

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

S/RO	64.OP.007.151	1	02/11/04	202002 A2.05	3.1/3.1
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	Instructor/Writer
Date	Date

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 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.

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><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> Establish task conditions as directed on attached setup instructions. The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. When student is ready to begin JPM, place the simulator in RUN. <p><u>Simulator Setup</u></p> <ul style="list-style-type: none"> Select any MODE 1 100% IC. Place Simulator in RUN Manually runback recirc flow to achieve 95% power Run batch file RRB.STLBJPM. Depress "B" Reactor Recirc Controller INCREASE pushbutton to ensure controller is saturated. 			

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>Simulator Operator</u></p> <ul style="list-style-type: none"> • During this JPM you will be required to ROLE play as the in plant NPO at the scoop tube positioner. • Select Recirc Screen RR6. • Monitor Tachometer Generator Speed SI-14032B • AND • Servo Controller Demand XI-14032B. <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><u>EVALUATOR CUE:</u></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. <u>EVALUATOR CUE:</u> 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><u>EVALUATOR NOTE:</u></p> <p>PICSY group display STDP 83 may be used to help match speeds</p> <p><u>BOOTH CUE:</u></p> <ul style="list-style-type: none"> • ROLE play as NPO at scoop tube positioner. • Monitor Tach Generator Speed SI-14032B and Servo Controller Demand XI-14032B. • Direct student to change demand until signals are matched. 	<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><u>FAULT STATEMENT</u></p> <p>RRP "B" WILL EXPERIENCE AN UNCONTROLLED SPEED INCREASE AFTER THE SCOOP TUBE LOCK IS RESET.</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. 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. <u>EVALUATOR CUE:</u> 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.

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.

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
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Date of Performance:	10/20 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

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><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in the simulator. • Select any Mode 1 100% IC • Run batch file IGB.SBGTAFAIL • When student is ready to begin JPM, place the simulator in RUN. 			
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><u>EVALUATOR CUE:</u> 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. <u>EVALUATOR NOTE:</u> SGTS Fans may not obtain 10,100 cfm due to insufficient suction flow path through SGTS Makeup OA Dmp FD07551A2. <u>EVALUATOR NOTE:</u> 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.	Verifies: Red Light is LIT and Amber Light is NOT LIT for SGTS A INLET DMP HD 07553A		
	<p><u>EVALUATOR NOTE:</u></p> <p>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.</p>			
11	SGTS Makeup OA Dmp FD07551A2 MODULATED/OPEN approximately 70 seconds after SGTS Fan OV109A started.	<p>Approximately 70 seconds after SGTS Fan OV109A started.</p> <p>Verifies: SGTS Makeup OA DMP FD 07551A2 BOTH Red Light and Amber Light LIT</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>FAULT STATEMENT:</u> OA DMP FD07551A2 fails CLOSED. Fan OV109A will ALSO fail to trip</p> <p><u>EVALUATOR NOTE:</u> 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		
<u>EVALUATOR CUE:</u> 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	<p>If Zone 3 Secondary Containment Isolation signal present, CONFIRM SGTS FAN 0V109A trips when Zone 3 lockout relay XY07553A reset.</p> <p><u>EVALUATOR CUE:</u> That completes the RO portion of the JPM.</p> <p><u>EVALUATOR CUE:</u> <u>FOR SRO CANDIDATES ONLY</u> Give the SRO candidate the second cue sheet that addresses the Tech Spec LCO for the inoperable SGTS.</p>	Determines not applicable.		
21	Obtains a copy of Tech Specs	References Tech Spec 3.6.4.3 and TR 3.6.1		

*Critical Step

#Critical Sequence

SRO ONLY

TASK CONDITIONS

The Plant is in Mode 1.

- A. "A" Train of Standby Gas Treatment System has just been declared inoperable.

INITIATING CUE

What Technical Specifications action(s), including time limits, is/are required as a result of this failure?

SRO ONLY

TASK CONDITIONS

The Plant is in Mode 1.

- A. "A" Train of Standby Gas Treatment System has just been declared inoperable.

INITIATING CUE

What Technical Specifications action(s), including time limits, is/are required as a result of this failure?

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".

SGTS A
FILTER TRAIN
FAILED
(A11)

SETPOINT: 2000 cfm
ORIGIN: 62FSLX-07551A (FSL07551A),
74-136011 overload, or
62PDSLLX-07553A (PDSLL-07553A)

1. PROBABLE CAUSE:

- 1.1 Fan Motor overload or electrical fault.
- 1.2 Mechanical failure of fan.
- 1.3 -Loss of fan control power.
- 1.4 HIC07555A not set at 45 (approx. 4500 CFM).
- (1) 1.5 If Zone 3 Secondary Containment Isolation signal present, low flow condition may have occurred immediately following the SGTS initiation. Alarm will seal in even though SGTS flow returns to normal. When lock-out on OC681 is reset and SBGT is taken to off to reset logic, the alarm should clear.

2. OPERATOR ACTION:

- 2.1 If no initiation signal present, CHECK SGTS FAN 0V109A tripped.
- 2.2 CHECK SGTS AIR FLOW & HEPA FILT PRESS DIFF FR07553A. SGTS AIR FLOW should be approximately 10,100 cfm.
- 2.3 CHECK HIC07555A on Panel OC883A is set at 45.
- 2.4 CHECK SGTS Fan OV109A supply breaker MCC OB136011, thermal overloads and control power fuse.
- 2.5 If fan tripped after starting time delay, CHECK fan integrity.
- 2.6 COMPLY with TS 3.6.4.3 and TR 3.6.1.
- (1) 2.7 If Zone 3 Secondary Containment Isolation signal present, CONFIRM SGTS FAN 0V109A trips when Zone 3 lockout relay XY07553A reset.

3. AUTOMATIC ACTION:

- 3.1 If Zone 3 Secondary Containment Isolation signal present, no automatic actions occur.
- 3.2 If Zone 3 Secondary Containment Isolation signal not present, SGTS FAN 0V109A trips.

4. REFERENCE:

- 4.1 E-332
- 4.2 VC-175
- 4.3 V-175
- 4.4 E-201
- 4.5 TS 3.6.4.3
- 4.6 TR 3.6.1
- (1) 4.7 CR 97-0623 both SGTS Fans tripped when Restoring from swap of RPS.

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	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 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
	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in the simulator. • 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 • Start A & B ESW pumps • Fill out a DG start log for the "A" DG. <p>The following conditions should then exist:</p> <ul style="list-style-type: none"> • DG "A" Watts - 0 • DG "A" Amps - 0 • DG "A" Freq - ~60 Hz • DG "A" Volts - ~4,200 VAC • Ready to Run Light illuminated • DG "A" Gov Mode Sel HS-00055A - DROOP • DG "A" Volt Reg Mode Sel HS-00056A - AUTO • DG "A" to Bus 1A Bkr 1A20104 - OPEN • DG "A" to Bus 1A Synch Sel HS-00039A - OFF • The PMS CRT is displaying the DG electrical screen <p>When student is ready to begin JPM, place the simulator in RUN.</p>			
1	Obtain a controlled copy of OP-024-001 Diesel Generator	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. <u>EVALUATOR NOTE:</u> 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. <u>EVALUATOR NOTE:</u> During synchronizing or load changes, increasing voltage adjust will reduce negative (in) KVARs and decreasing voltage adjust will reduce positive (out) KVARs. <u>EVALUATOR NOTE:</u> 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	<p>AFTER diesel generator run unloaded 5 minutes or as required during emergency, Synchronize Diesel Generator A to 4.16KV Bus 1A, as follows:</p> <p>Place DG A to Bus 1A Sync Sel HS-00039A switch to ON.</p>	<p>Inserts Key into DG A to Bus 1A Sync Sel HS-00039A switch and places in the ON position.</p>		
*6	<p>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.</p> <p><u>EVALUATOR NOTE:</u></p> <p>The FAST direction on the Synchroscope is clockwise.</p>	<p>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.</p>		
7	<p>Adjust DG A Speed Governor HS-00054A so Synchroscope XI-00037 rotating in FAST (clockwise) direction at ~ 1 (one) revolution per 60 seconds.</p>	<p>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.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></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"> • Both white lights will remain extinguished and the synchroscope pointer will stop at the 12 o'clock position. • The Running Idle light will extinguish and the Running Loaded light illuminates on the Local Panel (OC521A). 			
*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><u>EVALUATOR NOTE:</u></p> <p>Role-play the diesel NPO and inform the control room that the Running Loaded light is LIT</p> <p align="center">AND</p> <p>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 align="center"><u>CAUTION</u></p> <p>During each increase, anticipated DG output must not exceed present T-10 (T-20) bus load</p> <p align="center"><u>CAUTION</u></p> <p>If T-10 (T-20) Tap Changer Setpoint of Positive (Out) or Negative (In) 1000 KVARs is reached for \geq 20 seconds, Tap Changer will automatically change tap</p> <p><u>EVALUATOR CUE:</u></p> <p>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><u>EVALUATOR CUE:</u></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><u>EVALUATOR CUE:</u> 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 < 2000 KW, Perform following for 15 minutes for every hour < 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><u>EVALUATOR CUE:</u> 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:
<u>Russ Halm</u>	
Writer	
Date	Instructor/Writer
Date	Date

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:

*MAKE "C" NUMBER
574 P1*

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.

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><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM is to run AFTER JPM 84.OP.001.151 has been completed. This will allow for CIG 90# header to be restored. • This JPM must be performed on the simulator. • Set up the simulator IAW the attached setup instructions. • Place the simulator in Freeze. • 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. • When student is ready to begin JPM, place the simulator in RUN. 			
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.	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><u>EVALUATOR NOTE:</u></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>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><u>EVALUATOR NOTE:</u> 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.

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.

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			
Writer	Date	Instructor/Writer	Date

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 and restore 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><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in the simulator. • The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. • Set up the simulator IAW attached setup instructions. • Place the simulator in Freeze. • When student is ready to begin JPM, place the simulator in RUN. 			
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><u>EVALUATOR NOTE:</u></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><u>EVALUATOR NOTE:</u></p>				
<p>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 OR 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><u>EVALUATOR CUE:</u> Role-play the NPO and acknowledge the request.</p> <p><u>FAULT STATEMENT:</u> As NPO, REPORT "THE CIG COMPRESSORS WILL NOT RESET."</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>		
*15	<p><u>I</u>F 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>Verifies: IA 1K107A and IA 1K107B White lights LIT and Amber lights NOT LIT IA Pressure PI-12511A ~ 100 psig</p> <p>Contacts NPO and requests: Slowly Open I-A to CIG Cross-Tie 126172 And 126167</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
16	<p><u>EVALUATOR CUE:</u> Role-play the NPO and acknowledge the request.</p> <p><u>BOOTH CUE</u> Insert pfs 2 MRF PC125001 OPEN (opens IA 126167/126172)</p> <p><u>EVALUATOR CUE:</u> Role-play NPO and contact PCO to inform I-A to CIG Cross-Tie 126172 And 126167 are OPEN</p> <p>Verifies 90# CIG header is being pressurized</p> <p><u>EVALUATOR CUE:</u> That completes this JPM</p>	<p>Acknowledges the report</p> <p>Verifies: INSTR GAS HDR PRESS PI-12612 AND INSTR GAS SUPP PRESS PI-12642 Slowly rising</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 and restore 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 and restore CIG System pressure IAW appropriate Hard card.

BYPASSING MSIV AND CIG INTERLOCKS
(Ref. Section 2.4)

Attachment A
OP-184-001
Revision 19
Page 17 of 17

*****5 Keys Required*****

- 1. **Bypass MSIV Low Water Level 1 Isolation at 1C645 by Placing the following to BYPASS:**
 - a. HS-B21-S38A Rx Wtr Lvl 1 MSIV Bypass Logic A.
 - b. HS-B21-S38C Rx Wtr Lvl 1 MSIV Bypass Logic C.

- 2. **Bypass CIG Low Water Level 1 and High Drywell Pressure Isolation by Placing the following to BYPASS:**
 - a. At 1C645, HS-12694 Low Lvl 1/Hi Drywell Press CIG Bypass (HV-12603)
 - b. At 1C645, HS-12695 Low Lvl 1/Hi Drywell Press CIG Bypass (SV-12651)
 - c. At 1C644, HS-12696 Low Lvl 1/Hi Drywell Press CIG Bypass (SV-12605)

- 3. **IF 1.72# High Drywell Pressure isolation has occurred, Restore CIG as follows:**
 - a. **Open Instr Gas Cmp Suct Iso HV-12603.**
 - b. **Open Instr Gas To Contn Iso SV-12651.**
 - c. **Open Instr Gas Cmp OB Suct ISO SV-12605.**

- 4. **Reset Instrument Gas Compressor 1K205A and 1K205B at Containment Instrument Gas Control Panel 1C239 as follows:**
 - a. **Depress Cmp A/B Logic Reset Pushbutton on 1C239 to restart both CIG compressors. IF compressors did not start Continue:**
 - b. **Place Instrument Gas Compressor 1K205A Mode Selector Switch to OFF/RESET.**
 - c. **Place Instrument Gas Compressor 1K205B Mode Selector Switch to OFF/RESET.**
 - d. **Place Instrument Gas Compressor 1K205A Mode Selector Switch to AUTO.**
 - e. **Place Instrument Gas Compressor 1K205B Mode Selector Switch to AUTO.**
 - f. **Check White AC Power On Light for both compressors ILLUMINATED.**

OR

- 5. **IF Instrument Air available, Cross-Tie Instrument Air to CIG 90# Header as follows.**
 - a. **Slowly Open I-A to CIG Cross-Tie 126172.**
 - b. **Slowly Open I-A to CIG Cross-Tie 126167.**

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:

Russ Halm

Writer

Date

Instructor/Writer

Date

Approval:

Requesting Supv./C.A.
Head

Date

Nuclear Trng. Supv.

Date

10

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 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><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in the simulator. • Select a 100% IC • Place feedwater level control in SELECT Narrow range Level "A" • Insert BAT FWB.FWLC_BFL • The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. • When candidate is ready to begin JPM, place the simulator in RUN. 			
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><u>FAULT STATEMENT</u> REACTOR WATER LEVEL INDICATION WILL DECREASE AT A RATE OF ≈ 3 to 5"/MIN AFTER THE STUDENT SELECTS THE "B" FEEDWATER LEVEL.</p> <p>4 Transfer feedwater level control from A to B level input as follows with the Averaged or Selected HS14268 in SEL</p> <p>5 Observe feed flow/steam flow delta</p> <p><u>EVALUATOR NOTE:</u> Candidate should recognize Reactor Water Level is decreasing at a fast rate.</p> <p>*6 Depress B push button for SELECT LVL A OR B HS-C32-1S01</p>	<p>Check for deviation indication at FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 controller.</p> <p>Depress 'B' pushbutton for SELECT LVL A OR B HS-C32-1S01.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
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 Determines FW LEVEL CTL/DEMAND SIGNAL LIC-C32-1R600 controller cannot be NULLED.		
*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.	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.		
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	Informs supervisor of situation	Notifies supervisor that B channel was failing low.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR CUE:</u> Role play the Unit Supervisor and acknowledge the notification.</p> <p><u>EVALUATOR CUE:</u> This completes the JPM.</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'.

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

S/RO	14.ON.003.151	0	01/20/04	295018 AA1.03	3.3/3.4
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Respond to RBCCW system leak IAW ON-114-001

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

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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Date of Performance:	15	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:

*EXTENDED
NOY*

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 14.ON.003.151**

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

ON-114-001 Loss of RBCCW (Revision 16)
OP-114-001 Reactor Building Closed Cooling Water System (RBCCW) (Revision 16)
AR-106-001 (E15) Reactor Bldg. Sample Station 1C210 System Trouble (Revision 28)
AR-123-001 (E06) RBCCW Head Tank HI-LO Level (Revision 16)
LA-1294-001 Reactor Building Sampling Alarm Reflash Panel 1C294 (Revision 3)

III. REACTIVITY MANIPULATIONS

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

45 Loss of RBCCW

IV. TASK CONDITIONS

- A. Both Units are in Mode 1 @ 100% power.

V. INITIATING CUE

You are the PCOM, Respond to any alarms that are received and take the appropriate procedural actions.

VI. TASK STANDARD

RBCCW head tank level is stable the leak has been identified and 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.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
1	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in the simulator. • Select any Mode 1 IC • Insert IMF RW11401 1.0 to reduce RBCCW head tank level to 18.5 inches. Monitor on RW1 screen. • Freeze simulator • Reduce size of the leak by inserting MMF RW11401 to 0.005 • Assign pfs 1 DMF RW11401 • Assign pfs 2 IOR AN:AR106E15 CRYWOLF • The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. • When student is ready to begin JPM, place the simulator in RUN. <p><u>EVALUATOR NOTE:</u></p> <p>The RBCCW leak should cause the following alarm to be received in the control room:</p> <p>AR-123 -E06 RBCCW Head Tank HI-LO Level</p> <p>Acknowledge the alarm and refer to appropriate AR procedure</p>	<p>Refers to AR-123-E06 RBCCW HEAD TANK HI-LO LEVEL</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
2	<p>DISPATCH Operator to RBCCW head tank to determine if level high or low.</p> <p><u>EVALUATOR CUE:</u> Role-play the NPO and acknowledge the request. Report back to control room that RBCCW head tank level is low at ~ 18 inches.</p>	<p>Dispatches an Operator to RBCCW head tank to determine if level high or low.</p>		
3	<p>If low level: MAKEUP to head tank in accordance with OP-114-001.</p>	<p>Determines makeup to the head tank is warranted.</p>		
4	<p>Obtain a controlled copy of OP-114-001 Reactor Building Closed Cooling Water System.</p>	<p>Controlled copy obtained.</p>		
5	<p>Selects the correct section to perform.</p>	<p>Selects section 3.6</p>		
*6	<p>To add makeup water, THROTTLE OPEN RBCCW Demin M/U Supply Iso 113024.</p>	<p>Directs Field Operator to THROTTLE OPEN RBCCW Demin M/U Supply Iso 113024.</p> <p>When RBCCW Head Tank 1T201 level ~ 3/4 FULL, CLOSE RBCCW Demin M/U Supply Iso 113024.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
7	<p><u>EVALUATOR CUE:</u> Role-play NPO and acknowledge the request.</p> <p><u>BOOTH CUE:</u> Depress pfs 1 DMF RW11401 to remove the leak Depress pfs 2 IOR AN:AR106E15 CRYWOLF to cause AR-106-E15 REACTOR BLDG. SAMPLE STATION 1C210 SYSTEM TROUBLE to alarm</p> <p>NOTIFY Chemistry when water added to the system.</p>	<p>Contacts chemistry and NOTIFY Chemistry that water added to the system.</p>		
8	<p><u>EVALUATOR CUE:</u> Role-play NPO and report back to control room that RBCCW Demin M/U Supply Iso 113024 is full OPEN and RBCCW head tank level is stable, NOT rising or dropping.</p> <p>If level continues to decrease, INSPECT system for leaks.</p>	<p>Direct NPO to inspect RBCCW system for leaks.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR CUE:</u> Role-play NPO and acknowledge the request.</p>			
9	Acknowledge the alarm and refer to appropriate AR procedure	Refers to AR-106-001-E15 REACTOR BLDG. SAMPLE STATION 1C210 SYSTEM TROUBLE		
10	PERFORM LA-1294-001, Reactor Building Sampling Panel Alarm Response	Contact NPO and instructs PERFORM LA-1294-001, Reactor Building Sampling Panel Alarm Response.		
	<p><u>EVALUATOR CUE:</u> Role-play NPO and acknowledge the request.</p>			
11	If unable to maintain level with makeup, PERFORM ON-114-001 Loss of Reactor Building Closed Cooling Water System.	Determines ON-114-001 Loss of Reactor Building Closed Cooling Water System entry is required.		
12	Obtain a controlled copy of ON-114-001 Loss of Reactor Building Closed Cooling Water System.	Controlled copy obtained.		
13	Selects the correct section to perform.	Selects section 3.1		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
14	Record date and time of event.	Records date and time of event in the space provided in the procedure		
15	Obtains Shift supervision approval to proceed <u>EVALUATOR CUE:</u> Shift supervision has signed and dated the procedure.	Has Shift supervision sign and date the procedure in the space provided in the procedure		
16	Determine cause of loss. IF leakage out of system suspected, Perform section 3.6 of this procedure.	Determines there is leakage out of the system and section 3.6 is applicable.		
17	IF leakage out of system suspected: Check RBCCW Head Tank 1T201 level.	Previously performed		
18	IF RBCCW Head Tank 1T201 level decreasing Fill in accordance with OP-114-001 Reactor Building Closed Cooling Water System.	Previously performed		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
19	<p>Monitor drywell floor drain sump pumping times for any indication of leak inside drywell.</p> <p><u>EVALUATOR CUE:</u></p> <p>Once the candidate begins the search for the leak: Report back to control room that WATER CHILLER 1K207 TROUBLE (LIGHT 1) is the reason for the LA-1294-001, Reactor Building Sampling Panel Alarm AND there is a sizeable through-wall pipe leak at the RB Sample Station Chillers just downstream of valve 113113, right before drain valve 113119. Ask the control room operator what 2 valves need to be closed to isolate the leak?</p>	<p>Checks: DW SUMPS & EQUIP DRN LR/FR-16103</p> <p>Determines: That there is no leakage into the drywell and Step 3.6.7 is applicable next.</p>		
20	<p>IF Unit Two RBCCW System Shutdown, Ensure Unit Crosstie valves, Low Press Air Cmp RBCCW Return & Supply Iso Vlvs 213089 and 213090, not leaking through at Low Pressure Air Compressor.</p>	<p>Determines Unit 2 RBCCW is in service. (Based on initial conditions of Unit 2 is operating in Mode 1 @ 100% power)</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
21	<p>Check following for indication of leak:</p> <ul style="list-style-type: none"> RWCU Non regenerative heat exchangers. RWCU recirc pump coolers. Off gas refrigeration condensers. Off gas precoolers. RB sump coolers. RB Sample Station Chiller 1K207 Local Grab Sample cooler 1E235 PASS Sample cooler (1C250 rack). Containment instrument gas compressor coolers. Low pressure air compressor and aftercooler Unit Two RBCCW Head Tank Level for indication of cross unit leakage. <p><u>EVALUATOR NOTE:</u></p> <p>Candidate may choose to refer to the RBCCW drawing before isolating the leak.</p>	<p>Determines leakage exists at the RB Sample Station Chiller 1K207</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
*22	IF leak suspected in preceding: Stop any affected load. Isolate any affected heat exchanger. <u>EVALUATOR CUE:</u> Role-play the NPO and acknowledge the report.	Contact NPO and direct CLOSING the following valve to isolate the leak: 113113 AND 113114		
23	Notify RW control room RBCCW is entering sumps. <u>EVALUATOR CUE:</u> Role-play the NPO report to the control room that valves 113113 AND 113114 are CLOSED. Also report the leak has stopped.	Notifies RW control room RBCCW is entering sumps		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 14.ON.003.151

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR CUE:</u> Role-play the NPO and report to the control room that RBCCW head tank level is now rising.</p> <p><u>EVALUATOR CUE:</u> That completes this JPM</p>			

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. Both Units are in Mode 1 @ 100% power.

INITIATING CUE

Your are the PCOM, Respond to any alarms that are received and take the appropriate procedural actions.

TASK CONDITIONS

- A. Both Units are in Mode 1 @ 100% power.

INITIATING CUE

You are the PCOM, Respond to any alarms that are received and take the appropriate procedural actions.

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

S/RO	52.OP.005.151	1	01/16/04	206000 A4.13	4.1/4.0
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Recovery from a Manual Closure of HPCI Isolation Valves With an Initiation Signal Present With a Steam Leak Developing. (OP-152-001)

Completed By:		Reviews:	
<u>Russ Halm</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>20</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 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><u>EVALUATOR NOTE:</u></p>				
<ul style="list-style-type: none"> • This JPM must be performed in the simulator. • The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. • Setup the simulator IAW the attached setup instructions. • Place the Simulator in FREEZE. • When the student is ready to begin, place the Simulator in RUN. 				
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><u>EVALUATOR CUE:</u></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><u>EVALUATOR NOTE:</u></p> <p>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	<p>Open HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031.</p> <p><u>EVALUATOR CUE:</u> Role-play NPO and acknowledge the request.</p> <p><u>BOOTH OPERATOR CUE:</u> Insert pfs 3 MRF DC188128 OPEN to open the Aux Oil Pump breaker.</p> <p><u>EVALUATOR CUE:</u> Role-play NPO and report back to candidate that HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031 is OPEN.</p>	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.	Obtains key and inserts into keyswitch then Places control switch for HPCI STM SUPPLY IB ISO HV-155-F002 in CLOSE position. Verifies RED light NOT LIT and AMBER light LIT		
*11	Place control switch for HPCI STM SUPPLY OB ISO HV-155-F003 in CLOSE position.	Obtains key and inserts into then Places control switch for HPCI STM SUPPLY OB ISO HV-155-F003 in CLOSE position. Verifies 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
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		
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		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
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		
*20	WHEN: Steam line pressurized to ~ reactor pressure, Open HPCI STM SUPPLY IB ISO HV-155-F002.	Checks steamline pressure is rising on (PI-E41-1R602) and compares this to any Reactor pressure indicator. WHEN steamline pressure is ~ reactor pressure: Places control switch to OPEN for HPCI STM SUPPLY IB ISO HV-155-F002. Verifies RED light LIT and AMBER light NOT LIT		
21	Close HPCI WARM-UP LINE ISO HV-155-F100.	Places control switch to CLOSE for HPCI WARM-UP LINE ISO HV-155-F100 Verifies AMBER light LIT and RED light NOT LIT		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u> 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>			
22	<p>Ensure following valves OPEN: HPCI TURB EXH OB VAC BKR HV-155-F075. HPCI TURB EXH IB VAC BKR HV-155-F079.</p>	<p>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.</p>		
23	<p>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.</p>	<p>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.</p>		
24	<p>Place HPCI System in service feeding reactor vessel as follows: Place HPCI TURBINE FLOW CONTROL FC-E41-1R600 in MANUAL set for minimum.</p>	<p>Places HPCI TURBINE FLOW CONTROL FC-E41-1R600 in MANUAL set for minimum.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
*25	<p><u>FAULT STATEMENT</u></p> <p>WHEN THE STOP VLV FV-15612 AUTOMATICALLY OPENS IN THE NEXT STEP, A STEAM LEAK DEVELOPS IN HPCI EQUIPMENT ROOM.</p> <p>Close HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031.</p> <p><u>EVALUATOR CUE:</u> Role-play NPO and acknowledge the request.</p> <p><u>BOOTH OPERATOR CUE:</u> Insert pfs 4 MRF DC188128 CLOSE to CLOSE the Aux Oil Pump breaker.</p> <p><u>EVALUATOR CUE:</u> Role-play NPO and report back to candidate that HPCI TURBINE AUXILIARY OIL PUMP 1P213 BREAKER 1D274031 is CLOSED.</p>	Directs NPO to CLOSE Breaker 1D274031.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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Student Name: _____

Step	Action	Standard	Eval	Comments
26	<p>Observe: HPCI AUXILIARY OIL PUMP 1P213 STARTS. HPCI INJECTION HV-155-F006 OPENS.</p> <p><u>EVALUATOR NOTE:</u> 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>Verifies RED light LIT and AMBER light NOT LIT for the following: HPCI AUXILIARY OIL PUMP 1P213 HPCI INJECTION HV-155-F006</p>		
27	<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><u>EVALUATOR CUE:</u> 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

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