

Facility: **SUSQUEHANNA**Date of Examination: **8/09-8/13 2004**Exam Level (circle one): **RO**Operating Test No.: **N/A**

## Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
202002 A2.05 3.1/3.1 64.OP.007.151 Reset the Fluid Drive Scoop Tube Lock (OP-164-001)	D, A, S	1
261000 A3.01 3.2/3.3 Perform a Manual Startup of the SGTS in Accordance With OP-070-001	N, E, A, S	9
264000 A4.04 3.7/3.7 Manually Synchronize Diesel Generator "A" to 4.16KV Bus 1A from Panel OC653 in Accordance With OP-024-001	D, E, S	6
295028 EA1.03 3.9/3.9 Reset Drywell Cooling Isolation and Restore Drywell Cooling IAW ES-134-001 (Control Room Actions)	D, E, L, S	7
295037 EA1.11 3.5/3.6 Bypass MSIV and CIG Interlocks During An ATWS And Restore CIG (OP-184-001)	D, E, L, S	5
259001 A2.07 3.7/3.8 Perform Switching Feedwater Level Control 45.OP.013.151 (OP-145-001)	D, A, S	2
295018 AA1.03 3.3/3.4 Place Standby RBCCW Pump In Service IAW OP-114-001 (Pump casing drain line leak develops)	N, A, S	8
206000 A4.13 4.1/4.0 Recovery from a Manual Closure of HPCI Isolation Valves With an Initiation Signal Present With a Steam Leak Developing. (OP-152-001)	D, E, A, S	4

## In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

262002 A4.01 2.8/3.1 Place The Vital AC Uninterruptible Power Supply AC System In Service In Accordance With OP-157-001	M	6
212000 A1.01 2.8/2.9 Start RPS MG Set 2S237A from Local Control Panel 2G201A IAW OP-258-001	E M, R, A	7
201002 K1.06 3.2/3.3 Bypass Control Rod at Rod Drive Control Cabinet (RDCC) (OP-256-001)	E/A, M	1

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E/A)Emergency/Abnormal, (E)SF

Facility: SUSQUEHANNA Date of Examination: 8/09-8/13 2004Exam Level (circle one): **SRO-I** Operating Test No.: N/A

## Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
202002 A2.05 3.1/3.1 64.OP.007.151 Reset the Fluid Drive Scoop Tube Lock (OP-164-001)	D, A, S	1
261000 A3.01 3.2/3.3 Perform a Manual Startup of the SGTS in Accordance With OP-070-001	N, E, A, S	9
264000 A4.04 3.7/3.7 Manually Synchronize Diesel Generator "A" to 4.16KV Bus 1A from Panel OC653 in Accordance With OP-024-001	D, E, S	6
295028 EA1.03 3.9/3.9 Reset Drywell Cooling Isolation and Restore Drywell Cooling IAW ES-134-001 (Control Room Actions)	D, E, L, S	7
295037 EA1.11 3.5/3.6 Bypass MSIV and CIG Interlocks During An ATWS And Restore CIG (OP-184-001)	D, E, L, S	5
295018 AA1.03 3.3/3.4 Place Standby RBCCW Pump In Service IAW OP-114-001 (Pump casing drain line leak develops)	N, A, S	8
206000 A4.13 4.1/4.0 Recovery from a Manual Closure of HPCI Isolation Valves With an Initiation Signal Present With a Steam Leak Developing. (OP-152-001)	D, E, A, S	4

## In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

262002 A4.01 2.8/3.1 Place The Vital AC Uninterruptible Power Supply AC System In Service In Accordance With OP-157-001	M	6
212000 A1.01 2.8/2.9 Start RPS MG Set 2S237A from Local Control Panel 2G201A IAW OP-258-001	E, M, R, A	7
201002 K1.06 3.2/3.3 Bypass Control Rod at Rod Drive Control Cabinet (RDCC) (OP-256-001)	E/A, M	1

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E/A)Emergency/Abnormal, (E)SF

Facility: SUSQUEHANNA Date of Examination: 8/09-8/13 2004Exam Level (circle one): **SRO-U** Operating Test No.: N/A

## Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
261000 A3.01 3.2/3.3 Perform a Manual Startup of the SGTS in Accordance With OP-070-001	N, E, A, S	9
295037 EA1.11 3.5/3.6 Bypass MSIV and CIG Interlocks During An ATWS And Restore CIG (OP-184-001)	D, E, L, S	5

## In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

262002 A4.01 2.8/3.1 Place The Vital AC Uninterruptible Power Supply AC System In Service In Accordance With OP-157-001	M	6
212000 A1.01 2.8/2.9 Start RPS MG Set 2S237A from Local Control Panel 2G201A IAW OP-258-001	E M, R, A	7
201002 K1.06 3.2/3.3 Bypass Control Rod at Rod Drive Control Cabinet (RDCC) (OP-256-001)	E/A, M	1

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E/A)Emergency/Abnormal, (E)SF

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

<u>S/RO</u>	<u>64.OP.007.151</u>	<u>1</u>	<u>02/11/04</u>	<u>202002 A2.05</u>	<u>3.1/3.1</u>
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Reset A Fluid Drive Scoop Tube Lock IAW OP-164-001

Completed By: \_\_\_\_\_ Reviews: \_\_\_\_\_

<u>Russ Halm</u>	_____	_____	_____	_____
Writer	Date	Instructor/Writer	Date	

Approval:

_____	_____	_____	_____
Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date

_____	<u>10</u>	_____
Date of Performance:	Allowed 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 64.OP.007.151**

**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.

**II. REFERENCES**

OP-164-001, Reactor Recirculation System (Revision 38)

**III. REACTIVITY MANIPULATIONS**

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

34 Reset Recirculation Scoop Tube Lock

**IV. TASK CONDITIONS**

- A. The plant is in Mode 1 @ 95 % power.
- B. Scoop Tube Lock has occurred on 'B' Recirc MG Set.
- C. The condition which caused the Scoop Tube Lock has been corrected.
- D. Manual Control has NOT been taken at the positioner

**V. INITIATING CUE**

Reset the Fluid Drive Scoop Tube Lock.

**VI. TASK STANDARD**

"B" Recirculation MG Scoop Tube Lock is reset, then re-locked when speed is determined to be increasing rapidly.

**VII. TASK SAFETY SIGNIFICANCE**

Potential Unanticipated positive reactivity addition

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 64.OP.007.151

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 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>• Select any MODE 1 100% IC.</li> <li>• Place Simulator in RUN</li> <li>• Manually runback recirc flow to achieve 95% power</li> <li>• Run batch file <b>RRB.STLBJPM.</b></li> <li>• Depress "B" Reactor Recirc Controller INCREASE pushbutton to ensure controller is saturated.</li> </ul>			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 64.OP.007.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>Simulator Operator</u></b></p> <ul style="list-style-type: none"> <li>• During this JPM you will be required to ROLE play as the in plant NPO at the scoop tube positioner.</li> <li>• Select Recirc Screen RR6.</li> <li>• Monitor Tachometer Generator Speed SI-14032B</li> <li>• AND</li> <li>• Servo Controller Demand XI-14032B.</li> </ul> <p>As NPO, direct student to change demand until signals are matched.</p>			
1	Obtain a controlled copy of OP-164-001, Reactor Recirculation System	Controlled copy obtained.		
2	Select the correct section to perform.	Selects section 2.6		
3	Review the prerequisites.	Ensures all prerequisites have been met.		
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Inform the student all prerequisites have been met.</p>			
4	Review all precautions.	Follows all precautions as applicable.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 64.OP.007.151

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

Step	Action	Standard	Eval	Comments
5	ENSURE Reactor Recirculation Pump B Speed Controller SY-B31-1R621B is in MANUAL	Verifies: Reactor Recirculation Pump B Speed Controller SY-B31-1R621B AMBER MANUAL light LIT		
6	OBSERVE White indicator light above Scoop Tube B LOCK OR RESET HS-B31-1S03B pushbutton ILLUMINATED	Verifies: White indicator light above Scoop Tube B LOCK OR RESET HS-B31-1S03B pushbutton LIT		
7	REMOVE the enclosure cover from the amplifier at 1CB137B and ESTABLISH communication between the Control Room and the scoop tube positioner / amplifier.  <b><u>EVALUATOR CUE:</u></b> Role-play as NPO at scoop tube positioner, report that enclosure cover is removed.	Contacts in plant NPO and directs removal of enclosure cover and Establishes communication between the Control Room and the scoop tube positioner / amplifier.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 64.OP.007.151

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

Step	Action	Standard	Eval	Comments
*8	<p>Restoration Of Scoop Tube Lock Without Having Taken Manual Control At Positioner</p> <p>If the scoop tube lockout condition is being reset without having taken manual (i.e. hand crank) control at the positioner 1S137B, perform the following steps:</p> <p>MATCH the controller demand and scoop tube position signals as displayed at 1CB137B on the amplifier digital display (see Attachment B), by increasing or decreasing controller SY-B31-1R621B output.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>PICSY group display STDP 83 may be used to help match speeds</p> <p><b><u>BOOTH CUE:</u></b></p> <ul style="list-style-type: none"> <li>• ROLE play as NPO at scoop tube positioner.</li> <li>• Monitor Tach Generator Speed SI-14032B and Servo Controller Demand XI-14032B.</li> <li>• Direct student to change demand until signals are matched.</li> </ul>	<p>Communicates with in plant NPO, and adjusts SY-B31-1R621B controller output with the INCREASE and DECREASE pushbuttons until signals match</p>		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 64.OP.007.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>FAULT STATEMENT</u></b></p> <p><b>RRP "B" WILL EXPERIENCE AN UNCONTROLLED SPEED INCREASE AFTER THE SCOOP TUBE LOCK IS RESET.</b></p>			
*9	<p>DEPRESS SCOOP TUBE B LOCK OR RESET HS-B31-1S03B RESET push button ~ 4 to 5 seconds (to allow position amplifier timer to clear and reset logic to seal in).</p>	<p>Depresses and holds for 4-5 seconds Scoop Tube "B" Lock Reset pushbutton HS-B31-1S03B.</p>		
10	<p>MONITOR GEN 1B SPEED SI-14032B.</p>	<p>Checks: GEN 1B SPEED SI-14032B Determines speed is rapidly increasing</p>		
*11	<p>If speed increases rapidly, TRIP scoop tube on affected generator by depressing SCOOP TUBE LOCK OR RESET HS-B31-1S03B TRIP push button.</p>	<p>Depresses SCOOP TUBE LOCK OR RESET HS-B31-1S03B TRIP push button.</p> <p>Verifies: GEN 1B SPEED SI-14032B stops rising</p>		
12	<p>Notify Shift Supervision.</p>	<p>Informs Shift Supervision that RRP "B" has been locked due to uncontrolled speed increase.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 64.OP.007.151

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

Step	Action	Standard	Eval	Comments
13	At 1C137B REPLACE the cover on the scoop tube position amplifier.  <b><u>EVALUATOR CUE:</u></b> That completes this JPM	Contacts in plant NPO and directs replacing enclosure cover.		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. The plant is in Mode 1 @ 95 % power.
- B. Scoop Tube Lock has occurred on 'B' Recirc MG Set.
- C. The condition which caused the Scoop Tube Lock has been corrected.
- D. Manual Control has NOT been taken at the positioner

### **INITIATING CUE**

Reset the Fluid Drive Scoop Tube Lock.

### **TASK CONDITIONS**

- A. The plant is in Mode 1 @ 95 % power.
- B. Scoop Tube Lock has occurred on 'B' Recirc MG Set.
- C. The condition which caused the Scoop Tube Lock has been corrected.
- D. Manual Control has NOT been taken at the positioner

### **INITIATING CUE**

Reset the Fluid Drive Scoop Tube Lock.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO 70.OP.004.151 0 1/16/04 261000 A3.01 3.2/3.3  
Appl. To JPM Number Rev. No. Date NUREG 1123 Sys. No. K/A

Task Title: Perform a Manual Startup of the SGTS in Accordance With OP-070-001

Completed By: \_\_\_\_\_ Reviews: \_\_\_\_\_  
Russ Halm \_\_\_\_\_  
Writer Date Instructor/Writer Date

Approval: \_\_\_\_\_  
Requesting Supv./C.A. \_\_\_\_\_  
Head Date Nuclear Trng. Supv. Date

Date of Performance: \_\_\_\_\_  
Allowed Time (Min.) 10 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 70.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.

**II. REFERENCES**

OP-070-001, Standby Gas Treatment System (Rev. 19)  
AR-029-001 SGTS A FILTER TRAIN FAILED (A11) (Revision 21)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Unit 1 is operating in Mode 1.
- B. The HPCI System is to be started up for surveillance.
- C. The SGTS is aligned for automatic initiation in accordance with OP-070-001.
- D. All prerequisites are met.

**V. INITIATING CUE**

Your Supervisor directs you to Perform a manual startup of SGTS "A".

**VI. TASK STANDARD**

Identifies the FAILED CLOSED SGTS MAKEUP OA DMP FD07551A2 damper and secures SGTS Fan OV109A.

**VII. TASK SAFETY SIGNIFICANCE**

Provides the ability to perform HPCI operability surveillance.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 70.OP.004.151

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 1 100% IC</li> <li>• Run batch file <b>IGB.SBGTAFAIL</b></li> <li>• When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN</b>.</li> </ul>			
1	Obtain a controlled copy of OP-070-001 Standby Gas Treatment System,	Controlled copy obtained.		
2	Select the correct section to perform.	Selects section 3.2		
3	Review the prerequisites.	Ensures all prerequisites have been met.		
	<p><b><u>EVALUATOR CUE:</u></b> Inform the student all prerequisites have been met.</p>			
4	Review all precautions.	Follows all precautions as applicable.		
*5	At Panel 0C681, DEPRESS SGTS Clg OA Dmp HD07555A OPEN pushbutton.	Depresses SGTS CLG OA DMP HD 07555A OPEN pushbutton.		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 70.OP.004.151

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

Step	Action	Standard	Eval	Comments
6	OBSERVE SGTS Clg OA Dmp HD07555A OPENS to allow suction flow path for start of SGTS Fan A.	Verifies: Red Light is LIT and Amber Light is NOT LIT for SGTS CLG OA DMP HD 07555A		
*7	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: Red Light is LIT and Amber AND White Lights are NOT LIT		
8	When Fan starts, OBSERVE flow increases >3000 cfm on SGTS Air Flow FR07553A.  <b><u>EVALUATOR NOTE:</u></b> SGTS Fans may not obtain 10,100 cfm due to insufficient suction flow path through SGTS Makeup OA Dmp FD07551A2.  <b><u>EVALUATOR NOTE:</u></b> Flowrate for this JPM should be (~4,800 CFM)	Verifies: SGTS AIR FLOW FR-07553A increases to greater than 3000 CFM.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 70.OP.004.151

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

Step	Action	Standard	Eval	Comments
9	CHECK following positioned as indicated: SGTS Fan Inlet Dmp HD07552A FULL OPEN.	Verifies: Red Light is LIT and Amber Light is NOT LIT for SGTS FAN INLET DMP HD 07552A		
10	SGTS A Inlet Dmp HD07553A FULL OPEN.  <b><u>EVALUATOR NOTE:</u></b> When OA DMP FD 07551A2 reaches FULL OPEN it will FAIL CLOSED causing AR-029-001 (A11) SGTS A FILTER TRAIN FAILED alarm to actuate. Fan OV109A will ALSO fail to trip.	Verifies: Red Light is LIT and Amber Light is NOT LIT for SGTS A INLET DMP HD 07553A		
11	SGTS Makeup OA Dmp FD07551A2 MODULATED/OPEN approximately 70 seconds after SGTS Fan OV109A started.	Approximately 70 seconds after SGTS Fan OV109A started. Verifies: SGTS Makeup OA DMP FD 07551A2 BOTH Red Light and Amber Light LIT		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 70.OP.004.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>FAULT STATEMENT:</u></b></p> <p><b>OA DMP FD07551A2 fails CLOSED. Fan OV109A will ALSO fail to trip</b></p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Candidate may STOP SGTS FAN OV109A before AR-029-001 (A11) SGTS A FILTER TRAIN FAILED alarms due to loss of suction flowpath. If the candidate stops the fan at this time, it would not be necessary to perform the remaining steps of the AR. This is acceptable.</p>			
12	Acknowledges AR-029-001 (A11) SGTS A FILTER TRAIN FAILED alarm			
13	Refers to appropriate alarm response procedure.	Selects AR-029-001 (A11) SGTS A FILTER TRAIN FAILED		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 70.OP.004.151

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

Step	Action	Standard	Eval	Comments
*14	If no initiation signal present, CHECK SGTS FAN OV109A tripped.	Checks: SGTS FAN OV109A red light LIT and Amber light NOT LIT Places control switch for SGTS FAN OV109A to STOP Verifies: SGTS FAN OV109A red light NOT LIT and Amber light LIT		
15	CHECK SGTS AIR FLOW & HEPA FILT PRESS DIFF FR07553A. SGTS AIR FLOW should be approximately 10,100 cfm.	Determines not applicable since Fan is tripped		
16	CHECK HIC07555A on Panel OC883A is set at 45.	Contacts NPO to check HIC07555A is set at 45		
<b><u>EVALUATOR CUE:</u></b> Role-play as NPO and acknowledge the request. Inform candidate that HIC07555A is set at 45				
17	CHECK SGTS Fan OV109A supply breaker MCC OB136011, thermal overloads and control power fuse.	Determines not applicable.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 70.OP.004.151

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

Step	Action	Standard	Eval	Comments
18	If fan tripped after starting time delay, CHECK fan integrity.	Determines not applicable.		
19	COMPLY with TS 3.6.4.3 and TR 3.6.1.	Informs supervisor to refer to TS 3.6.4.3 and TR 3.6.1.		
20	If Zone 3 Secondary Containment Isolation signal present, CONFIRM SGTS FAN 0V109A trips when Zone 3 lockout relay XY07553A reset.  <b><u>EVALUATOR CUE:</u></b> This completes the JPM.	Determines not applicable.		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Unit 1 is operating in Mode 1.
- B. The HPCI System is to be started up for surveillance.
- C. The SGTS is aligned for automatic initiation in accordance with OP-070-001.
- D. All prerequisites are met.

### **INITIATING CUE**

Your Supervisor directs you to Perform a manual startup of SGTS "A".

**TASK CONDITIONS**

- A. Unit 1 is operating in Mode 1.
- B. The HPCI System is to be started up for surveillance.
- C. The SGTS is aligned for automatic initiation in accordance with OP-070-001.
- D. All prerequisites are met.

**INITIATING CUE**

Your Supervisor directs you to Perform a manual startup of SGTS "A".

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	24.OP.006.102	1	01/19/04	264000 A4.04	3.7/3.7
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Manually Synchronize Diesel Generator "A" to 4.16 KV Bus 1A from Panel OC653 in Accordance With OP-024-001

Completed By:	Reviews:		
Russ Halm			
Writer	Date	Instructor/Writer	Date

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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Date of Performance:	20	Allowed Time (Min.)	Time Taken (Min.)
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JPM Performed By:

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

Performance Evaluation: ( ) Satisfactory ( ) Unsatisfactory

Evaluator Name:		
	Signature	Typed or Printed

Comments:

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

**II. REFERENCES**

OP-024-001 Diesel Generator (Revision 40)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Diesel Generator "A" was started manually from OC653 in accordance with OP-024-001, Diesel Generator and has been running unloaded for 15 minutes.
- B. No other diesel generator is operating synchronized to the grid.
- C. A NPO is stationed at the diesel.
- D. Air intake manifold temperatures are being controlled in AUTOMATIC.

**V. INITIATING CUE**

Manually synchronize Diesel Generator "A" with 4.16 KV Bus 1A and pick up 3600 to 4000 KW of load IAW OP-024-001, Diesel Generator section 2.3.

**VI. TASK STANDARD**

Diesel Generator "A" synchronized to 4.16 KV Bus 1A and loaded to 3600 to 4000 KW without causing any automatic Diesel generator trips to occur.

**VII. TASK SAFETY SIGNIFICANCE**

Verifies operability of a safety related electrical power source.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
1	<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>• Manually start "A" D/G IAW OP-024-001 section 2.2 MANUAL START OF DIESEL GENERATOR A(B)(C)(D)(E) FROM PANEL 0C653</li> <li>• Start A &amp; B ESW pumps</li> <li>• Fill out a DG start log for the "A" DG.</li> </ul> <p>The following conditions should then exist:</p> <ul style="list-style-type: none"> <li>• DG "A" Watts - 0</li> <li>• DG "A" Amps - 0</li> <li>• DG "A" Freq - ~60 Hz</li> <li>• DG "A" Volts - ~4,200 VAC</li> <li>• Ready to Run Light illuminated</li> <li>• DG "A" Gov Mode Sel HS-00055A - DROOP</li> <li>• DG "A" Volt Reg Mode Sel HS-00056A - AUTO</li> <li>• DG "A" to Bus 1A Bkr 1A20104 - OPEN</li> <li>• DG "A" to Bus 1A Synch Sel HS-00039A - OFF</li> <li>• The PMS CRT is displaying the DG electrical screen</li> </ul> <p>When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN</b>.</p> <p>Obtain a controlled copy of OP-024-001 Diesel Generator</p>	Controlled copy obtained.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
2	Selects the correct section to perform.  <b><u>EVALUATOR NOTE:</u></b> Due to the nature of this JPM, it may be necessary to allow the candidate to check the prerequisites and precautions. This is acceptable.	Selects section 2.3		
3	Review the prerequisites.	Ensures that all prerequisites have been met.		
4	Review the precautions.  <b><u>EVALUATOR NOTE:</u></b> During synchronizing or load changes, increasing voltage adjust will reduce negative (in) KVARs and decreasing voltage adjust will reduce positive (out) KVARs.  <b><u>EVALUATOR NOTE:</u></b> When the sync switch is placed in the ON position the synchroscope pointer will start moving (either direction), the white light on each side of the synchroscope will flash off and on as the pointer rotates.	Follows the precautions as applicable.		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
*5	AFTER diesel generator run unloaded 5 minutes or as required during emergency, Synchronize Diesel Generator A to 4.16KV Bus 1A, as follows:  Place DG A to Bus 1A Sync Sel HS-00039A switch to ON.	Inserts Key into DG A to Bus 1A Sync Sel HS-00039A switch and places in the ON position.		
*6	Adjust DG A Voltage Adjust HS-00053A so red scale 4 KV Diff AC Volts XI-00036 indicates slightly right of 0 and not exceed 35 volts AC. The Green Band on XI-00036 is the acceptable area.  <b><u>EVALUATOR NOTE:</u></b> The FAST direction on the Synchroscope is clockwise.	Places the DG A Voltage Adjust HS-00053A switch to the RAISE or LOWER position as required to achieve Green band value on XI-00036.		
7	Adjust DG A Speed Governor HS-00054A so Synchroscope XI-00037 rotating in FAST (clockwise) direction at ~ 1 (one) revolution per 60 seconds.	Places DG A Speed Governor HS-00054A switch to the RAISE or LOWER position to cause the Synchroscope XI-00037 pointer to rotate slowly (approximately 1 rpm) in the FAST (clockwise) direction.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>When DG A to Bus 1A Bkr 1A20104 breaker is closed in the next step, the following should occur:</p> <ul style="list-style-type: none"> <li>• Both white lights will remain extinguished and the synchroscope pointer will stop at the 12 o'clock position.</li> <li>• The Running Idle light will extinguish and the Running Loaded light illuminates on the Local Panel (OC521A).</li> </ul>			
*8	Close DG A to Bus 1A Bkr 1A20104 when synchroscope at or slightly before "12 o'clock" position.	<p>When the Synchroscope XI-00037 pointer is at or slightly before the 12 o'clock position:</p> <p>Places DG A to Bus 1A Bkr 1A20104 to the closed position</p> <p>Verifies:</p> <p>Red light LIT and Amber light NOT LIT</p>		
*9	Promptly go to RAISE and Slowly increase load to 1000 KW over a 30-45 second period using DG A Speed Governor HS-00054A switch.	<p>Places DG A Speed Governor HS-00054A switch to RAISE over a period of 30-45 seconds until DG A Watts XI-00032A meter indicates 1,000 KW.</p>		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
*10	Promptly Position DG A Voltage Adjust HS-00053A to maintain 0 to 900 KVARs but as close to 0 on positive side as possible on DG A KVARs GVARM on Panel 0C519A <u>and/or</u> PICSY Format Diesel Generator A.	Places DG A Voltage Adjust HS-00053A switch to LOWER/RAISE in order to maintain 0 to 900 KVARs but as close to 0 on positive side as possible on PICSY Format Diesel Generator A		
11	Place DG A to Bus 1A Sync Sel HS-00039A switch to OFF.	Places DG A to Bus 1A Sync Sel HS-00039A switch to OFF.		
12	AT Diesel Engine Control Panel 0C521A, Observe Running Loaded light ILLUMINATED  Ensure intake air manifold temperatures maintained in accordance with section 2.15 of this procedure at all times diesel generator operating.	Contacts NPO at the Diesel and requests the status of the Running Loaded light  AND  Instructs NPO to ensure intake air manifold temperatures maintained in accordance with section 2.15 of this procedure at all times while diesel generator is operating.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
13	<p><b><u>EVALUATOR NOTE:</u></b>                      Role-play the diesel NPO and inform the control room that the Running Loaded light is LIT                      AND                      intake air manifold temperatures are being maintained in accordance with section 2.15 of this procedure.</p> <p><u>IF</u> diesel generator started due to emergency:                      Load as required to support plant conditions.</p> <p><b><u>CAUTION</u></b>                      During each increase, anticipated DG output must not exceed present T-10 (T-20) bus load</p> <p><b><u>CAUTION</u></b>                      If T-10 (T-20) Tap Changer Setpoint of Positive (Out) or Negative (In) 1000 KVARs is reached for <math>\geq</math> 20 seconds, Tap Changer will automatically change tap</p> <p><b><u>EVALUATOR CUE:</u></b>                      Inform the candidate that 5 minutes has elapsed.</p>	<p>Determines Diesel generator was not started due to an emergency based on initial conditions.</p>		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
*14	<p>IF diesel generator started for test or other than emergency condition:</p> <p>AFTER 5 minutes operation, Slowly increase load to 2000 KW using DG A Speed Governor HS-00054A switch.</p> <p align="center">AND</p> <p>Promptly Adjust KVARs to maintain 0 to 900 KVARs but as close to 0 on positive side as possible using HS-00053A.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Inform the candidate that 10 minutes has elapsed.</p>	<p>Places DG A Speed Governor HS-00054A switch to RAISE until DG A Watts XI-00032A meter indicates 2,000 KW.</p> <p align="center">AND</p> <p>Places DG A Voltage Adjust HS-00053A switch to LOWER/RAISE in order to maintain 0 to 900 KVARs but as close to 0 on positive side as possible on PICSY Format Diesel Generator A</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
* 15	<p>AFTER 10 minutes operation at 2000 KW, Slowly increase load to 3000 KW over a 30-45 second period using DG A HS-00054A.</p> <p style="text-align: center;">AND</p> <p>Promptly Adjust KVARs to maintain 0 to 900 KVAR but as close to 0 on positive side as possible using HS-00053A</p> <p><b><u>EVALUATOR CUE:</u></b> Inform the candidate that 10 minutes has elapsed.</p>	<p>Places DG A Speed Governor HS-00054A switch to RAISE over a period of 30-45 seconds until DG A Watts XI-00032A meter indicates 3,000 KW.</p> <p style="text-align: center;">AND</p> <p>Places DG A Voltage Adjust HS-00053A switch to LOWER/RAISE in order to maintain 0 to 900 KVARs but as close to 0 on positive side as possible on PICSY Format Diesel Generator A</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 24.OP.006.102

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

Step	Action	Standard	Eval	Comments
*16	<p>AFTER 10 minutes operation at 3000 KW, (A-D DG only) Slowly increase load to 3600 to 4000 KW over a 30-45 second period using DG A Speed Governor HS-00054A switch.</p> <p style="text-align: center;">AND</p> <p>Promptly Adjust KVARs to maintain 0 to 900 KVARs but as close to 0 on positive side as possible using HS-00053A</p>	<p>Places DG A Speed Governor HS-00054A switch to RAISE over a period of 30-45 seconds until DG A Watts XI-00032A meter indicates 3600 to 4000 KW.</p> <p style="text-align: center;">AND</p> <p>Places DG A Voltage Adjust HS-00053A switch to LOWER/RAISE in order to maintain 0 to 900 KVARs but as close to 0 on positive side as possible on PICSY Format Diesel Generator A</p>		
17	<p>IF diesel generator operated at &lt; 2000 KW, Perform following for 15 minutes for every hour &lt; 2000 KW and immediately before shutdown:</p> <p>Raise load to 3600 to 4000 KW using HS-00054A,</p> <p style="text-align: center;">AND</p> <p>Promptly Adjust KVARs to maintain 0 to 900 KVARs but as close to 0 on positive side as possible using HS-00053A.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>This completes the JPM</p>	<p>Determines that this step is not applicable since the diesel was just started.</p>		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Diesel Generator "A" was started manually from OC653 in accordance with OP-024-001, Diesel Generator and has been running unloaded for 15 minutes.
- B. No other diesel generator is operating synchronized to the grid.
- C. A NPO is stationed at the diesel.
- D. Air intake manifold temperatures are being controlled in AUTOMATIC.

### **INITIATING CUE**

Manually synchronize Diesel Generator "A" with 4.16 KV Bus 1A and pick up 3600 to 4000 KW of load IAW OP-024-001, Diesel Generator section 2.3.

### **TASK CONDITIONS**

- A. Diesel Generator "A" was started manually from OC653 in accordance with OP-024-001, Diesel Generator and has been running unloaded for 15 minutes.
- B. No other diesel generator is operating synchronized to the grid.
- C. A NPO is stationed at the diesel.
- D. Air intake manifold temperatures are being controlled in AUTOMATIC.

### **INITIATING CUE**

Manually synchronize Diesel Generator "A" with 4.16 KV Bus 1A and pick up 3600 to 4000 KW of load IAW OP-024-001, Diesel Generator section 2.3.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	34.EO.005.101	2	01/14/04	295028 EA1.03	3.9/3.9
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Reset Drywell Cooling Isolation and Restore Drywell Cooling IAW ES-134-001 (Control Room Actions)

Completed By: \_\_\_\_\_ Reviews: \_\_\_\_\_

Russ Halm	_____	_____	_____	_____
Writer	Date	Instructor/Writer	Date	

Approval:

Requesting Supv./C.A. Head	_____	_____	_____	_____
	Date	Nuclear Trng. Supv.	Date	

Date of Performance:	_____	10	_____
	Allowed 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 34.EO.005.101**

**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 judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

**II. REFERENCES**

ES-134-001, Restoring Drywell Cooling With A LOCA Signal Present Revision 12

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. An ATWS has occurred coincident with a loss of drywell cooling.
- B. EO-100-113 is being implemented for level/power control.
- C. EO-100-103 is being executed for primary containment control.
- D. All containment isolations and ECCS actions have properly occurred.
- E. ES-134-001 is being implemented and is complete through Step 4.2.
- F. CIG 90 # header has been restored.
- G. MSIVs have been opened IAW ES-184-002, REOPENING MSIVS BYPASSING ISOLATIONS.

**V. INITIATING CUE**

Your supervisor directs you to Reset Drywell Cooling Logic isolations and restore Drywell Cooling in accordance with ES-134-001, section 4.3.

**VI. TASK STANDARD**

Drywell Cooling Logic isolations reset and Drywell cooling restored.

**VII. TASK SAFETY SIGNIFICANCE**

Re-establish containment cooling.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 34.EO.005.101

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <ul style="list-style-type: none"> <li>• This JPM is to run AFTER JPM 84.OP.001.151 has been completed. This will allow for CIG 90# header to be restored.</li> <li>• This JPM must be performed on the simulator.</li> <li>• Set up the simulator IAW the attached setup instructions.</li> <li>• Place the simulator in Freeze.</li> <li>• Fill out and approve for use a blank copy of ES-134-001 up to step 4.3; mark steps 4.3.2 and 4.3.4 as N/A. Provide this to the candidate for use in completing the task.</li> <li>• When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN</b>.</li> </ul>			
1	Obtain a controlled copy of ES-134-001, RESTORING DRYWELL COOLING WITH A LOCA SIGNAL PRESENT	Controlled copy obtained.		
2	Review Sections 1.0 through 3.0.	Review Sections 1.0 through 3.0.		
3	Check for approval in Section 4.1.	Verifies: Shift Manager approval at step 4.1		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 34.EO.005.101

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

Step	Action	Standard	Eval	Comments
4	Verify step 4.2 is marked as complete	Verifies: step 4.2 is marked as complete		
5	Selects the correct section to perform.  <b>EVALUATOR NOTE:</b> Candidate may elect to place the control switches to "CLOSE" for the valves listed in step 6 below. If the candidate places these switches to "CLOSE", then it will be "Critical" that they place the same control switches back to "OPEN" in step 17 of this JPM.	Selects section 4.3		
6	Ensure the following valves are closed prior to resetting isolation logic: A CLRS CLG WTR OB ISO VLVS HV-18781A1 and HV-18781A2. A CLRS CLG WTR IB ISO VLVS HV-18782B1 and HV-18782B2. B CLRS CLG WTR OB ISO VLVS HV-18781B1 and HV-18781B2. B CLRS CLG WTR IB ISO VLVS HV-18782A1 and HV-18782A2.	Verifies: Amber light –LIT and red light NOT LIT for the following valves: A CLRS CLG WTR OB ISO VLVS HV-18781A1 and HV-18781A2. A CLRS CLG WTR IB ISO VLVS HV-18782B1 and HV-18782B2. B CLRS CLG WTR OB ISO VLVS HV-18781B1 and HV-18781B2. B CLRS CLG WTR IB ISO VLVS HV-18782A1 and HV-18782A2.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 34.EO.005.101

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

Step	Action	Standard	Eval	Comments
7	If Containment Instrument Gas has not been restored by ES-184-002, Ensure the following are closed at Panel 1C601 prior to resetting isolation logic:  INSTR GAS TO CONTN ISO SV-12651. INSTR GAS CMP IB SUCT ISO HV-12603. INSTR GAS CMP OB SUCT ISO SV-12605.	Based on initial conditions:  Determines that CIG 90# header has been restored.		
*8	Reset Drywell Cooling (HVAC LOCA Trip 1A and 1B) Logic:  On 1C601 momentarily Depress CHAN A DRWL CLG HS-14141A RESET push button.	Depresses CHAN A DRWL CLG HS-14141A RESET pushbutton.		
9	Observe CHAN A DRWL CLG RESET green ISO light extinguishes.	Verifies:  Green light above the pushbutton NOT LIT.		
*10	On 1C601 momentarily Depress CHAN B DRWL CLG HS-14141B RESET push button.	Depresses CHAN B DRWL CLG HS-14141B RESET pushbutton.		
11	Observe CHAN B DRWL CLG RESET green ISO light extinguishes.	Verifies:  Green light above the pushbutton NOT LIT.		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 34.EO.005.101

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

Step	Action	Standard	Eval	Comments
*12	On 1C681 Heat and Ventilation Control Panel momentarily Depress Chan A RBCW ISO VALVE POS RESET HS-14140A push button.	Depresses CHAN A RBCW ISO VALVE POS RESET HS-14140A.		
13	Observe Chan A RBCW ISO VALVE POS RESET white Iso light extinguishes.	Verifies: White light above the pushbutton NOT LIT.		
*14	On 1C681 Heat and Ventilation Control Panel momentarily Depress Chan B RBCW ISO VALVE POS RESET HS-14140B push button.	Depresses CHAN B RBCW ISO VALVE POS RESET HS-14140B.		
15	Observe Chan B RBCW ISO VALVE POS RESET white Iso light extinguishes.	Verifies: White light above the pushbutton NOT LIT.		
16	<p>If Containment Instrument Gas has not been restored by ES-184-002, Restore CIG in accordance with section 4.4 of this procedure.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Following valves may not open if CIG header pressure is low.</p> <p>Drywell cooling will occur after the following steps if RBCCW is in service and the drywell cooling swap valves have re-aligned.</p>	<p>Based on initial conditions:</p> <p>Determines that CIG 90# header has been restored.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 34.EO.005.101

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

Step	Action	Standard	Eval	Comments
17	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>Back in step 6 of this JPM, the Candidate may have placed the control switches to "CLOSE" for the valves listed in step 17 below. If the candidate placed these switches to "CLOSE", then it is "Critical" that they place the same control switches back to "OPEN" in step 17 below.</p> <p>On 1C681 Heat and Ventilation Control Panel, Ensure following valves open:</p> <p>A CLRS CLG WTR OB ISO VLVS HV-18781A1 and HV-18781A2.</p> <p>A CLRS CLG WTR IB ISO VLVS HV-18782B1 and HV-18782B2.</p> <p>B CLRS CLG WTR OB ISO VLVS HV-18781B1 and HV-18781B2.</p> <p>B CLRS CLG WTR IB ISO VLVS HV-18782A1 and HV-18782A2.</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>That completes this JPM</p>	<p>Verifies:</p> <p>Amber light – NOT LIT and red light LIT for the following valves:</p> <p>A CLRS CLG WTR OB ISO VLVS HV-18781A1 and HV-18781A2.</p> <p>A CLRS CLG WTR IB ISO VLVS HV-18782B1 and HV-18782B2.</p> <p>B CLRS CLG WTR OB ISO VLVS HV-18781B1 and HV-18781B2.</p> <p>B CLRS CLG WTR IB ISO VLVS HV-18782A1 and HV-18782A2.</p>		

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

- A. An ATWS has occurred coincident with a loss of drywell cooling.
- B. EO-100-113 is being implemented for level/power control.
- C. EO-100-103 is being executed for primary containment control.
- D. All containment isolations and ECCS actions have properly occurred.
- E. ES-134-001 is being implemented and is complete through Step 4.2.
- F. CIG 90 # header has been restored.
- G. MSIVs have been opened IAW ES-184-002, REOPENING MSIVS BYPASSING ISOLATIONS.

## **V. INITIATING CUE**

Your supervisor directs you to Reset Drywell Cooling Logic isolations and restore Drywell Cooling in accordance with ES-134-001, section 4.3.

## **TASK CONDITIONS**

- A. An ATWS has occurred coincident with a loss of drywell cooling.
- B. EO-100-113 is being implemented for level/power control.
- C. EO-100-103 is being executed for primary containment control.
- D. All containment isolations and ECCS actions have properly occurred.
- E. ES-134-001 is being implemented and is complete through Step 4.2.
- F. CIG 90 # header has been restored.
- G. MSIVs have been opened IAW ES-184-002, REOPENING MSIVS BYPASSING ISOLATIONS.

## **V. INITIATING CUE**

Your supervisor directs you to Reset Drywell Cooling Logic isolations and restore Drywell Cooling in accordance with ES-134-001, section 4.3.

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

S/RO	84.OP.001.151	1	01/15/04	295037 EA1.11	3.5/3.6
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Bypass MSIV and CIG Interlocks During An ATWS And Restore CIG IAW OP-184-001

Completed By: \_\_\_\_\_ Reviews: \_\_\_\_\_

Russ Halm	Date	Instructor/Writer	Date
Writer			

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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Date of Performance:	10 Allowed Time (Min.)	Time Taken (Min.)
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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 84.OP.001.151**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established 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.

**II. REFERENCES**

OP-184-001, Main Steam System (Revision 19)  
5 Keys for the bypass switches

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. An ATWS has occurred coincident with a loss of drywell cooling.
- B. MSIVs and steam line drains are open.
- C. The main condenser is available.
- D. RPS power is available.
- E. CIG System has isolated due to high drywell pressure; both compressors have tripped.

**V. INITIATING CUE**

Your Supervisor directs you to Bypass MSIV and CIG interlocks by restoring Instrument Gas Compressor operation and CIG System pressure IAW appropriate Hard card.

**VI. TASK STANDARD**

MSIV and CIG interlocks Bypassed and CIG System 90# header pressurized.

**VII. TASK SAFETY SIGNIFICANCE**

Protect the containment by providing "Normal" heat sink capability.

PERFORMANCE CHECKLIST

Appl. To/JPM No.:84.OP.001.151

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>• The FAULTED step in this JPM is preceded by a fault statement in <b>BOLD TYPE WITH ALL CAPITAL LETTERS.</b></li> <li>• Set up the simulator IAW attached setup instructions.</li> <li>• Place the 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 a controlled copy of OP-184-001.	Controlled copy obtained.		
2	Selects the correct section to perform.	Selects Attachment A of OP-184-001 (Hard Card)		
3	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>When first switch on 1C645 is placed in BYPASS, Annunciator AR-147-D1 will alarm.</p> <p>Bypass MSIV Low Water Level 1 Isolation at 1C645 by Placing the following to BYPASS:</p>			

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 84.OP.001.151

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

Step	Action	Standard	Eval	Comments
*4	HS-B21-S38A Rx Wtr Lvl 1 MSIV Bypass Logic A.	Inserts key into Bypass switch HS-B21-S38A Rx Wtr Lvl 1 MSIV Bypass Logic A and Places to BYPASS position.  Verifies: Green light LIT White light NOT LIT		
*5	HS-B21-S38C Rx Wtr Lvl 1 MSIV Bypass Logic C.	Inserts key into Bypass switch HS-B21-S38C Rx Wtr Lvl 1 MSIV Bypass Logic C and Places to BYPASS position.  Verifies: Green light LIT White light NOT LIT		
<p><b><u>EVALUATOR NOTE:</u></b>                      When first switch on 1C644 is placed in BYPASS,                      Annunciator AR-148-D1 will alarm.</p>				
6	Bypass CIG Low Water Level 1 and High Drywell Pressure Isolation by Placing the following to BYPASS:			

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.:84.OP.001.151

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

Step	Action	Standard	Eval	Comments
*7	At 1C645, HS-12694 Low Lvl 1/Hi Drywell Press CIG Bypass (HV-12603)	Inserts key into Bypass switch HS-12694 Low Lvl 1/Hi Drywell Press CIG Bypass and Places to BYPASS position.  Verifies: Green light LIT White light NOT LIT		
*8	At 1C645, HS-12695 Low Lvl 1/Hi Drywell Press CIG Bypass (SV-12651)	Inserts key into Bypass switch HS-12695 Low Lvl 1/Hi Drywell Press CIG Bypass and Places to BYPASS position.  Verifies: Green light LIT White light NOT LIT		
*9	At 1C644, HS-12696 Low Lvl 1/Hi Drywell Press CIG Bypass (SV-12605)	Inserts key into Bypass switch HS-12696 Low Lvl 1/Hi Drywell Press CIG Bypass and Places to BYPASS position.  Verifies: Green light LIT White light NOT LIT		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.:84.OP.001.151

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

Step	Action	Standard	Eval	Comments
10	IF 1.72# High Drywell Pressure isolation has occurred, Restore CIG as follows:	Determines that high drywell pressure does exist either from the initiating cue  <b>OR</b> control room indications.		
*11	Open Instr Gas Cmp Suct Iso HV-12603.	Depresses OPEN pushbutton for Instr Gas Cmp Suct Iso HV-12603 and verifies:  Red light LIT Amber light NOT LIT		
*12	Open Instr Gas To Contn Iso SV-12651.	Depresses OPEN pushbutton for Instr Gas To Contn Iso SV-12651 and verifies:  Red light LIT Amber light NOT LIT		
*13	Open Instr Gas Cmp OB Suct ISO SV-12605.	Depresses OPEN pushbutton for Instr Gas Cmp OB Suct ISO SV-12605 and verifies:  Red light LIT Amber light NOT LIT		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 84.OP.001.151

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

Step	Action	Standard	Eval	Comments
14	<p>Reset Instrument Gas Compressor 1K205A and 1K205B at Containment Instrument Gas Control Panel 1C239</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play the NPO and acknowledge the request.</p> <p><b><u>FAULT STATEMENT:</u></b> As NPO, REPORT "THE CIG COMPRESSORS WILL <u>NOT</u> RESET."</p> <p><b><u>EVALUATOR CUE:</u></b> If necessary Role-play the Unit Supervisor and direct the candidate to restore CIG system pressure with any available installed plant system.</p>	<p>Contacts NPO and directs CIG compressors be placed into service IAW OP-184-001 attachment A step 4.a through 4.f</p>		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 84.OP.001.151

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

Step	Action	Standard	Eval	Comments
*15	<p><u>IF</u> Instrument Air available, Cross-Tie Instrument Air to CIG 90# Header as follows.</p> <p>Slowly Open I-A to CIG Cross-Tie 126172 And 126167</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play the NPO and acknowledge the request.</p> <p><b><u>BOOTH CUE</u></b> Insert <b>dfs 2 MRF PC125001 OPEN</b> (opens IA 126167/126172)</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO and contact PCO to inform I-A to CIG Cross-Tie 126172 And 126167 are OPEN</p>	<p>Verifies:</p> <p>IA 1K107A and IA 1K107B</p> <p>White lights LIT and Amber lights NOT LIT</p> <p>IA Pressure PI-12511A ~ 100 psig</p> <p>Contacts NPO and requests:</p> <p>Slowly Open I-A to CIG Cross-Tie 126172 And 126167</p> <p>Acknowledges the report</p>		

\*Critical Step

#Critical Sequence



## **TASK CONDITIONS**

- A. An ATWS has occurred coincident with a loss of drywell cooling.
- B. MSIVs and steam line drains are open.
- C. The main condenser is available.
- D. RPS power is available.
- E. CIG System has isolated due to high drywell pressure; both compressors have tripped.

## **INITIATING CUE**

Your Supervisor directs you to Bypass MSIV and CIG interlocks by restoring Instrument Gas Compressor operation and CIG System pressure IAW appropriate Hard card.

## **TASK CONDITIONS**

- A. An ATWS has occurred coincident with a loss of drywell cooling.
- B. MSIVs and steam line drains are open.
- C. The main condenser is available.
- D. RPS power is available.
- E. CIG System has isolated due to high drywell pressure; both compressors have tripped.

## **INITIATING CUE**

Your Supervisor directs you to Bypass MSIV and CIG interlocks by restoring Instrument Gas Compressor operation and CIG System pressure IAW appropriate Hard card.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	45.OP.013.151	4	01/11/04	259001 A2.07	3.7/3.8
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Perform Switching Feedwater Level Control

Completed By:	Reviews:
<u>Russ Halm</u>	_____

Writer	Date	Instructor/Writer	Date
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Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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	10	
Date of Performance:	Allowed 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.013.151**

**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.

**II. REFERENCES**

- A. OP-145-001, RFP and RFP Lube Oil System (Rev. 35)

**III. REACTIVITY MANIPULATIONS**

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

None

**IV. TASK CONDITIONS**

- A. Unit 1 is in Mode 1 100% power.
- B. Feedwater Level Control is in Automatic, Three-Element Control with the level input in SELECT on Narrow Range LEVEL 'A'.
- C. I&C has requested Operations select the LEVEL 'B' input for Feedwater Control to perform testing.

**V. INITIATING CUE**

Transfer Automatic Feedwater Level Control Input to Level 'B'.

**VI. TASK STANDARD**

FW LEVEL Control returned to "A" channel with NO limiter 1 runback on low RX water level (+13 inches) and NO turbine trip on high RX water level (+54 inches) occurs.

**VII. TASK SAFETY SIGNIFICANCE**

Incorrect performance of the task could result in excessive moisture to the main turbine due to carryover, or loss of available NPSH to the recirculation pumps due to carryunder.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 45.OP.013.151

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 a 100% IC</li> <li>• Place feedwater level control in SELECT Narrow range Level "A"</li> <li>• Insert <b>BAT FWB.FWLC_BFL</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>• When candidate is ready to begin JPM, place the simulator in RUN.</li> </ul>			
1	Candidate locates procedure and refers to appropriate section.	Obtains procedure OP-145-001, RFP and RFP Lube Oil System section 2.10.		
2	Reviews prerequisites and precautions.	Reviews prerequisites and precautions and  Checks: RX water level A & B within 2 inches of each other on LI-C32-1R606A & B.		

\*Critical Step

#Critical Sequence



PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 45.OP.013.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>FAULT STATEMENT</u></b>  <b>REACTOR WATER LEVEL INDICATION WILL DECREASE AT A RATE OF ≈3 to 5"/MIN AFTER THE STUDENT SELECTS THE "B" FEEDWATER LEVEL.</b></p>			
4	Transfer feedwater level control from A to B level input as follows with the Averaged or Selected HS14268 in SEL			
5	Observe feed flow/steam flow delta	Check for deviation indication at FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 controller.		
	<p><b><u>EVALUATOR NOTE:</u></b>  Candidate should recognize Reactor Water Level is decreasing at a fast rate.</p>			
*6	Depress B push button for SELECT LVL A OR B HS-C32-1S01	Depress 'B' pushbutton for SELECT LVL A OR B HS-C32-1S01.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 45.OP.013.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b> Candidate may recognize Reactor Water Level is decreasing at a PRIOR to attempting to null the FW LEVEL CTL/DEMAND SIGNAL.</p>			
7	Null FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 controller by adjusting tape setpoint.	Attempts to NULL the deviation by adjusting the tape setpoint on FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 controller.		
		AND		
*8	IF deviation cannot be nulled, Transfer back to A level input as follows:  Depress A push button for SELECT LVL A OR B HS-C32-1S01.	Determines FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 controller cannot be NULLED.  Depress 'A' pushbutton for SELECT LVL A OR B HS-C32-1S01.		
9	Null FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 controller by adjusting tape setpoint.	Null the FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 by adjusting the tape setpoint.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 45.OP.013.151

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

Step	Action	Standard	Eval	Comments
10	IF necessary, Slowly Return FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 tapeset to 34"	If necessary slowly return FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 tapeset to 34".		
11	<p>Informs supervisor of situation</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role play the Unit Supervisor and acknowledge the notification.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>This completes the JPM.</p>	<p>Notifies supervisor that B channel was failing low.</p>		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Unit 1 is in Mode 1 100% power.
- B. Feedwater Level Control is in Automatic, Three-Element Control with the level input in SELECT on Narrow Range LEVEL 'A'.
- C. I&C has requested Operations select the LEVEL 'B' input for Feedwater Control to perform testing.

### **INITIATING CUE**

Transfer Automatic Feedwater Level Control Input to Level 'B'.

### **TASK CONDITIONS**

- A. Unit 1 is in Mode 1 100% power.
- B. Feedwater Level Control is in Automatic, Three-Element Control with the level input in SELECT on Narrow Range LEVEL 'A'.
- C. I&C has requested Operations select the LEVEL 'B' input for Feedwater Control to perform testing.

### **INITIATING CUE**

Transfer Automatic Feedwater Level Control Input to Level 'B'.



**REQUIRED TASK INFORMATION**  
**JOB PERFORMANCE MEASURE**  
**S/RO 14.OP.006.151**

**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.

**II. REFERENCES**

OP-114-001 Reactor Building Closed Cooling Water System (RBCCW) (Revision 16)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Both Units are in Mode 1 @ 100% power.
- B. "A" RBCCW pump is in service, "B" RBCCW pump is in standby.
- C. Maintenance wants to obtain some vibration data on the "B" RBCCW pump and motor.
- D. An NPO is stationed at the RBCCW pumps to support this evolution.

**V. INITIATING CUE**

Your supervisor directs you to place the "B" RBCCW pump in service and shutdown the "A" RBCCW pump IAW the appropriate procedure.

**VI. TASK STANDARD**

"A" RBCCW pump is again supplying cooling to RBCCW loads, "B" RBCCW pump is shutdown with suction and discharge path isolated (Casing drain line leak isolated).

**VII. TASK SAFETY SIGNIFICANCE**

Failure to complete the task may result in serious permanent damage to components served by the RBCCW system.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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>• Insert <b>IMF RW11401 1.0</b> to reduce RBCCW head tank level to 18.5 inches. Monitor on RW1 screen.</li> <li>• Freeze simulator</li> <li>• Remove leak by inserting <b>DMF RW11401</b></li> <li>• Snap an IC</li> <li>• Assign <b>pfs 1 MRF RW114001 0</b></li> <li>• Assign <b>pfs 2 MRF RW114001 100</b></li> <li>• Assign <b>pfs 3 IMF RW114001 0.02</b></li> <li>• Assign <b>pfs 4 MRF RW114002 0</b></li> <li>• Assign <b>pfs 5 DMF RW114001</b></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> <li>• When student is ready to begin <b>JPM</b>, place the simulator in <b>RUN.</b></li> </ul>			
1	Select the correct section to perform.	Selects section 2.2		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
2	Review the prerequisites.  <u><b>EVALUATOR CUE:</b></u> Inform the student all prerequisites have been met.	Ensures all prerequisites have been met.		
3	At Panel 1C668, Start standby RBCCW PUMP 1P210B by Depressing START push button.	Depresses RBCCW PP 1P210B START pushbutton  Verifies: Red light LIT; amber light NOT LIT		
4	Observe RBCCW Pump B discharge pressure between 90-110 psig on local pressure gage PI-11306B.  <u><b>EVALUATOR CUE:</b></u> Role-play NPO at the pump and acknowledge the request AND report RBCCW Pump B discharge pressure on local pressure gage PI-11306B is 96 psig.	Contacts NPO at the pump and request a check of RBCCW Pump B discharge pressure between 90-110 psig on local pressure gage PI-11306B.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
5	<p>Slowly Close running RBCCW Pump A Dsch 113062.</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO at the pump and acknowledge the request</p> <p><b><u>BOOTH CUE:</u></b> Insert <b>pfs 1 MRF RW114001 0</b> to close RBCCW Pump A Dsch valve 113062</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO at the pump AND report RBCCW Pump A Dsch valve 113062 has been slowly closed.</p>	<p>Contact NPO at the pump and request Slowly Close running RBCCW Pump A Dsch valve 113062</p>		
6	<p>Stop running RBCCW PUMP 1P210A by Depressing STOP push button.</p>	<p>Depresses RBCCW PP 1P210A STOP pushbutton</p> <p>Verifies: amber light LIT; Red light NOT LIT</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
7	<p>Check RBCCW Pump B discharge pressure between 80-95 psig on local gauge PI-11306B.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play NPO at the pump and acknowledge the request AND report RBCCW Pump B discharge pressure between 80-95 psig on local gauge PI-11306B is 86 psig.</p>	<p>Contacts NPO at the pump and requests:</p> <p>Check RBCCW Pump B discharge pressure between 80-95 psig on local gauge PI-11306B.</p>		
8	<p>Check RBCCW HX discharge pressure on PI-11308, Panel 1C668 stabilizes between 72-82 psig.</p> <p><b><u>FAULT STATEMENT</u></b></p> <p><b>WHEN THE RBCCW PUMP A DSCH VALVE 113062 IS OPENED IN THE NEXT STEP, A RBCCW LEAK WILL OCCUR THAT WILL CAUSE AR-123-E06 RBCCW HEAD TANK HI-LO LEVEL TO ALARM.</b></p>	<p>Verifies RBCCW HX DISCH PRESS PI-11308 between 72-82 psig.</p>		
*9	<p>Open RBCCW Pump A Dsch 113062.</p>	<p>Contact NPO at the pump and request reopening of RBCCW Pump A Dsch valve 113062</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR CUE:</u></b> Role-play NPO at the pump and acknowledge the request</p> <p><b><u>BOOTH CUE:</u></b> Insert <b> pfs 2 MRF RW114001 100</b> to open RBCCW Pump A Dsch valve 113062</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO at the pump AND report RBCCW Pump A Dsch valve 113062 has been opened.</p> <p><b><u>BOOTH CUE:</u></b> Insert <b> pfs 3 IMF RW114001 0.02</b> to INITIATE the RBCCW leak</p> <p><b><u>EVALUATOR CUE:</u></b> <b>AFTER REPORTING THE CLOSING OF report RBCCW Pump A Dsch valve 113062</b> Role-play the NPO at the RBCCW pumps and report a LARGE leak on the "B" RBCCW pump casing drain line.</p>			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
10	<p>Acknowledge the alarm and refer to appropriate AR procedure</p> <p><b><u>EVALUATOR NOTE:</u></b></p> <p>Candidate may dispatch an NPO to the RBCCW head tank to determine level. If candidate does request local level on RBCCW head tank, report the level as ~18 inches. (Normal level is ~40 inches)</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Candidate may relay this information to the Unit Supervisor and request direction. If the candidate requests direction, <b>ask the candidate for their recommendation.</b></p> <p>Candidate recommendation should be to:</p> <ul style="list-style-type: none"> <li>• Restart "A" RBCCW pump</li> <li>• Shutdown "B" RBCCW pump</li> <li>• Isolate "B" RBCCW pump suction and discharge valves</li> </ul>	Refers to AR-123-E06 RBCCW HEAD TANK HI-LO LEVEL		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>The remaining steps of this JPM are written to support this recommendation. If additional recommendations (for example: initiating makeup to the head tank) are made they will need to be evaluated for appropriateness.</p>			
11	Select the correct section to perform.	Selects section 2.2		
12	Review the prerequisites.	Ensures all prerequisites have been met.		
*13	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Inform the student all prerequisites have been met.</p> <p>At Panel 1C668, Start standby RBCCW PUMP 1P210A by Depressing START push button.</p>	<p>Depresses RBCCW PP 1P210A START pushbutton</p> <p>Verifies: Red light LIT; amber light NOT LIT</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
14	<p>Observe RBCCW Pump A discharge pressure between 90-110 psig on local pressure gage PI-11306A.</p> <p><b><u>EVALUATOR CUE:</u></b>                      Role-play NPO at the pump and acknowledge the request AND report RBCCW Pump A discharge pressure on local pressure gage PI-11306A is 96 psig.</p>	<p>Contacts NPO at the pump and request a check of RBCCW Pump A discharge pressure between 90-110 psig on local pressure gage PI-11306A.</p>		
*15	<p>Slowly Close running RBCCW Pump B Dsch 113068.</p> <p><b><u>EVALUATOR CUE:</u></b>                      Role-play NPO at the pump and acknowledge the request</p> <p><b><u>BOOTH CUE:</u></b>                      Insert <b>pfs 4 MRF RW114002 0</b> to close RBCCW Pump B Dsch valve 113068</p>	<p>Contact NPO at the pump and request Slowly Close running RBCCW Pump B Dsch valve 113068</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR CUE:</u></b>                      Role-play NPO at the pump AND report RBCCW Pump B Dsch valve 113068 has been slowly closed.</p>			
*16	Stop running RBCCW PUMP 1P210B by Depressing STOP push button.	Depresses RBCCW PP 1P210B STOP pushbutton  Verifies: amber light LIT; Red light NOT LIT		
17	Check RBCCW Pump A discharge pressure between 80-95 psig on local gauge PI-11306A.	Contacts NPO at the pump and requests:  Check RBCCW Pump A discharge pressure between 80-95 psig on local gauge PI-11306A.		
	<p><b><u>EVALUATOR CUE:</u></b>                      Role-play NPO at the pump and acknowledge the request AND report RBCCW Pump A discharge pressure between 80-95 psig on local gauge PI-11306A is 86 psig.</p>			
18	Check RBCCW HX discharge pressure on PI-11308, Panel 1C668 stabilizes between 72-82 psig.	Verifies RBCCW HX DISCH PRESS PI-11308 between 72-82 psig.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.OP.006.151

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

Step	Action	Standard	Eval	Comments
*19	<p>Close "B" RBCCW pump suction valve 113063</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO at the pump and acknowledge the request</p> <p><b><u>BOOTH CUE:</u></b> When the candidate requests closing of "B" RBCCW pump suction valve 113063: Insert <b>pfs 5 DMF RW114001</b> to remove the RBCCW leak.</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO at the pump and report "B" RBCCW pump suction valve 113063 is closed.</p> <p><b><u>EVALUATOR CUE:</u></b> If necessary Role-play NPO at the pump and inform Control room that the leak has stopped.</p> <p><b><u>EVALUATOR CUE:</u></b> That completes this JPM</p>	<p>Contact NPO at the pumps and request closing of "B" RBCCW pump suction valve 113063</p>		

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

- A. Both Units are in Mode 1 @ 100% power.
- B. "A" RBCCW pump is in service, "B" RBCCW pump is in standby.
- C. Maintenance wants to obtain some vibration data on the "B" RBCCW pump and motor.
- D. An NPO is stationed at the RBCCW pumps to support this evolution.

## **INITIATING CUE**

Your supervisor directs you to place the "B" RBCCW pump in service and shutdown the "A" RBCCW pump IAW the appropriate procedure.

## **TASK CONDITIONS**

- A. Both Units are in Mode 1 @ 100% power.
- B. "A" RBCCW pump is in service, "B" RBCCW pump is in standby.
- C. Maintenance wants to obtain some vibration data on the "B" RBCCW pump and motor.
- D. An NPO is stationed at the RBCCW pumps to support this evolution.

## **INITIATING CUE**

Your supervisor directs you to place the "B" RBCCW pump in service and shutdown the "A" RBCCW pump IAW the appropriate procedure.



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

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established 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.

**II. REFERENCES**

OP-152-001, HPCI System (Revision 30)  
AR-114-F04 HPCI LEAK DETECT LOGIC A HI TEMP (Revision 23)  
AR-114-F05 HPCI LEAK DETECT LOGIC B HI TEMP (Revision 23)

**III. REACTIVITY MANIPULATIONS**

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

44 HPCI Recovery from Isolation

**IV. TASK CONDITIONS**

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

**V. INITIATING CUE**

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

**VI. TASK STANDARD**

HPCI is started and begins injecting into the vessel. The steam leak is isolated.

**VII. TASK SAFETY SIGNIFICANCE**

Secondary containment steam leak is isolated.

PERFORMANCE CHECKLIST

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

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>• The <b>FAULTED</b> step in this JPM is preceded by a fault statement in <b>BOLD TYPE WITH ALL CAPITAL LETTERS</b>.</li> <li>• Setup the simulator IAW the attached setup instructions.</li> <li>• Place the Simulator in FREEZE.</li> <li>• When the student is ready to begin, place the Simulator in RUN.</li> </ul>				
1	Obtain a controlled copy of OP-152-001 HPCI System	Controlled copy obtained.		
2	Selects the correct section to perform.	Selects section 2.11		
3	Review the prerequisites.	Ensures that the prerequisites have been met.		
<p><b><u>EVALUATOR CUE:</u></b></p> <p>If necessary, inform the student that the prerequisites have been meet.</p>				
4	Review the precautions.	Follows applicable precautions.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

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

Step	Action	Standard	Eval	Comments
5	<p>Select appropriate step to begin.</p> <p><b><u>EVALUATOR NOTE:</u></b>                      Preferable to prevent auxiliary oil pump from running while re-pressurizing steam supply line. Opening auxiliary oil pump breaker will shutdown auxiliary oil pump which will result in stop and control valve closure. Desirable to re-pressurize as soon as possible to avoid large condensation of steam with inability to drain due to HPCI TURBINE STEAM SUPPLY HV-155-F001 open.</p>	<p>Selects Step 2.11.7</p>		
6	<p>Observe following status:</p> <p>HPCI INJECTION HV-155-F006 CLOSED.</p> <p>HPCI MIN FLOW TO SUPP POOL HV-155-F012 CLOSED.</p> <p>HPCI L-O CLG WTR HV-156-F059 CLOSED.</p> <p>HPCI STM SUPPLY IB ISO HV-155-F002 CLOSED.</p> <p>HPCI STM SUPPLY OB ISO HV-155-F003 CLOSED.</p>	<p>Verifies RED light NOT LIT and AMBER light LIT for the following valves:</p> <p>HPCI INJECTION HV-155-F006</p> <p>HPCI MIN FLOW TO SUPP POOL HV-155-F012</p> <p>HPCI L-O CLG WTR HV-156-F059</p> <p>HPCI STM SUPPLY IB ISO HV-155-F002</p> <p>HPCI STM SUPPLY OB ISO HV-155-F003</p>		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

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

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

Step	Action	Standard	Eval	Comments
7	HPCI AUXILIARY OIL PUMP 1P213 IN OPERATION. HPCI TURBINE STEAM SUPPLY HV-155-F001 OPEN.	Verifies RED light LIT and AMBER light NOT LIT for the following: HPCI AUXILIARY OIL PUMP 1P213 HPCI TURBINE STEAM SUPPLY HV-155-F001		
*8	Open HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031.  <u><b>EVALUATOR CUE:</b></u> Role-play NPO and acknowledge the request.  <u><b>BOOTH OPERATOR CUE:</b></u> Insert <b>pfs 3 MRF DC188128 OPEN</b> to open the Aux Oil Pump breaker.  <u><b>EVALUATOR CUE:</b></u> Role-play NPO and report back to candidate that HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031 is OPEN.	Directs NPO to open Breaker 1D274031.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

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

Step	Action	Standard	Eval	Comments
9	Ensure following indicate CLOSED: HPCI TURB STOP VLV FV-15612. HPCI TURB CTL VLV FV-15611.	Verifies RED light NOT LIT and AMBER light LIT for the following valves:  HPCI TURB STOP VLV FV-15612. HPCI TURB CTL VLV FV-15611.		
10	Reset HPCI system isolation as follows: Place control switch for HPCI STM SUPPLY IB ISO HV-155-F002 in CLOSE position.	Verifies :  HPCI STM SUPPLY IB ISO HV-155-F002 in CLOSE position.  RED light NOT LIT and AMBER light LIT		
11	Place control switch for HPCI STM SUPPLY OB ISO HV-155-F003 in CLOSE position.	Verifies:  HPCI STM SUPPLY OB ISO HV-155-F003 in CLOSE position.  RED light NOT LIT and AMBER light LIT		
12	Ensure control switch for HPCI WARM-UP LINE ISO HV-155-F100 in CLOSE position.	Verifies control switch HPCI WARM-UP LINE ISO HV-155-F100 in CLOSE position.		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

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

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b>                      If the GREEN light above HPCI AUTO ISO SIG A RESET HS-E41-1S30 is LIT, then steps 13 and 15 are "Critical" steps.</p>			
*13	Place HPCI AUTO ISO SIG A RESET HS-E41-1S30 keyswitch to RESET.	Obtains key and inserts into HPCI AUTO ISO SIG A RESET HS-E41-1S30 keyswitch  Places keyswitch to RESET		
14	Ensure HPCI ISO DIV 1 ISO status light EXTINGUISHES.	Verifies:  HPCI ISO DIV 1 ISO status light NOT LIT		
*15	Return HPCI AUTO ISO SIG A RESET HS-E41-1S30 keyswitch to NORM.	Places HPCI AUTO ISO SIG A RESET HS-E41-1S30 keyswitch to NORM		
*16	Place HPCI AUTO ISO SIG B RESET HS-E41-1S18 keyswitch to RESET.	Obtains key and inserts into HPCI AUTO ISO SIG B RESET HS-E41-1S18 keyswitch  Places keyswitch to RESET		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

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

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

Step	Action	Standard	Eval	Comments
17	Ensure HPCI ISO DIV 2 ISO status light EXTINGUISHES.	Verifies: HPCI ISO DIV 2 ISO status light NOT LIT		
*18	Return HPCI AUTO ISO SIG B RESET HS-E41-1S18 keyswitch to NORM.	Places HPCI AUTO ISO SIG B RESET HS-E41-1S18 keyswitch to NORM		
19	Pressurize steam supply line as follows: Open HPCI STM SUPPLY OB ISO HV-155-F003. Open HPCI WARM-UP LINE ISO HV-155-F100.	Places control switch to OPEN for the following valves: HPCI STM SUPPLY OB ISO HV-155-F003. HPCI WARM-UP LINE ISO HV-155-F100. Verifies: Verifies RED light LIT and AMBER light NOT LIT		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

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

Step	Action	Standard	Eval	Comments
*20	<p>WHEN: Steam line pressurized to ~ reactor pressure, Open HPCI STM SUPPLY IB ISO HV-155-F002.</p>	<p>Checks steamline pressure is rising on (PI-E41-1R602) and compares this to any Reactor pressure indicator.</p> <p>WHEN steamline pressure is ~ reactor pressure:</p> <p>Places control switch to OPEN for HPCI STM SUPPLY IB ISO HV-155-F002.</p> <p>Verifies RED light LIT and AMBER light NOT LIT</p>		
21	<p>Close HPCI WARM-UP LINE ISO HV-155-F100.</p> <p><b><u>EVALUATOR NOTE:</u></b> High drywell pressure coincident with low reactor pressure initiates closure of valves in following step. When high drywell pressure condition OR low reactor pressure condition clears, valves can be opened.</p>	<p>Places control switch to CLOSE for HPCI WARM-UP LINE ISO HV-155-F100</p> <p>Verifies AMBER light LIT and RED light NOT LIT</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

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

Step	Action	Standard	Eval	Comments
22	Ensure following valves OPEN: HPCI TURB EXH OB VAC BKR HV-155-F075. HPCI TURB EXH IB VAC BKR HV-155-F079.	Verifies RED light LIT and AMBER light NOT LIT for the following valves: HPCI TURB EXH OB VAC BKR HV-155-F075. HPCI TURB EXH IB VAC BKR HV-155-F079.		
23	Ensure following alarms CLEAR: AR-114-C01 HPCI TURB EXH VAC BKR HV-155-F075 NOT FULLY OPEN. AR-114-D01 HPCI TURB EXH VAC BKR HV-155-F079 NOT FULLY OPEN.	Verify the following alarms CLEAR: AR-114-C01 HPCI TURB EXH VAC BKR HV-155-F075 NOT FULLY OPEN. AR-114-D01 HPCI TURB EXH VAC BKR HV-155-F079 NOT FULLY OPEN.		
24	Place HPCI System in service feeding reactor vessel as follows: Place HPCI TURBINE FLOW CONTROL FC-E41-1R600 in MANUAL set for minimum.  <u><b>FAULT STATEMENT</b></u>  <b>WHEN THE STOP VLV FV-15612 AUTOMATICALLY OPENS IN THE NEXT STEP, A STEAM LEAK DEVELOPS IN HPCI EQUIPMENT ROOM.</b>	Places HPCI TURBINE FLOW CONTROL FC-E41-1R600 in MANUAL set for minimum.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

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

Step	Action	Standard	Eval	Comments
*25	<p>Close HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031.</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO and acknowledge the request.</p> <p><b><u>BOOTH OPERATOR CUE:</u></b> Insert pfs 4 MRF DC188128 CLOSE to CLOSE the Aux Oil Pump breaker.</p> <p><b><u>EVALUATOR CUE:</u></b> Role-play NPO and report back to candidate that HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031 is CLOSED.</p>	<p>Directs NPO to CLOSE Breaker 1D274031.</p>		
26	<p>Observe:</p> <p>HPCI AUXILIARY OIL PUMP 1P213 STARTS.</p> <p>HPCI INJECTION HV-155-F006 OPENS.</p>	<p>Verifies RED light LIT and AMBER light NOT LIT for the following:</p> <p>HPCI AUXILIARY OIL PUMP 1P213</p> <p>HPCI INJECTION HV-155-F006</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

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

Step	Action	Standard	Eval	Comments
27	<p><b><u>EVALUATOR NOTE:</u></b> The steam leak should cause the below annunciators to alarm, the candidate should respond to the alarms and isolate the leak by CLOSING HV-155-F002 and F003 HPCI Steam Isolation valves.</p> <p><b><u>EVALUATOR NOTE:</u></b> Candidate may CLOSE HV-155-F002 and F003 HPCI Steam Isolation valves based on degrading plant conditions PRIOR to performing alarm response procedure.</p> <p>Respond to annunciator on AR-114 AR-114-F04 HPCI LEAK DETECT LOGIC A HI TEMP AND AR-114-F05 HPCI LEAK DETECT LOGIC B HI TEMP</p>	<p>Acknowledges: AR-114-F04 HPCI LEAK DETECT LOGIC A HI TEMP AND AR-114-F05 HPCI LEAK DETECT LOGIC B HI TEMP</p>		

\*Critical Step

#Critical Sequence



PERFORMANCE CHECKLIST

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

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR CUE:</u></b> That completes this JPM</p>			

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

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

## **INITIATING CUE**

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

## **TASK CONDITIONS**

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

## **INITIATING CUE**

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

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

<u>S/RO</u>	<u>57.OP.001.102</u>	<u>0</u>	<u>07/22/04</u>	<u>262002 A4.01</u>	<u>2.8/3.1</u>
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Energize Computer Distribution Panels 1Y619 and 1Y620 with Computer UPS 1D656 and the "Alternate" power supply IAW with OP-157-001 Computer and Vital UPS.

Completed By:	Reviews:
<u>Russ Halm</u>	<u>07/22/04</u>
Writer	Date
	Instructor/Writer
	Date

Approval:

<u>Requesting Supv./C.A. Head</u>	<u>Date</u>	<u>Nuclear Trng. Supv.</u>	<u>Date</u>
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<u>Date of Performance:</u>	<u>25</u>	<u>Allowed Time (Min.)</u>	<u>Time Taken (Min.)</u>
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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 57.OP.001.102**

**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.

**II. REFERENCES**

OP-157-001 COMPUTER AND VITAL UPS Revision 13

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Unit 1 is in a Refueling Outage.
- B. Computer Distribution Panels 1Y619 and 1Y620 have been completely de-energized to perform maintenance on the panels.
- C. Computer UPS 1D656 is de-energized.
- D. Maintenance has been completed and all clearance orders have been removed.

**V. INITIATING CUE**

Your supervisor directs you to re-energize Computer Distribution Panels 1Y619 and 1Y620 with Computer UPS 1D656 IAW with OP-157-001 Computer and Vital UPS.

**VI. TASK STANDARD**

Computer Distribution Panels 1Y619 and 1Y620 energized, Computer UPS 1D656 energized and "Alternate" power supply breaker CB-7 closed.

**VII. TASK SAFETY SIGNIFICANCE**

Provides reliable power supply to Vital instrumentation bus.

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 57.OP.001.102

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 plant.</li> <li>• Obtain permission from Shift Manager to perform this JPM.</li> <li>• Ensure the following material is available to support performance of this JPM:</li> <li>• A copy of the latest revision of OP-157-001, Computer and Vital UPS.</li> </ul>			
1	Obtain a controlled copy of OP-157-001 COMPUTER AND VITAL UPS	Controlled copy of OP-157-001 COMPUTER AND VITAL UPS obtained.		
2	Selects the correct section to perform.	Selects section 3.1		

\*Critical Step

#Critical Sequence



PERFORMANCE CHECKLIST

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
*5	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>Meter select switches SW3, SW2, SW4, and SW5. Must be in a position OTHER THAN OFF in order to get indication on A1 (SW3), V1 (SW2), V3 (SW4) and A3 (SW5). If the candidate requires a reading from any of these meters, provide a response of 0 if the appropriate switch is <u>NOT</u> in a position OTHER THAN OFF.</p> <p>DEPRESS and HOLD Pre-Charge push button:</p> <p style="text-align: center;"><u>AND</u></p> <p>OBSERVE Pre-Charge light ILLUMINATES</p> <p>OBSERVE voltage indicated on Voltmeter V2 increases &gt;250 VDC.</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Pre-Charge light LIT</p> <p>Voltage indicated on Input Voltage V2 is 260 VDC.</p>	<p>Depresses and holds the Pre-Charge Pushbutton.</p> <p>Verifies:</p> <p>Pre-Charge light LIT</p> <p>Voltage indicated on Input Voltage V2 meter increases &gt;250 VDC.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b>                      When CB-1 is closed:</p> <ul style="list-style-type: none"> <li>• PL10 Closed light illuminates.</li> <li>• PL9 Open light extinguishes.</li> <li>• PL17 Static inverter DC ON Sync light illuminates.</li> <li>• Input Voltage V2 increases to battery voltage - 268 VDC</li> <li>• Computer UPS inverter voltage V1 increases to 208 volts if SW2 is in a position OTHER THAN OFF</li> <li>• F1 Frequency increases to 60 Hertz.</li> </ul>			
*6	CLOSE Battery Input Breaker CB-1	Places CB-1 Battery Input Breaker to close position (Lifts it up).		
7	RELEASE Pre-Charge push button.	Releases Pre-Charge push button.		
8	OBSERVE DC bus voltage on Voltmeter V2 ~ 268V DC.	Checks Input Voltage V2 meter ~ 268V DC.		
	<p><b><u>EVALUATOR CUE:</u></b>                      Input Voltage V2 meter is 270V DC.</p>			

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
9	<p>OBSERVE Inverter output voltage on Voltmeter V1 ~208V AC.</p> <p><b><u>EVALUATOR CUE:</u></b> Output Voltage V1 Computer UPS Inverter Voltage meter is 208V AC.</p>	<p>Checks: Output Voltage V1 Computer UPS Inverter Voltage meter ~208V AC.</p>		
10	<p>OBSERVE Inverter output frequency on Frequency Meter F1~ 60 HZ.</p> <p><b><u>EVALUATOR CUE:</u></b> Frequency F1 meter is 60 HZ.</p>	<p>Checks: Frequency F1 meter ~ 60 HZ.</p>		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR NOTE:</u></b>                      When CB-6 is closed:</p> <ul style="list-style-type: none"> <li>• PL14 illuminates.</li> <li>• PL13 extinguishes.</li> <li>• PL16 illuminates.</li> <li>• V4 Input voltage increases to 480 VAC.</li> <li>• Output Voltage V3 Voltmeter increases to 208 VAC if SW4 is in any position OTHER THAN OFF.</li> <li>• Frequency F3 meter increases to 60 Hertz.</li> </ul>			
*11	CLOSE Alternate Source AC Input Breaker CB-6.	Places CB-6 Alternate Source AC Input Bkr to the close position (Lifts it up)		
12	OBSERVE input voltage on Voltmeter V4 ~ 480V AC.	Verifies: Input Voltage V4 meter ~ 480V AC.		
	<p><b><u>EVALUATOR CUE:</u></b>                      Input Voltage V4 meter is 480V AC.</p>			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
13	CHECK output voltage on Voltmeter V3 ~ 208V AC.  <u><b>EVALUATOR CUE:</b></u> Output Voltage V3 meter is 208V AC.	Checks: Output Voltage V3 meter ~ 208V AC.		
14	CHECK output frequency on Frequency Meter F3 ~ 60 HZ.  <u><b>EVALUATOR CUE:</b></u> Frequency F3 meter is 60 HZ.  <u><b>EVALUATOR NOTE:</b></u> When CB-4 is closed: <ul style="list-style-type: none"> <li>• PL8 illuminates.</li> <li>• PL7 extinguishes.</li> <li>• PL3 Sync Potential light illuminates.</li> </ul>	Checks: Frequency F3 meter ~ 60 HZ.		
*15	CLOSE Alternate Source AC Input to Static Switch Breaker CB-4.	Places CB-4 Alternate Source AC Input to Static Switch Breaker to close (Lifts it up).		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
16	CHECK Sync Potential light PL3 ILLUMINATES.  <u><b>EVALUATOR CUE:</b></u> Sync Potential PL3 light-LIT	Checks: Sync Potential PL3 light-LIT.		
17	CHECK Manual Bypass Switch selected to NORMAL MODE by observing Normal Mode indicator light PL6 ILLUMINATED.  <u><b>EVALUATOR CUE:</b></u> Normal Mode PL6 light-LIT	Verifies: Manual Bypass Switch Normal Mode PL6 light-LIT.		
*18	DEPRESS Inverter To Load push button PB1	Depresses: Inverter To Load PB1 push button		
19	OBSERVE Indicator Light PL1 ILLUMINATES.  <u><b>EVALUATOR CUE:</b></u> Inverter Supply PL1 light LIT	Verifies: Inverter Supply PL1 light LIT		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
20	If Alternate Power Source was in Service, OBSERVE PL2 EXTINGUISHES.  <u><b>EVALUATOR CUE:</b></u> Alternate Supply PL2 light – NOT LIT	Checks: Alternate Supply PL2 light – NOT LIT.		
*21	CLOSE Output Breaker CB-2.  <u><b>EVALUATOR CUE:</b></u> If necessary, Role-play the supervisor and inform the candidate that it is desired to close all load breakers on panels 1Y619 and 1Y620 in the next step.	Places CB-2 System Output Breaker to close (Lifts it up)		
22	CLOSE desired instrument load breakers on appropriate panel(s): Panels 1Y619 and 1Y620 for Computer UPS.	Closes all breakers on the following two panels: 1Y620 120V AC Computer UPS Distribution Panel  AND 1Y619 120V AC Computer UPS Distribution Panel		
*23	On Computer UPS only, CLOSE or CHECK CLOSED DCS output breaker CB7.	Places CB7 DCS Output Breaker to close.		

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 57.OP.001.102

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

Step	Action	Standard	Eval	Comments
24	<p>ENSURE Inverter load indicated on Ammeter A1:                      ≤ 208 amps for Computer Inverter.</p> <p><b><u>EVALUATOR CUE:</u></b>                      Computer UPS Inverter Amps A1 ammeter is 50 amps</p> <p><b><u>EVALUATOR CUE:</u></b>                      This completes the JPM</p>	<p>Checks:                      Computer UPS Inverter Amps A1 meter                      ≤ 208 amps</p>		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Unit 1 is in a Refueling Outage.
- B. Computer Distribution Panels 1Y619 and 1Y620 have been completely de-energized to perform maintenance on the panels.
- C. Computer UPS 1D656 is de-energized.
- D. Maintenance has been completed and all clearance orders have been removed.

### **INITIATING CUE**

Your supervisor directs you to re-energize Computer Distribution Panels 1Y619 and 1Y620 with Computer UPS 1D656 IAW with OP-157-001 Computer and Vital UPS.

### **TASK CONDITIONS**

- A. Unit 1 is in a Refueling Outage.
- B. Computer Distribution Panels 1Y619 and 1Y620 have been completely de-energized to perform maintenance on the panels.
- C. Computer UPS 1D656 is de-energized.
- D. Maintenance has been completed and all clearance orders have been removed.

### **INITIATING CUE**

Your supervisor directs you to re-energize Computer Distribution Panels 1Y619 and 1Y620 with Computer UPS 1D656 IAW with OP-157-001 Computer and Vital UPS.

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

S/RO	58.OP.006.251	0	01/07/04	212000 A1.01	2.8/2.9
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Start RPS MG Set 2S237A from Local Control Panel 2G201A IAW OP-258-001

Completed By: \_\_\_\_\_ Reviews: \_\_\_\_\_

Russ Halm	Date	Instructor/Writer	Date
Writer			

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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Date of Performance:	20	Time Taken (Min.)
	Allowed Time (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 58.OP.006.251**

**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.

**II. REFERENCES**

OP-258-001, RPS System (Rev. 25)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Reactor Startup preparations are in progress on Unit 2.
- B. RPS MG Set 2S237A has been de-energized for maintenance.
- C. The 120 V RPS Power Distribution Panel 2Y201A is on Alternate Power.
- D. Maintenance has been completed on the RPS MG Set, and all clearance orders have been removed.

**V. INITIATING CUE**

Your supervisor directs you to Startup RPS MG Set A and close the EPA Breakers in preparation for returning the system to normal. It is not necessary to align the "Alternate" supply to RPS bus EPA breakers at this time.

**VI. TASK STANDARD**

RPS MG set A is running and EPA breakers are closed.

**VII. TASK SAFETY SIGNIFICANCE**

Provides a reliable, regulated power source to the reactor protection system.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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 plant.</li> <li>• Obtain permission from Shift Manager to perform this JPM.</li> <li>• Ensure the following material is available to support performance of this JPM:</li> <li>• A copy of the latest revision of OP-258-001, RPS System.</li> </ul> <p><b><u>EVALUATOR NOTE:</u></b> The following conditions exist:</p> <ul style="list-style-type: none"> <li>• Motor On light (red) is EXTINGUISHED.</li> <li>• Motor Off light (green) is ILLUMINATED.</li> <li>• Generator Output breaker (on the MG Set) is open.</li> <li>• The MG voltmeter and ammeter indicate 0.</li> <li>• Both EPA breakers (2CBS003A-A and 2CBS003A-C) are open.</li> <li>• All four red indicating lights on the EPA breakers are extinguished.</li> </ul>			
1	Obtain a controlled copy of OP-258-001.	Controlled copy obtained.		
2	Selects the correct section to perform.	Selects section 2.1		
3	Review the prerequisites.	Ensures all prerequisites have been met.		
4	Reviews precautions	Reviews precautions		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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

Step	Action	Standard	Eval	Comments
5	Start RPS M-G Set 2S237A/2G201A from local control panel 2G201A located on top of M-G Set as follows: Unlock <u>AND</u> Rotate Voltage Adjust potentiometer to FULL COUNTER-CLOCKWISE position  <b><u>EVALUATOR NOTE:</u></b> Motor has automatic reset of thermal overloads. If motor fails to come up to speed, thermal overloads should be allowed time to reset prior to initiating another start sequence.	Loosens locking device set screw.  Rotates the potentiometer to the full CCW position.		
*6	Depress AND Hold Motor On push button.	Depresses and holds the Motor On pushbutton.		
7	WHEN Motor On red indicating light ILLUMINATES, Release Motor On push button.  <b><u>EVALUATOR CUE:</u></b> The red light above the Motor On pushbutton –LIT	Verifies: The red Motor On light – LIT  Releases the Motor On pushbutton		
8	Observe M-G Set comes up to speed	Verifies: M-G set begins to rotate by visible observation of shaft or audible noise of shaft beginning to rotate		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR CUE:</u></b> Shaft is rotating and/or it can be heard to starting to rotate</p> <p><b><u>EVALUATOR NOTE:</u></b> The Motor On pushbutton must be depressed again in order to reset the overvoltage trip. There is no visible indication that it has reset.</p>			
9	Reset OV relay by Depressing Motor ON push button.	Depresses: Motor On pushbutton.		
10	Adjust voltage output to 120V AC using Voltage Adjust potentiometer.	Checks: RPS M-G Set A Voltmeter to determine existing voltage		
*11	<p><b><u>EVALUATOR CUE:</u></b> Inform the candidate that RPS M-G set A Voltmeter is 110 Volts</p> <p><b><u>EVALUATOR CUE:</u></b> Inform the candidate that the voltage is 120 Volts</p>	<p>While observing the RPS M-G Set A Voltmeter: Turns the Voltage Adjust potentiometer clockwise until 120 volts is observed.</p>		
12	Lock Voltage Adjust potentiometer.	Tightens the locking set screw on the Voltage adjust potentiometer.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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

Step	Action	Standard	Eval	Comments
* 13	Close Generator Output breaker located on local control panel 2G201A.  <b>EVALUATOR NOTE:</b> When the Generator Output Breaker is closed, the red Motor Gen Power IN light on EPA Panel 2CBS003 A-A will illuminate.	Places the Generator Output breaker to the ON position (Lifts it up).		
14	Check Input Power Available red light ILLUMINATES at EPA breaker 2CBS003A-A.  <b>EVALUATOR CUE:</b> Motor Gen Power IN red light LIT	Verifies: Motor Gen Power IN red light LIT (on 2CBS003A-A)		
15	Close M-G set EPA breakers per section 2.2 of this procedure.			
16	Selects the correct section to perform.  <b>EVALUATOR NOTE:</b> Performance of the next step will require the use of a key for the Keylock switch. These keys are readily available to the operators. They can be obtained from the control room or FUS office if necessary. The use of this key will be SIMULATED for this JPM. (Key would normally be obtained during the pre-job brief).	Selects section 2.2		
17	Review the prerequisites.	Ensures all prerequisites have been met.		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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

Step	Action	Standard	Eval	Comments
* 18	Close EPA breaker 2CBS003A-A as follows:  Momentarily Place Oper/Reset Switch to RESET for EPA breaker 2CBS003A-A.  <b>FAULT STATEMENT:                      THE UNDERVOLTAGE LIGHT WILL REMAIN LIT IN THE FOLLOWING STEP. THIS WILL REQUIRE THE CANDIDATE TO MOMENTARILY PLACE THE OPER/BKR TRIP/RESET SWITCH TO RESET, A SECOND TIME, FOR EPA BREAKER 2CBS003A-A.</b>	Inserts key into keylock switch AND Momentarily places Oper/Bkr Trip/Reset switch to RESET. (on 2CBS003A-A)		
19	Confirm overvoltage, undervoltage and underfrequency lights are <u>NOT</u> ILLUMINATED.  <b>EVALUATOR CUE:</b> Overvoltage, and Underfrequency lights are NOT LIT  Undervoltage light is LIT	Verifies: Overvoltage, Undervoltage AND Underfrequency lights are NOT LIT		
* 20	<u>IF</u> any of the three lights are ILLUMINATED;  Momentarily Place Oper/Reset Switch to RESET for EPA breaker 2CBS003A-A.	Momentarily places Oper/Bkr Trip/Reset switch to RESET. (on 2CBS003A-A)  Verifies Undervoltage light is NOT LIT		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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

Step	Action	Standard	Eval	Comments
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Undervoltage light is NOT LIT</p>			
*21	Place Oper/Reset Switch to OPER for EPA breaker 2CBS003A-A.	Places Oper/Bkr Trip/Reset switch to OPER. (on 2CBS003A-A)		
*22	Close EPA breaker 2CBS003A-A.	Places RPS MG Set EPA BKR to ON position (Lifts it up) (on 2CBS003A-A)		
23	Check Input Power Available red light ILLUMINATES at EPA breaker 2CBS003A-C	Verifies: Motor Gen Power IN red light LIT (on 2CBS003A-C)		
	<p><b><u>EVALUATOR CUE:</u></b></p> <p>Motor Gen Power IN red light LIT at EPA breaker 2CBS003A-C</p>			
	<p><b><u>EVALUATOR NOTE:</u></b></p> <p>Performance of the next step will require the use of a key for the Keylock switch. These keys are readily available to the operators. They can be obtained from the control room or FUS office if necessary. The use of this key will be SIMULATED for this JPM. (Key would normally be obtained during the pre-job brief).</p>			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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

Step	Action	Standard	Eval	Comments
*24	Close EPA breaker 2CBS003A-C as follows:	Inserts key into keylock switch AND		
	Momentarily Place Oper/Reset Switch to Reset for EPA breaker 2CBS003A-C.	Momentarily places Oper/Bkr Trip/Reset switch to RESET. (on 2CBS003A-C)		
25	Confirm overvoltage, undervoltage and underfrequency lights are <u>NOT</u> ILLUMINATED.	Verifies:		
		Overvoltage, Undervoltage AND Underfrequency lights are NOT LIT		
	<b><u>EVALUATOR CUE:</u></b>			
	Overvoltage, Undervoltage AND Underfrequency lights are NOT LIT			
*26	Place Oper/Reset Switch to OPER for EPA breaker 2CBS003A-C.	Places Oper/Bkr Trip/Reset switch to OPER. (on 2CBS003A-C)		
*27	Close Electrical Protection Assembly (EPA) series breaker 2CBS003A-C.	Places RPS MG Set EPA BKR to ON position (Lifts it up) (on 2CBS003A-C)		
28	At Reactor Control Rod Test Instrument Panel 2C610, Check Generator A Feed to RPS Bus A white indicating light ILLUMINATED.	Candidate simulates Contacting Unit 2 Control room PCO to confirm white light illuminated for Generator A Feed to RPS Bus A.		
	<b><u>EVALUATOR CUE:</u></b>			
	Role-play Control room PCO and inform candidate that Generator A Feed to RPS Bus A white indicating light is LIT			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 58.OP.006.251

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

Step	Action	Standard	Eval	Comments
	<b>EVALUATOR CUE:</b> That completes this JPM			

\*Critical Step

#Critical Sequence

## **TASK CONDITIONS**

- A. Reactor Startup preparations are in progress on Unit 2.
- B. RPS MG Set 2S237A has been de-energized for maintenance.
- C. The 120 V RPS Power Distribution Panel 2Y201A is on Alternate Power.
- D. Maintenance has been completed on the RPS MG Set, and all clearance orders have been removed.

## **INITIATING CUE**

Your supervisor directs you to Startup RPS MG Set A and close the EPA Breakers in preparation for returning the system to normal. It is not necessary to align the "Alternate" supply to RPS bus EPA breakers at this time.

## **TASK CONDITIONS**

- A. Reactor Startup preparations are in progress on Unit 2.
- B. RPS MG Set 2S237A has been de-energized for maintenance.
- C. The 120 V RPS Power Distribution Panel 2Y201A is on Alternate Power.
- D. Maintenance has been completed on the RPS MG Set, and all clearance orders have been removed.

## **INITIATING CUE**

Your supervisor directs you to Startup RPS MG Set A and close the EPA Breakers in preparation for returning the system to normal. It is not necessary to align the "Alternate" supply to RPS bus EPA breakers at this time.

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

S/RO	56.OP.006.201	0	01/07/04	201002 K1.06	3.2/3.3
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Bypass Control Rod at Rod Drive Control Cabinet (RDCC) OP-256-001

Completed By: Russ Halm

Reviews:

Writer	Date	Instructor/Writer	Date
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Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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Date of Performance:	10 Allowed Time (Min.)	Time Taken (Min.)
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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 56.OP.006.201**

**I. SAFETY CONSIDERATIONS**

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established 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.

**II. REFERENCES**

OP-256-001, Reactor Manual Control System (RMCS) (Revision 13)

**III. REACTIVITY MANIPULATIONS**

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

NONE

**IV. TASK CONDITIONS**

- A. Unit 2 startup is in progress.
- B. It has been determined a fault has occurred with control rod 10-31, requiring it to be bypassed at the Rod Drive Control Cabinet (RDCC).

**V. INITIATING CUE**

Bypass Control Rod 10-31 at the Unit 2 Rod Drive Control Cabinet (RDCC) and restart RMCS.

**VI. TASK STANDARD**

Control rod 10-31 is bypassed and RMCS is restarted.

**VII. TASK SAFETY SIGNIFICANCE**

Potential inadvertent reactivity addition

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 56.OP.006.201

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 plant.</li> <li>• Obtain permission from Shift Manager to perform this JPM.</li> <li>• Ensure the following material is available to support performance of this JPM:</li> <li>• A copy of the latest revision of OP-256-001.</li> </ul>			
1	Obtain a controlled copy of OP-256-001.	Controlled copy obtained.		
2	Selects the correct section to perform.	Selects section 2.7		
3	Review the prerequisites.	Ensures all prerequisites have been met.		
	<p><b><u>EVALUATOR CUE:</u></b> Inform the candidate all prerequisites have been met.</p>			
4	Review all precautions.	Follows all precautions as applicable.		
*5	Using Fault Location Map on analyzer section of Rod Drive Control Instrument Panel 2C616, Upper Relay Room Determine Binary Coordinate code for control rod to be bypassed.	Determines Binary Coordinate Code for Control Rod 10-31 is: 00100 01001		
	<p><b><u>EVALUATOR NOTE:</u></b> 2C616 is located in Upper Relay Room. Toggle switches are located on lower right hand side of the analyzer section.</p>			

\*Critical Step

#Critical Sequence

**PERFORMANCE CHECKLIST**

Appl. To/JPM No.: 56.OP.006.201

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

Step	Action	Standard	Eval	Comments
*6	At analyzer section of Panel 2C616, Position Bypassed Rod Identify switches corresponding to Binary Coordinates in UP position for values of 1 and in DOWN position for values of 0.  <b><u>EVALUATOR NOTE:</u></b> UP position for values of 1 DOWN position for values of 0	Using Bypassed Rod Identity switches, inserts Binary Code 00100 01001		
7	At Analyzer section of Panel 2C616, position Bypassed Switch in UP position	Places "Bypassed" Switch in UP position.		
8	Observe ROD BYPASS light ILLUMINATES at Rod Selection Motion Control section of Unit Operating Benchboard 2C651, when the bypassed control rod is selected.	Candidate simulates a call to the control room and requests the PCO to perform the following: <ul style="list-style-type: none"> <li>• Select bypassed control rod.</li> <li>• Observe ROD BYPASS light ILLUMINATED</li> <li>• Observe rod selection pushbutton lamps ILLUMINATED</li> <li>• Observe green rod select lamp on full core display <u>NOT</u> ILLUMINATED.</li> </ul>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 56.OP.006.201

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

Step	Action	Standard	Eval	Comments
9	<p><b><u>EVALUATOR CUE:</u></b></p> <ul style="list-style-type: none"> <li>• When the candidate indicates he would call the Control Room to verify the Rod Bypass light is illuminated on 2C651 Role-play the control room PCO and inform him/her the</li> <li>• Bypassed control rod is SELECTED</li> <li>• ROD BYPASS light ILLUMINATED</li> <li>• Rod selection pushbutton lamps ILLUMINATED</li> <li>• Green rod select lamp on full core display <u>NOT</u> ILLUMINATED.</li> </ul> <p>Notify following control rod bypassed:</p> <p>Reactor Engineering</p> <p>I &amp; C</p> <p><b><u>EVALUATOR CUE:</u></b></p> <p>Role-play Reactor engineering and I &amp; C and acknowledge the report.</p>	<p>Candidate simulates a call to Reactor Engineering and I &amp; C to notify them that the control rod is bypassed.</p>		
10	<p>IF Control Rod bypassed due to a fault or component failure, Restart RMCS in accordance with section 2.1 of this procedure.</p>	<p>Candidate determines that restarting RMCS is appropriate based on the JPM initial conditions, which stated there was a fault.</p>		

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 56.OP.006.201

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

Step	Action	Standard	Eval	Comments
	<b><u>EVALUATOR CUE:</u></b>			
	If necessary, Role-play shift supervision and inform the candidate that it is desired to restart RMCS.			
11	Selects the correct section to perform.	Selects section 2.1		
12	Review the prerequisites.	Ensures all prerequisites have been met.		
	<b><u>EVALUATOR CUE:</u></b>			
	Inform the candidate all prerequisites have been met.			
*13	At Rod Drive Control Instrument Panel 2C616, Upper Relay Room, Depress and Hold RDCS Status Reset push button for minimum of 2 seconds.	Depresses and Holds: RDCS Status Reset pushbutton for minimum of 2 seconds.		
	<b><u>EVALUATOR NOTE:</u></b>			
	LED's in the next step are located at the very bottom of the analyzer panel.			
14	Observe Test Counter of Phase Generator Sub Test 0, 1, & 2 LED's on analyzer section of Panel 2C616 CYCLING.	Verifies the following:  Sub Test 0, 1, & 2 LED's blinking ON and OFF		
	<b><u>EVALUATOR CUE:</u></b>			
	Sub Test 0, 1, & 2 LED's ARE blinking ON and OFF			

\*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 56.OP.006.201

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

Step	Action	Standard	Eval	Comments
15	Check no lighted LED's on Fault Location Map on analyzer section of Panel 2C616.  <u><b>EVALUATOR CUE:</b></u>  ALL Fault Location Map LED's are NOT LIT	Verifies ALL Fault Location Map LED's are NOT LIT		
16	Observe no control rod test failures by allowing Reactor Manual Control System to cycle its tests for ~ five minutes.  <u><b>EVALUATOR CUE:</b></u>  5 minutes has passed and ALL Fault Location Map LED's are NOT LIT  <u><b>EVALUATOR CUE:</b></u>  This completes the JPM.	Waits 5 minutes and then Verifies ALL Fault Location Map LED's are NOT LIT		

\*Critical Step

#Critical Sequence

### **TASK CONDITIONS**

- A. Unit 2 startup is in progress.
- B. It has been determined a fault has occurred with control rod 10-31, requiring it to be bypassed at the Rod Drive Control Cabinet (RDCC).

### **INITIATING CUE**

Bypass Control Rod 10-31 at the Unit 2 Rod Drive Control Cabinet (RDCC) and restart RMCS.

### **TASK CONDITIONS**

- A. Unit 2 startup is in progress.
- B. It has been determined a fault has occurred with control rod 10-31, requiring it to be bypassed at the Rod Drive Control Cabinet (RDCC).

### **INITIATING CUE**

Bypass Control Rod 10-31 at the Unit 2 Rod Drive Control Cabinet (RDCC) and restart RMCS.