts that have resulted in damage to MOVs required for the operation of RCIC, RHR Suppression Pool Cooling or RHR Shutdown Cooling from the Remote Shutdown Panel, Depressurize the RPV using the available SRVs and Use RHR/LPCI in the alternate shutdown cooling mode in accordance with ON-149-001.</p>	Determines N/A		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
	<p><b>CAUTION</b></p> <p>Fires in the Control Room could cause an inadvertent and uncontrolled RPV injection from either Condensate, Core Spray, or the RHR Division not installed on the RSP. The SRV discharge piping has been analyzed for the loading conditions that will result from this condition. To minimize the loads on the SRV discharge piping, assure that an SRV is open as RPV pressure is being reduced and the RPV pressure approaches the shutoff head for each of these systems (Condensate approximately 600 psig; Core Spray and RHR approximately 300 psig). Should Condensate begin to inject, monitor RPV level to assure that the fire has not damaged the FW LO LOAD controller prior to closing the SRV.</p> <p><b>NOTE:</b></p> <p>Relief mode of SRV's A, B, and C will not auto initiate when applicable Control Transfer Switches are in EMERG position, however, safety function is always operable. Also when SRV Transfer Switches are in EMERG spurious auto actuation is prevented due to a Control Room fire.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
35	<p>To control reactor pressure Perform the following:</p> <p>Ensure following valves OPEN:</p> <p>SV-12651 INSTR GAS TO CONTN ISO.</p> <p>SV-12605 INSTR GAS CMP OB SUCT ISO.</p> <p><b>CAUTION</b></p> <p>Level 1 (-129") or high drywell pressure (1.72 psig) LOCA Isolation Signal is defeated for CIG valves when controlled from the remote shutdown panel.</p> <p><b>NOTE:</b></p> <p>Placing HSS-15114B Transfer Switch U in EMERG causes Instr Gas CMP OB suction to cycle possibly tripping CIG compressors on low suction pressure.</p>	<p>Verifies:</p> <p>SV-12651 INSTR GAS TO CONTN ISO.</p> <p>SV-12605 INSTR GAS CMP OB SUCT ISO.</p> <p>Amber Lights – NOT LIT</p> <p>Red Lights - LIT</p>		
36	<p>IF CIG Compressors tripped, Reset as follows at 1C239 (Area 25/719'):</p> <p>Depress Logic Reset push button.</p> <p>Ensure CIG Compressor STARTS.</p>	<p>Contacts NPO and requests NPO to determine the status of the CIG Compressors</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play NPO and inform candidate that the CIG Compressors are running.</p> <p><b>CAUTION</b></p> <p>If RPV pressure drops below 650 psig, condensate pumps will inject when RPV level &lt; +35 inches.</p> <p><b>CAUTION</b></p> <p>Wide range level indication becomes less accurate as RPV pressure decreases.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>It may be necessary for the candidate to perform several OPEN/CLOSE sequences on the SRVs to obtain the required cooldown rate.</p>			
*37	<p>Operate SRV's as follows:</p> <p>Open SRV's A, B, and C as needed.</p>	<p>Places:</p> <p>Safety Relief Valve PSV-141-F013A, B, or C control switch to OPEN</p> <p>Verifies:</p> <p>Reactor Vessel Pressure PI-14262</p> <p>Dropping</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
	<p><b>NOTE:</b></p> <p>Keys to operate SRV's are located in sealed Pink sound powered phone storage box, labeled "JP1207, JP1402, JP2201," inside the Remote Shutdown Panel Room.</p>			
38	<p>IF pneumatic supply to SRV's A, B, and C not available, Operate SRV's G, J, K, L, M, or N (ADS valves) individually from upper (lower) relay room Panel 1C628 (1C631) using Keylock switches.</p>	Determines N/A		
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>Pay close attention to the actual RPV pressure in the next step. This pressure will be used to determine if the candidate has violated the Tech Spec RCS cooldown rate.</p>			
*39	<p>Refer to Attachment A for RPV Pressure/Temperature Correlation.</p>	<p>Refers to Attachment A and Determines the lowest RPV pressure necessary to achieve the <b>less than 100°F/Hr cooldown</b></p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 00.ON.015.104

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

Step	Action	Standard	Eval	Comments
*40	<p>Plot cooldown in accordance with Attachment A and B.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>This completes the JPM</p>	<p>Refers to Attachment A and B</p> <ul style="list-style-type: none"> <li>• Observes Reactor Vessel Pressure PI-14262</li> <li>• Using Attachment A Determines RCS temperature</li> <li>• Plots this temperature on Attachment B</li> </ul> <p>Verifies cooldown rate is within 100°F/Hr limit</p>		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. A Hazardous GAS condition exists in the control room requiring abandonment of the Control Room.
- B. ON-100-009, Control Room Evacuation has been completed through step 4.2.
- C. Reactor vessel water level is being maintained by RCIC.
- D. Reactor pressure is being maintained by SRVs cycling.

### **INITIATING CUE**

Transfer control to the RSDP and commence a RCS cooldown **NOT TO EXCEED** 100°F/Hr with SRVs from the Remote Shutdown Panel beginning at step 4.3 of ON-100-009, Control Room Evacuation.



### **TASK CONDITIONS**

- A. A Hazardous GAS condition exists in the control room requiring abandonment of the Control Room.
- B. ON-100-009, Control Room Evacuation has been completed through step 4.2.
- C. Reactor vessel water level is being maintained by RCIC.
- D. Reactor pressure is being maintained by SRVs cycling.

### **INITIATING CUE**

Transfer control to the RSDP and commence a RCS cooldown **NOT TO EXCEED** 100°F/Hr with SRVs from the Remote Shutdown Panel beginning at step 4.3 of ON-100-009, Control Room Evacuation.

## APPROVAL AND ADMINISTRATIVE DATA SHEET

<u>S/RO</u>	<u>24.OP.001.007</u>	<u>0</u>	<u>10/5/05</u>	<u>264000</u>	<u>A2.09</u>	<u>3.7/ 4.1</u>
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

Task Title: Transfer of DG “E” for DG “C”

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

Rich Chin	10/5/05		
Writer	Date	Instructor/Writer	Date

Approval: \_\_\_\_\_

Nuclear Trng. Supv.	Date
---------------------	------

Date of Performance:	Validation Time (Min.)	Time Taken (Min.)

JPM Performed By:

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

Last	First	M.I.	Employee # / S.S. #
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Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

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

Signature	Typed or Printed
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Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 24.OP.001.007**

**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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

- A. OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E  
Attachment C (Revision 25) **[Steps 1 and 2 signed as being completed]**

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. Both Units were at 100% Steady State Power
- B. A Station Blackout occurred
- C. The "A" Diesel generator was started LOCALLY
- D. The control room crew is performing Unit 1(2) Response to Station Blackout EO-100(200)-030,
- E. To facilitate two diesels in same division operating, the control room is attempting to energize the "C" bus using the "E" DIESEL GENERATOR.
- F. Another operator is at the "E" DG and has already performed steps 1 and 2 of OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E Attachment C.

**V. INITIATING CUE**

Prepare the "C" DG for Transfer by performing steps 3 through 11 of OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E Attachment C.

**VI. TASK STANDARD**

C D/G removed from service, and E D/G ready to supply power to C ESS busses (IAW steps 3 - 11 of OP-024-004 attachment C)

**VII. TASK SAFETY SIGNIFICANCE**

Provide redundant power supply to safety related equipment.

# PERFORMANCE CHECKLIST

Page 3 of 10

Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
	<p>Obtain a controlled copy of OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E Attachment C.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Next step produces Control Room and local alarm</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>If necessary inform candidate that all VERIFY initials are assumed to be completed as required.</p>	<p>Controlled copy obtained from evaluator.</p>		
*1.	At 0C521C Diesel Generator C Engine Control Panel, PLACE DG C Control Mode Select Switch 43CM to LOCAL.	<p>Places:</p> <p>DG C Control Mode Select Switch 43CM to LOCAL.</p>		
2.	<p>OBSERVE following:</p> <p>Control Switches Not Proper for Remote Auto Oper. ALARM.</p>	<p>Verifies:</p> <p>Control Switches Not Proper for Remote Auto Oper.</p> <p>Alarm window E08 - LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 4 of 10

Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
3	<b><u>EVALUATOR CUE:</u></b> Alarm window E08 is LIT			
	Remote white light EXTINGUISHES.	Verifies:  Remote White light NOT LIT		
4	<b><u>EVALUATOR CUE:</u></b> Remote White light is NOT LIT			
	Local white light ILLUMINATED.	Verifies:  Local White light LIT		
5	<b><u>EVALUATOR CUE:</u></b> Local White light is LIT			
	DG C Available for Emergency white light EXTINGUISHES.	Verifies:  DG C Available for Emergency White light NOT LIT		

\*Critical Step

#Critical Sequence

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# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
6.	<b><u>EVALUATOR CUE:</u></b> DG C Available for Emergency White light is NOT LIT  ENSURE Control Room received DG Panel ALARM.	Calls the Control Room to verify DG Panel ALARM has been received.		
	<b><u>EVALUATOR CUE:</u></b>  Role play the control room and inform the candidate that DG Panel ALARM has been received			
*7.	At 0C521C CLOSE ESW Loop A Valves for DG C by momentarily placing switch to CLOSE for ESW Supply/Return HV-01112C/HV-01122C.	Places: ESW Supply/Return HV-01112C/HV-01122C switch to CLOSE  AND  Verifies:  Red light NOT LIT Amber light LIT		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 6 of 10

Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
*8.	<b><u>EVALUATOR CUE:</u></b> Red light NOT LIT Amber light LIT  At 0C521C CLOSE ESW Loop B Valves for DG C by momentarily placing switch to CLOSE for ESW Supply/Return HV-01110C/HV-01120C.	Places: ESW Supply/Return HV-01110C/HV-01120C switch to CLOSE  AND  Verifies:  Red light NOT LIT Amber light LIT		
	<b><u>EVALUATOR CUE:</u></b> Red light NOT LIT Amber light LIT  <b>NOTE:</b> Switching protective equipment required at switchgear.			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 7 of 10

Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>This JPM will not proceed to the point of racking the breakers. Therefore, Switching protective equipment will not be necessary.</p>			
9.	At 0C512C DG E for DG C Transfer Panel PLACE DG C Bldg Ventil Supply Fan 0V512C to STOP.	Places: DG C Bldg Ventil Supply Fan 0V512C to STOP.		
*10.	At 0C512C PLACE HS-00057C, DG C Auto Start Control, to DISABLE to prevent inadvertent start while transferring logic.	Places: HS-00057C, DG C Auto Start Control, to DISABLE		
11.	At 0C512C OBSERVE DG C Aligned white light EXTINGUISHED.	Verifies: DG C Aligned white light NOT LIT		
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>DG C Aligned white light NOT LIT</p>			
*#12.	At 0C512C SEQUENTIALLY PLACE following switches to D/G E position:	SEQUENTIALLY Places the following switches to D/G E position:		
#		a. HS-00058C Generator Metering & Computer Monitoring		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

Page 8 of 10

Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
#	<p><b>Note:</b></p> <p><b>Cycle the following HS several times to clean contacts</b></p>	b. HS-00059C Generator Field Current Computer Monitoring		
#		c. HS-00060C Diesel Alarms to Control Room Annunciator		
#		d. HS-00061C ESW Temp Monitoring & HVAC Alarms		
#		e. HS-00062C ESW Loop A Supply Valve Control & Indication		
#		f. HS-00063C ESW Loop A Return Valve Control & Indication		
#		g. HS-00064C ESW Loop B Supply Valve Control & Indication		
#		h. HS-00065C DG Bypass Indication Unit 1		
#		i. HS-00066C DG Bypass Indication Unit 2		
#				

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 9 of 10

Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
#		j. HS-00067C Alignment Alarm & Indication Only		
#		k. HS-00068C ESW Loop B Return Valve Control & Indication		
#		l. HS-00069C ESW Bypass Indication and Auto Loop Transfer		
#		m. HS-00070C Ventilation Supply Fans Control		
#		n. HS-00071C DG Ctl, Indication, Metering & Breaker Trip Interlock		
#		o. HS-00072C Generator Relaying & Breaker Trip Interlock		
#		p. HS-00073C Generator Metering & Breaker Trip Interlock		
#		q. HS-00074C Engine Control & Indication		
#		r. HS-00075C Engine, Generator & ESW Pump Control		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Page 10 of 10

Appl. To/JPM No.: S/RO 24.OP.001.007

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

Step	Action	Standard	Eval	Comments
#	<b><u>EVALUATOR CUE:</u></b>  This completes the JPM.	s. HS-00076C Generator Breaker Control		

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

- A. Both Units were at 100% Steady State Power.
- B. A Station Blackout Occurred.
- C. The "A" Diesel generator was started LOCALLY.
- D. The control room crew is performing Unit 1(2) Response to Station Blackout EO-100(200)-030.
- E. To facilitate two diesels in same division operating, the control room is attempting to energize the "C" bus using the "E" Diesel generator.
- F. Another operator is at the "E" DG and has already performed steps 1 and 2 of OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E Attachment C.

## **INITIATING CUE**

Prepare the "C" DG for Transfer by performing steps 3 through 11 of OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E Attachment C.

## **TASK CONDITIONS**

- A. Both Units were at 100% Steady State Power.
- B. A Station Blackout Occurred.
- C. The "A" Diesel generator was started LOCALLY.
- D. The control room crew is performing Unit 1(2) Response to Station Blackout EO-100(200)-030.
- E. To facilitate two diesels in same division operating, the control room is attempting to energize the "C" bus using the "E" Diesel generator.
- F. Another operator is at the "E" DG and has already performed steps 1 and 2 of OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E Attachment C

## **INITIATING CUE**

Prepare the "C" DG for Transfer by performing steps 3 through 11 of OP-024-004, TRANSFER AND TEST MODE OPERATIONS OF DIESEL GENERATOR E Attachment C.

PPL SUSQUEHANNA, LLC

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	50.OP.004.152	2	10/5/05	295016	AA1.06	4.0/4.1
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

Task Title: Establish and Maintain Reactor Vessel Level (RCIC Not Injecting) from the RSDP Using the Trip and Throttle Valve

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

Rich Chin	10/5/05		
Writer	Date	Instructor/Writer	Date

Approval:

\_\_\_\_\_  
Nuclear Trng. Supv.                      Date

	20	
Date of Performance:	Validation Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name: \_\_\_\_\_  
Last                      First                      M.I.                      Employee # / S.S. #

Performance (      ) Satisfactory                      (      ) Unsatisfactory  
Evaluation:

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

Comments:

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 50.OP.004.152**

**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.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

OP-150-001, RCIC System (Revision 24)

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the requirements of Operational Activity(s):  
39 RCIC Manual Start

**IV. TASK CONDITIONS**

- A. A condition has occurred requiring abandonment of the Control Room.
- B. All required immediate operator actions of ON-100-009, Control Room Evacuation have been completed prior to abandoning the Control Room.
- C. Transfer switch positions have been changed on the RSDP IAW ON-100-009, Control Room Evacuation Section 4.3.
- D. Reactor vessel wide range water level is 0 inches and lowering.
- E. Reactor pressure is being maintained by SRVs cycling.
- F. RCIC is not running. There has been no initiation signal.
- G. All personnel have been evacuated from RCIC pump room and RCIC pipe areas 670' Reactor Building

**V. INITIATING CUE**

Manually initiate RCIC and inject at 625 gpm to restore RPV water level.

**VI. TASK STANDARD**

RCIC started and feeding the reactor vessel at 625 gpm.

**VII. TASK SAFETY SIGNIFICANCE**

Provides cooling water to the reactor core.

# PERFORMANCE CHECKLIST

Page 3 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR NOTE:</u></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 ALL CAPITAL LETTERS</b>.</li> </ul>			
1	Obtain a controlled copy of OP-150-001, RCIC System	Controlled copy obtained.		
2	Selects the correct section to perform.	Selects section 2.15		
3	Review the prerequisites.	Ensures all prerequisites have been met.		
	<b><u>EVALUATOR CUE:</u></b> Inform the student all prerequisites have been met.			
4	Review all precautions.	Follows all precautions as applicable.		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

Page 4 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>Following interlocks are defeated for RCIC when controlled from remote shutdown panel:</p> <p>Isolations For HV-149-F007 AND HV-149-F008</p> <p>All Turbine Trips Except Overspeed (110% &amp; 124%) AND Manual</p> <p>Exhaust Line Vacuum Breaker Isolations</p> <p>RCIC Auto Initiations</p> <p>RCIC Turbine Shutdown On High Level 8 (+54")</p> <p>Min Flow To Supp Pool HV-149-F019 Operation On Hi/Low Flow</p> <p>Auto Suction Transfer From CST To Supp Pool On Low CST Level</p> <p>Steam Admission Valve HV-150-F045 With RCIC Turbine Exhaust Valve HV-150-F059 Closed</p>			
5	<p>OBSERVE ES-14901 RCIC STATIC INVERTER light ILLUMINATED.</p>	<p>Verifies:</p> <p>RCIC STATIC INVERTER 120V AC OUT AVAILABLE</p> <p>Green Light - LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 5 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
6	<b><u>EVALUATOR CUE:</u></b> ES-14901 RCIC STATIC INVERTER Green Light - LIT	Verifies: RCIC TURBINE FLOW CONTROLLER FIC-14903 in AUTO set at 625 gpm.		
	<b><u>EVALUATOR CUE:</u></b> RCIC TURBINE FLOW CONTROLLER FIC-14903 in AUTO set at 625 gpm.			
7	<b><u>EVALUATOR NOTE:</u></b> Once RCIC is operating, pump room and pipe areas may be accessed again.	Determines: From initial conditions that this has already been completed.		
	If time permits, EVACUATE personnel from RCIC pump room and RCIC pipe areas 670' Reactor Building prior to pump start.			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 6 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
8	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>If malfunction of FIC-14903 is observed, proceed to 2.15.7 to place RCIC in service using Trip &amp; Throttle Valve HV-15012.</p> <p><b><u>FAULT STATEMENT</u></b></p> <p><b>WHEN RCIC CONTROLLER IS PLACED IN MANUAL, IT WILL NOT ADJUST TO ZERO "0."</b></p>	<p>Places:</p> <p>RCIC TURBINE FLOW CONTROLLER FIC-14903 in MANUAL</p> <p>AND</p> <p>Depresses CLOSE pushbutton</p> <p>AND</p> <p>Verifies:</p> <p>Output signal decreasing to ZERO</p>		
	<p>PLACE RCIC TURBINE FLOW CONTROLLER FIC-14903 in MANUAL set for minimum speed.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>RCIC TURBINE FLOW CONTROLLER FIC-14903 output signal is <b>STILL at 100%</b></p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 7 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
9	<p>When the controller will not adjust to zero, leave Section 2.15.6 and go to Section 2.15.7.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Once RCIC is operating, pump room and pipe areas may be accessed again.</p>	Select Section 2.15.7.		
10	<p>If time permits, EVACUATE personnel from RCIC pump room and RCIC pipe areas 670' Reactor Building prior to pump start.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>RCIC turbine can be operated utilizing trip and throttle valve if governor valve is in open position. This could be caused by failure in hydraulic control circuit such as loss of control signal. Loss of control signal will fail governor valve full open and could be caused by inverter failure or loss of power. Time spent in this condition of operation should be limited until full automatic control regained.</p>	<p>Determines:</p> <p>From initial conditions that this has already been completed.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 8 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
*11	<p>For manual startup using trip and throttle valve: CLOSE TURBINE TRIP AND THROTTLING HV-15012.</p> <p><b><u>EVALUATOR CUE:</u></b> HV-15012 Amber light – LIT and Red light NOT LIT</p>	<p>Places and HOLDS control switch HV-15012 to CLOSE UNTIL</p> <p>Amber light – LIT and Red light NOT LIT</p>		
12	<p>OPEN STEAM TO RCIC TURBINE HV-150-F045.</p> <p><b><u>EVALUATOR CUE:</u></b> HV-150-F045 Amber light – NOT LIT and Red light - LIT</p>	<p>Places control switch HV-150-F045 to OPEN</p> <p>Verifies: Amber light – NOT LIT and Red light – LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 9 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
13	<p>START RCIC BARO CDSR VACUUM PP 1P219.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>RCIC BARO CDSR VACUUM PP 1P219</p> <p>Amber light – NOT LIT and</p> <p>Red light – LIT</p>	<p>Places control switch RCIC BARO CDSR VACUUM PP 1P219 to START</p> <p>Verifies:</p> <p>Amber light – NOT LIT and</p> <p>Red light – LIT</p>		
14	<p>ENSURE MIN FLOW TO SUPP POOL FV-149-F019 OPEN.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>FV-149-F019</p> <p>Amber light – NOT LIT and</p> <p>Red light – LIT</p>	<p>Verifies:</p> <p>FV-149-F019</p> <p>Amber light – NOT LIT and</p> <p>Red light – LIT</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 10 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
15	<p>OPEN RCIC INJECTION HV-149-F013.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>HV-149-F013</p> <p>Amber light – NOT LIT and</p> <p>Red light – LIT</p>	<p>Places control switch HV-149-F013 to OPEN</p> <p>Verifies:</p> <p>Amber light – NOT LIT and</p> <p>Red light – LIT</p>		
*16	<p>INCREASE speed by throttling TURBINE TRIP AND THROTTLING HV-15012 until desired flow obtained.</p>	<p>Intermittently places control switch HV-15012 to OPEN</p> <p>Verifies:</p> <p>HV-15012</p> <p>Amber light – LIT and</p> <p>Red light - LIT</p> <p>AND</p> <p>RCIC PUMP INJECTION FLOW (FI-14903) rising to 625 gpm.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

Page 11 of 11

Appl. To/JPM No.: 50.OP.004.152

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

Step	Action	Standard	Eval	Comments
17	<p><b><u>EVALUATOR CUE:</u></b></p> <p>HV-15012</p> <p>Amber light – LIT and</p> <p>Red light - LIT</p> <p>FI-14903 indicates 625 gpm.</p> <p>When RCIC flowrate above 250 gpm, CLOSE MIN FLOW TO SUPP POOL FV-149-F019.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>FV-149-F019</p> <p>Amber light –LIT and</p> <p>Red light – NOT LIT</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>That completes this JPM</p>	<p>Places control switch HV-149-F019 to CLOSE and</p> <p>Verifies:</p> <p>Amber light –LIT and</p> <p>Red light – NOT LIT</p>		

\*Critical Step

#Critical Sequence



## **TASK CONDITIONS**

- A. A condition has occurred requiring abandonment of the Control Room.
- B. All required immediate operator actions of ON-100-009, Control Room Evacuation have been completed prior to abandoning the Control Room.
- C. Transfer switch positions have been changed on the RSDP IAW ON-100-009, Control Room Evacuation Section 4.3.
- D. Reactor vessel wide range water level is 0 inches and lowering.
- E. Reactor pressure is being maintained by SRVs cycling.
- F. RCIC is not running. There has been no initiation signal.
- G. All personnel have been evacuated from RCIC pump room and RCIC pipe areas 670' Reactor Building

## **INITIATING CUE**

Manually initiate RCIC and inject at 625 gpm to restore RPV water level.

## **TASK CONDITIONS**

- A. A condition has occurred requiring abandonment of the Control Room.
- B. All required immediate operator actions of ON-100-009, Control Room Evacuation have been completed prior to abandoning the Control Room.
- C. Transfer switch positions have been changed on the RSDP IAW ON-100-009, Control Room Evacuation Section 4.3.
- D. Reactor vessel wide range water level is 0 inches and lowering.
- E. Reactor pressure is being maintained by SRVs cycling.
- F. RCIC is not running. There has been no initiation signal.
- G. All personnel have been evacuated from RCIC pump room and RCIC pipe areas 670' Reactor Building

## **INITIATING CUE**

Manually initiate RCIC and inject at 625 gpm to restore RPV water level.

**PPL SUSQUEHANNA, LLC**

**JOB PERFORMANCE MEASURE**

**APPROVAL AND ADMINISTRATIVE DATA SHEET**

<u>S/RO</u>	<u>55.OP.007.001</u>	<u>1</u>	<u>10/5/05</u>	<u>201001</u>	<u>A2.07</u>	<u>3.2/3.1</u>
Appl.	JPM Number	Rev. No.	Date	NUREG 1123	K/A No.	K/A Imp.
To				Sys. No.		

Task Title: Shift The CRD Flow Stations From A To B In Accordance With OP-255-001

Completed By: \_\_\_\_\_ Validated \_\_\_\_\_

<u>Rich Chin</u>	<u>10/5/05</u>	_____	_____
Writer	Date	Instructor/Writer	Date

Approval:

\_\_\_\_\_  
Nuclear Trng. Supv.                      Date

_____	<u>20</u>	_____
Date of Performance:	Validation Time (Min.)	Time Taken (Min.)

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

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

<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>
Last	First	M.I.	Employee # / S.S. #

Performance Evaluation:                      (    ) Satisfactory                      (    ) Unsatisfactory

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

<u>      </u>	<u>      </u>
Signature	Typed or Printed

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

**REQUIRED TASK INFORMATION  
JOB PERFORMANCE MEASURE  
S/RO 55.OP.007.001**

**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.
- C. If in the judgment of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.
- D. Peer checking is the expectation for all evolutions; however, since a JPM is an individual effort, no peer check will be provided and Self Checking is required.

**II. REFERENCES**

OP-255-001, Control Rod Drive Hydraulic System (Rev. 34)

**III. REACTIVITY MANIPULATIONS**

This JPM satisfies the following Operational Activity(s):  
None

**IV. TASK CONDITIONS**

- A. Unit 2 is at 80 percent reactor power.
- B. While adjusting Control Rods per Reactor Engineering Instructions, it is noted that the "A" CRD Flow Control station is not responding properly.
- C. The "B" CRD Flow Control Station needs to be placed in service so that I&C can investigate.

**V. INITIATING CUE**

Swap CRD flow control stations from CRD DRIVE WATER HEADER FLOW VALVE FV-2F002A to CRD DRIVE WATER HEADER FLOW VALVE FV-2F002B.

**VI. TASK STANDARD**

CRD DRIVE WATER HEADER FLOW VALVE FV-2F002B in service and CRD DRIVE WATER HEADER FLOW VALVE FV-2F002A removed from service

**VII. TASK SAFETY SIGNIFICANCE**

Provide reliable drive water flow to the control rod drive mechanisms

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>With the A flow control station in service the following conditions exist:</p> <ul style="list-style-type: none"> <li>• M/A-2D009A is in auto.</li> <li>• Closed and Open position indicator lights for FCV are illuminated.</li> <li>• M/A-2D009B is in MAN. <ul style="list-style-type: none"> <li>• FCV B closed light is ILLUMINATED and the open light is EXTINGUISHED.</li> </ul> </li> </ul>			
1	Obtain a controlled copy of OP-255-001.	Obtains controlled copy.		
2	Select the correct section to perform.	Selects Section 2.4.		
3	Review the prerequisites.	Ensures prerequisites are met.		
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Inform the student that all prerequisites have been met.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
	<p><b>NOTE</b></p> <p>Following steps change from Flow Control Valve FV-2F002A to FV-2F002B. To change from valve B to A, use valves in parentheses.</p>			
4	<p>Ensure FC-C12-2R600, CRD Flow Controller, in AUTO</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>FIC-C12-2R600 is located on Panel 2C601 in the Control Room.</p> <p>Role-play the control room and inform the candidate that the controller is in automatic.</p>	<p>Calls the Control Room and confirms that CRD FLOW CONTROLLER FIC-C12-2R600 is in AUTO.</p>		
5	<p>Ensure M/A-2D009B Man/Auto Station Control Valve B controller in MAN with Red pen indicating 0. Red pen displays MANUAL demand on the local controller.</p>	<p>Verifies:</p> <p>M/A-2D009B Man/Auto Station in MAN</p> <p>AND</p> <p>Red pen is at 0.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
6	<b><u>EVALUATOR CUE:</u></b> M/A-2D009B Man/Auto Station in MAN AND Red pen is at 0.	Verifies: Position Indicator Flow Control Valve B Amber light LIT Red light NOT LIT		
	Ensure FV-2F002B CLOSED, as indicated by Position Indicator Flow Control Valve B Amber light ILLUMINATED <u>AND</u> Red light EXTINGUISHED.			
7	<b><u>EVALUATOR CUE:</u></b> Amber light LIT Red light NOT LIT	Rotates: Flow Control Valve B Iso 246F046B handwheel CLOCKWISE until valve stem moves in close direction then rotates handwheel COUNTER CLOCKWISE until valve stem is returned to full open.		
	Ensure 246F046B, Flow Control Valve B Iso, OPEN.			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Inform the candidate that the valve is FULL COUNTER CLOCKWISE</p> <p><b>NOTE</b></p> <p>To prevent large (20 to 25 gpm) flow changes, following step should be performed very slowly.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>In the next step, as the candidate begins opening the valve, provide a cue that an audible sound can be heard coming from the flow through the pipe.</p> <p><b>AFTER</b> candidate stops moving valve, provide cue that the Audible sound change has <b>STOPPED.</b></p>			
*8	Slowly Crack Open Flow Control Valve B Iso 246F047B.	<p>Very slowly rotates:</p> <p>Flow Control Valve B Iso 246F047B handwheel COUNTER CLOCKWISE until flow is established.</p>		

\*Critical Step

#Critical Sequence



# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 55.OP.007.001

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

Step	Action	Standard	Eval	Comments
9	<p>Observe following, indicating flow stabilized:</p> <p>Audible sound change has STOPPED</p> <p>M/A-2D009A Man/Auto Station Control Valve A Black pen STABLE. The black pen displays control room demand.</p> <p>Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Audible sound change has STOPPED.</p> <p>M/A-2D009A Man/Auto Station Control Valve A Black pen STABLE.</p> <p>Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm.</p>	<p>Verifies:</p> <p>Audible sound change has STOPPED.</p> <p>M/A-2D009A Man/Auto Station Control Valve A Black pen STABLE.</p> <p>Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm.</p>		
10	<p>WHEN stable flow indicated, THEN Fully Open 246F047B, Flow Control Valve B Iso.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Flow Control Valve B Iso 246F047B is full COUNTER CLOCKWISE</p>	<p>Rotates:</p> <p>Flow Control Valve B Iso 246F047B handwheel COUNTER CLOCKWISE until full open is reached.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 55.OP.007.001

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

Step	Action	Standard	Eval	Comments
*11	<b><u>EVALUATOR NOTE</u></b>  In the next step  Flow Control Valve A will go in the closed direction as Flow Control Valve B is opened. Both indicating lights for both valves will be LIT during this transition.	Slowly Rotates:  Manual adjust knob on M/A-2D009B Man/Auto Station Control Valve UNTIL Black and red pens CLOSELY MATCHED as possible.		
	Slowly Rotate the manual adjust knob on M/A-2D009B Man/Auto Station Control Valve <u>UNTIL</u> Black and red pens CLOSELY MATCHED as possible			
	<b><u>EVALUATOR CUE:</u></b>  M/A-2D009B Man/Auto Station Control Valve Black and red pens are MATCHED			

\*Critical Step

#Critical Sequence

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

Step	Action	Standard	Eval	Comments
12	<p>Observe following indicating flow stabilized: Audible sound change STOPPED.</p> <p>M/A-2D009A Man/Auto Station Control Valve A Black pen DECREASES <u>AND</u> STABILIZES</p> <p>Flow Control Station Total Water Flow FI- 2R019 2R019 ~ 63 gpm</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Audible sound change HAS STOPPED.</p> <p>M/A-2D009A Man/Auto Station Control Valve A Black pen DECREASED <u>AND</u> IS NOW STABLE.</p> <p>Flow Control Station Total Water Flow FI- 2R019 2R019 ~ 63 gpm.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Nothing will occur when this step is performed. The candidate should match these needles as closely as possible. The closer the match the smaller the change when the controller is placed in manual later.</p>	<p>Observes the following indicating flow stabilized:</p> <ul style="list-style-type: none"> <li>• Audible sound change STOPPED.</li> <li>• M/A-2D009A Man/Auto Station Control Valve A Black pen DECREASES <u>AND</u> STABILIZES.</li> <li>• Flow Control Station Total Water Flow FI-2R019 2R019 ~ 63 gpm.</li> </ul>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 55.OP.007.001

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

Step	Action	Standard	Eval	Comments
13	<p>Slowly Rotate manual adjust knob on M/A-2D009A Man/Auto Station Control Valve until Black and Red pens CLOSELY MATCHED.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>M/A-2D009A Man/Auto Station Pens are matched.</p>	<p>Slowly Rotates:</p> <p>Manual adjust knob on M/A-2D009A Man/Auto Station Control Valve CLOCKWISE until Black and Red pens CLOSELY MATCHED.</p>		
14	<p>Ensure Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm and stable</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Total Water Flow FI-2R019 is 63 gpm and STABLE</p>	<p>Verifies:</p> <p>Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm and stable.</p>		
15	<p>Place M/A-2D009A Man/Auto Station Control Valve A control switch to MAN.</p>	<p>Rotates:</p> <p>M/A-2D009A Man/Auto Station Control Valve A control switch CLOCKWISE to MAN.</p>		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
*16	<p><b><u>EVALUATOR CUE:</u></b></p> <p>M/A-2D009A Man/Auto Station is in MAN</p>	<p>Rotates:</p> <p>M/A-2D009B Man/Auto Station Control Valve B control switch CLOCKWISE to AUTO.</p>		
	<p>Place M/A-2D009B Man/Auto Station Control Valve B control switch to AUTO.</p>			
*17	<p><b><u>EVALUATOR CUE:</u></b></p> <p>M/A-2D009B Man/Auto Station is in AUTO</p>	<p>Slowly Rotates:</p> <p>Manual adjust knob on M/A-2D009A Man/Auto Station Control Valve A COUNTER CLOCKWISE <u>UNTIL</u> Red pen indicates 0.</p> <p>AND</p> <p>Verifies:</p> <p>Position Indicator Flow Control Valve A</p> <p>Red light-NOT LIT.</p>		
	<p>Slowly Rotate manual adjust knob on M/A-2D009A Man/Auto Station Control Valve A <u>UNTIL</u> Red pen indicates 0.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
18	<p><b><u>EVALUATOR CUE:</u></b></p> <p>M/A-2D009A Man/Auto Station Red pen is at 0</p> <p>AND</p> <p>Position Indicator Flow Control Valve A</p> <p>Red light is NOT LIT.</p>	Ensure Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm and stable.		
	<p>Ensure Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm and stable.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Total Water Flow FI-2R019 is 63 gpm and STABLE</p> <p><b>NOTE</b></p> <p>To prevent large (20 to 25 gpm) flow changes, following step should be performed very slowly.</p>			

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
19	Slowly Close Flow Control Valve A Iso 246F047A.  <b><u>EVALUATOR CUE:</u></b>  Flow Control Valve A Iso 246F047A valve is FULL CLOCKWISE	Slowly Rotates:  Flow Control Valve A Iso 246F047A valve handwheel CLOCKWISE until full closed is reached		
20	IF the in-service CRD Flow Control Valve, FV-2F002B is at a mid-position and dual indication is not indicated, THEN Perform the following at panel 2C601  <b><u>EVALUATOR CUE:</u></b>  Position Indicator Flow Control Valve A  Red light-NOT LIT.  Red light and Amber light - LIT	Verifies the following indicating lights for FV-2F002A :  Position Indicator Flow Control Valve A  Red light-NOT LIT.  Red light and Amber light - LIT  AND  Determines no additional actions needed		

\*Critical Step

#Critical Sequence

# PERFORMANCE CHECKLIST

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

Step	Action	Standard	Eval	Comments
21	<p>Check following for normal CRD System parameters:</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Flow Control Station Total Water Flow FI-2R019 is 63 gpm.</p> <p>Downstream P-C/Rea Differential Pressure PDI-2R005 is 40 psid.</p> <p>Upstream P-C/Rea Differential Pressure PDI-2R009 is 250 psig.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>This completes the JPM.</p>	<p>Check following for normal CRD System parameters:</p> <ul style="list-style-type: none"> <li>Flow Control Station Total Water Flow FI-2R019 ~ 63 gpm.</li> <li>Downstream P-C/Rea Differential Pressure PDI-2R005 &lt; 50 psid.</li> <li>Upstream P-C/Rea Differential Pressure PDI-2R009 ~ 250 psig.</li> </ul>		

\*Critical Step

#Critical Sequence



**TASK CONDITIONS:**

- A. Unit 2 is at 80 percent reactor power.
- B. While adjusting Control Rods per Reactor Engineering Instructions, it is noted that the "A" CRD Flow Control station is not responding properly.
- C. The "B" CRD Flow Control Station needs to be placed in service so that I&C can investigate.

**INITIATING CUE:**

Swap CRD flow control stations from CRD DRIVE WATER HEADER FLOW VALVE FV-2F002A to CRD DRIVE WATER HEADER FLOW VALVE FV-2F002B.

**TASK CONDITIONS:**

- A. Unit 2 is at 80 percent reactor power.
- B. While adjusting Control Rods per Reactor Engineering Instructions, it is noted that the "A" CRD Flow Control station is not responding properly.
- C. The "B" CRD Flow Control Station needs to be placed in service so that I&C can investigate.

**INITIATING CUE:**

Swap CRD flow control stations from CRD DRIVE WATER HEADER FLOW VALVE FV-2F002A to CRD DRIVE WATER HEADER FLOW VALVE FV-2F002B.