

18

JPM 1

DRAFT - AS SUBMITTED

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 70.OP.004.101**

I. SAFETY CONSIDERATIONS

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

II. REFERENCES

OP-070-001, Standby Gas Treatment System

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Reactivity Manipulation(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

Perform a manual startup of SGTS A.

Appl. To/JPM No: _____

Student Name: _____

Step	Action	Standard	Eval	Comments
1.	Obtain a controlled copy of OP-070-001.	Controlled copy obtained.		
2.	Select the correct section to perform.	Selects Section 3.2.		
3.	Review the prerequisites:	Ensures that all prerequisites have been met.		
4.	Review the precautions.	Follows precautions as applicable.		
*5.	Open the SGTS outside the air damper.	Depress the OPEN pushbutton for SGTS Clg OA Dmp HD-07555A. Observes that SGTS Clg OA Dmp HD-07555A opens for approximately 70 seconds. Red Light is ON Amber Light is OFF		
*6.	Start SGTS.	Places the selector switch for SGTS Fan OV109A in the START position. Observes Red Light is ON Amber Light is OFF		

*Critical Step

#Critical Sequence

Appl. To/JPM No: _____

Student Name: _____

Step	Action	Standard	Eval	Comments
7.	Monitor the air flowrate.	Monitors SGTS AIR FLOW FR07553A for a flowrate of >3,000 CFM. (~4,800 CFM)		
8.	Check SGTS damper position.	Confirms that the following dampers are in the indicated position: <ul style="list-style-type: none"> • SGTS Makeup OA Dmp FD07551A2 – MODULATING Amber and Red Lights ON • SGTS Fan Inlet Dmp HD07552A – OPEN Red Light ON Amber Light OFF • SGTS A Inlet Dmp HD07553A – OPEN Red Light ON Amber Light OFF 		
9.	Notifies US (Control Room) SGTS is operating for HPCI surveillance run. <u>EVALUATOR:</u> As the US (Control Room), acknowledge that SGTS is operating.	US (Control Room) notified.		

*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.
- D. The SGTS is aligned for automatic initiation in accordance with OP-070-001.
- D. All prerequisites are met.

INITIATING CUE:

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.
- E. The SGTS is aligned for automatic initiation in accordance with OP-070-001.
- D. All prerequisites are met.

INITIATING CUE:

Perform a manual startup of SGTS A.

JPM-2

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
RO 45.OP.017.102**

4. SAFETY CONSIDERATIONS

- 4. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-001, Operations Shift Policies.
- 4. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
 - 4. Whenever any electrical panel is opened for inspection during JPM performance.
 - 4. 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.

4. REFERENCES

OP-145-001, RFP and RFP Lube Oil System

4. REACTIVITY MANIPULATIONS

None

4. TASK CONDITIONS

- 4. The unit was operating at 100 percent reactor power.
- 4. A reactor recirc runback has occurred, which was initiated by a CW pump trip.
- 4. During the runback AR-101-B16, RFPT Control Signal Failure, annunciator alarmed.
- 4. HYD JACK of RFPT "A" was engaged IAW ON-145-001 and the RFPT is being controlled by the MSC.
- 4. I&C has informed the Unit Supervisor that the control signal problem has been corrected.

V. INITIATING CUE

Restore RFPT "A" control to the EAP in automatic per OP-145-001, section 3.16.4.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 45.OP.017.102

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>Evaluator</u></p> <ul style="list-style-type: none"> • This JPM will be performed in the simulator. • Select an IC that establishes 100 percent reactor power. • Place simulator in RUN. • Run back recirc to establish approximately 68 percent power. • Allow the plant to stabilize then INSERT the following malfunction: IMF FW145004A • DELETE the malfunction DMF FW145004A. • Place SIC-C32-1R601A to Manual. • Lower the MSC until RFPT "A" speed starts to decrease, engage the HYD JACK. • Ensure minimum flow requirements are met. • Place the simulator in FREEZE. • Assign Malf: IMF CN02:SICC3R601A 100 90 • Give the student time to read the task conditions/cue sheet and to look over Panel 1C651. • Place simulator in RUN. 			
1.	Obtain a controlled copy of OP-145-001.	OBTAIN controlled copy.		
2.	Review the prerequisites.	ENSURE prerequisites met.		
3.	Review the precaution(s).	FOLLOW precaution(s).		
4.	Select the correct section to perform.	SELECT Section 3.16.4.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 45.OP.017.102

Student Name: _____

Step	Action	Standard	Eval	Comments
*5.	Reset control signal failure.	DEPRESS the CTL SIG FAIL RESET RFPT "A" HS-C32-1S05A. OBSERVE green light OFF.		
6.	Check RFPT "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A indication changes.	At SIC-C32-1R601A: DEPRESS DEC pushbutton <u>and</u> OBSERVE output signal lowers (horizontal meter). DEPRESS INC pushbutton <u>and</u> OBSERVE output signal raises (horizontal meter).		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 45.OP.017.101

Student Name: _____

Step	Action	Standard	Eval	Comments
7.	Increase the output of SIC-C32-1R601A to 100 percent.	DEPRESS RFPT "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A INC pushbutton until indicator at 100% (horizontal meter).		
8.	Adjust RFP "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A bias thumbwheel to zero.	ADJUST bias thumbwheel or RFP "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A to 0.		
*9.	Turn HYD JACK off.	DEPRESS HYD JACK-A HS-12772A OFF pushbutton. OBSERVE RED light OFF. OBSERVE AMBER light ON.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 45.OP.017.101

Student Name: _____

<p>#*10.</p>	<p>Lower output of RFPT "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A until it is controlling RFPT "A".</p>	<p>DEPRESS RFPT "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A DEC pushbutton until EAP is in control.</p> <p>OBSERVE slight decrease in either:</p> <ul style="list-style-type: none"> • RFPT "A" CTL VLV POSN • RFPT "A" speed (PICSY) • RFP "A" flow (PICSY) 		
<p>#*11.</p>	<p>FAST RAISE the MSC to the HSS position.</p>	<p>DEPRESS MSC HS-12730A2 RAISE FAST pushbutton until OBSERVE RED HSS light is ON and AMBER light is OFF.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 45.OP.017.101

Student Name: _____

12.	Null SIC-C32-1R601A controller.	ADJUST RFPT "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A until SPEED OUTPUT SIGNAL (horizontal meter) and SPEED DEMAND SIGNAL (vertical meter) are matched.		
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*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 45.OP.017.101

Student Name: _____

Step	Action	Standard	Eval	Comments
<i>Alternate Path</i>	NOTE: <i>If alternate path go to next page at step @13. If normal progression, proceed with step 13.</i>			
13.	Place the controller in AUTO.	DEPRESS RFPT "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A AUTO pushbutton. OBSERVE GREEN light ON. OBSERVE AMBER light OFF.		
14.	Balance RFP flows.	VERIFY discharge flows of RFP "A", "B", and "C" are approximately equal. If needed, ADJUST bias thumbwheel for RFP A(B)(C) SPD CTL/DEMAND SIGNAL SIC-C32-1R601A(B)(C) controllers until discharge flows are approximately equal. VERIFY RFPT operating normally. VERIFY RPV level steady near +35".		

*Critical Step

#Critical Sequence

@Alternate Path

PERFORMANCE CHECKLIST

Appl. To/JPM No.: 45.OP.017.101

Student Name: _____

Step	Action	Standard	Eval	Comments
@13.	<p>Place the controller in AUTO.</p> <p>NOTE: When SIC-C32-1R601A AUTO pushbutton is depressed, INSERT controller malfunction : IMF CN02:SICC3R601A 100 90 (output slowly raises to maximum). This will prohibit the RFP "A", "B", and "C" discharge flows from being matched. Manual control must be taken to match the discharge flows of the operating RFPs.</p>	<p>DEPRESS RFPT "A" SPD CTL/DEMAND SIGNAL SIC-C32-1R601A AUTO pushbutton.</p> <p>OBSERVE GREEN light ON.</p> <p>OBSERVE AMBER light OFF.</p>		

*Critical Step

#Critical Sequence

@Alternate Path

TASK CONDITIONS:

- A. The unit was operating at 100 percent reactor power.
- B. You have been assigned as the PCO Unit and will operate 1C651 controls.
- C. During the runback AR-101-B16, RFPT Control Signal Failure, annunciator alarmed.
- D. HYD JACK of RFPT "A" was engaged IAW ON-145-001 and the RFPT is being controlled by the MSC.
- E. I&C has informed the Unit Supervisor that the control signal problem has been corrected.

INITIATING CUE:

Restore RFPT "A" control to the EAP in automatic per OP-145-001, section 3.16.4.

TASK CONDITIONS:

- A. The unit was operating at 100 percent reactor power.
- B. You have been assigned as the PCO Unit and will operate 1C651 controls.
- C. During the runback AR-101-B16, RFPT Control Signal Failure, annunciator alarmed.
- D. HYD JACK of RFPT "A" was engaged IAW ON-145-001 and the RFPT is being controlled by the MSC.
- E. I&C has informed the Unit Supervisor that the control signal problem has been corrected.

INITIATING CUE:

Restore RFPT "A" control to the EAP in automatic per OP-145-001, section 3.16.4.

JPM-3

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

S/RO 50.OP.005.153 00 01/20/00 217000 3.8
 Appl To JPM Number Rev No. Date NUREG 1123 Sys. No. K/A

Task Title: Perform a Recovery from a RCIC System Turbine Trip with an Initiation Signal Present
in Accordance With OP-150-001 (Alternate Path)

Completed By: Sidney W. Morgan 01/20/00 Rich Chin 06/25/01
 Writer Date Instructor/Writer Date

Approval:
 6/27/01 6/26/01
 Requesting Supv./C.A. Head Date Nuclear Training Supv. Date

Date of Performance: _____ 25 Min _____
 Allowed Time (Min) Time Taken (Min)

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

Performance Evaluation: () Satisfactory () Unsatisfactory

Evaluator Name: _____
 Signature Typed or Printed

Comments:

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 50.OP.005.153**

I. SAFETY CONSIDERATIONS

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

II. REFERENCES

OP-150-001, RCIC System

III. REACTIVITY MANIPULATIONS

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

None

IV. TASK CONDITIONS

- A. A reactor scram condition exists, vessel water level is below the RCIC automatic initiation level (-30 inches), and RCIC injection is required to maintain vessel inventory.
- B. RCIC initially actuated, but tripped on exhaust pressure, due to a slow opening check valve.
- C. ESW System is in operation.
- D. RCIC pump discharge piping has been maintained, filled, and pressurized.
- E. MOV Thermal Overload bypass will not be required to be positioned to the "TEST" position.
- F. Suppression Pool Cooling was in operation.

V. INITIATING CUE

Reset the RCIC turbine trip and establish injection to the reactor vessel at 580 – 620 gpm.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 50.OP.005.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>Evaluator</u></p> <ul style="list-style-type: none"> • This JPM should be performed in the SIMULATOR. • To set up the Simulator: <ul style="list-style-type: none"> - Override HPCI off. - Lower RPV level until RCIC Initiates. - Depress the Trip pushbutton. - Maintain level ≈50 inches. - Enter the following malfunction IMF MV06:HV149013 "F013 valve fails to open." - Place the Simulator in Freeze. 			
1.	Obtain a controlled copy of OP-150-001.	Obtains a controlled copy of OP-150-001, Section 3.10.		
2.	Review procedural precautions.	Reviews and adheres to prerequisites and precautions.		
3.	Select the correct section to perform.	Selects Section 3.10.6.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 50.OP.005.153

Student Name: _____

Step	Action	Standard	Eval	Comments
*4.	Relatch the RCIC turbine trip and throttle valve HV-105012.	Takes and holds the control switch for RCIC Turbine Trip and Throttling HV-15012 in the CLOSE position until the valve and the turbine supervisory amber lights are illuminated.		
*5.	Place the RCIC flow controller in Manual at minimum demand.	Places the manual/auto slide switch on RCIC turbine flow control FC-E51-1R600 in the M position. Depresses the CLOSE pushbutton until the controller output meter indicates zero.		
6.	Ensure the lube oil cooling water isolation valve is open.	Checks that RCIC L-O Clg Wtr HV-150-F046 is OPEN. <ul style="list-style-type: none"> • Confirm red OPEN light illuminated. • Confirm amber closed light extinguished. 		
7.	Ensure the barometric condenser vacuum pump is running.	Checks that the RCIC Baro Cdsr Vacuum pp 1P219 is running. <ul style="list-style-type: none"> • Confirm red ON light illuminated. • Confirm amber OFF light extinguished. 		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 50.OP.005.153

Student Name: _____

Step	Action	Standard	Eval	Comments
*8.	Start up the RCIC turbine	Takes and holds the control switch for RCIC Turbine Trip and Throttling HV-15012 in the OPEN position until: <ul style="list-style-type: none"> • Turbine supervisory and the valve red indicating lights are illuminated. • Turbine supervisory and the valve amber indicating lights are extinguished. 		
9.	Observe RCIC turbine accelerates. <u>FAULT STATEMENT</u> F013 VALVE FAILS TO AUTO OPEN.	Checks RCIC turbine speed accelerates to about 1,000 rpm.		
*10.	Ensure that the injection valve opens.	<ul style="list-style-type: none"> • Checks that RCIC Injection HV-149-F013 OPENS. • Manually OPEN HV-149-F013. 		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 50.OP.005.153 _____

Student Name: _____

Step	Action	Standard	Eval	Comments
*11.	Establish the desired flowrate. <u>Evaluator</u> As the OPEN pushbutton is depressed, the following will occur: <ul style="list-style-type: none"> • Turbine speed will increase. • Pump discharge pressure will increase. • Minimum flow valve FV-149-F019 will open at about 190 psig. • When pump discharge pressure exceeds reactor pressure, RCIC flow will increase. • AR-108-E02, RCIC PUMP DISCHARGE L-O FLW, clears when flow >75 gpm. • Min Flow to Supp Pool FV-149-F019 closes when flow >150 gpm. 	Depresses open pushbutton on RCIC turbine flow control FC-E51-1R600 to achieve 580-620 gpm RCIC flow.		
12.	Ensures that RCIC min flow valve opens.	Observes Min Flow to Supp Pool FV-149-F019 OPENS when pump discharge pressure is >190 psig and flow <75 gpm.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 50.OP.005.153

Student Name: _____

Step	Action	Standard	Eval	Comments
13.	Ensure that the RCIC min flow valve closes when pump flow is >150 gpm.	Observes RCIC Min Flow to Supp Pool FV-150-F019 CLOSES when flow >150 gpm.		
14.	Place the RCIC flow controller in automatic.	When flow is 580 - 620 gpm: <ul style="list-style-type: none"> • Adjusts RCIC turbine flow control FC-E51-1R600 thumbwheel until deviation indication is in green band. • Places the manual/auto selector slide switch in the A position. 		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. A reactor scram condition exists, vessel water level is below the RCIC automatic initiation level (-30 inches), and RCIC injection is required to maintain vessel inventory.
- B. RCIC initially actuated, but tripped on exhaust pressure, due to a slow opening check valve.
- C. ESW System is in operation.
- D. RCIC pump discharge piping has been maintained, filled, and pressurized.
- E. MOV Thermal Overload bypass will not be required to be positioned to the "TEST" position.
- F. Suppression Pool cooling was in operation.

INITIATING CUE

Reset the RCIC turbine trip and establish injection to the reactor vessel at 580 - 620 gpm.

TASK CONDITIONS

- A. A reactor scram condition exists, vessel water level is below the RCIC automatic initiation level (-30 inches), and RCIC injection is required to maintain vessel inventory.
- B. RCIC initially actuated, but tripped on exhaust pressure, due to a slow opening check valve.
- C. ESW System is in operation.
- D. RCIC pump discharge piping has been maintained, filled, and pressurized.
- E. MOV Thermal Overload bypass will not be required to be positioned to the "TEST" position.
- F. Suppression Pool cooling was in operation.

INITIATING CUE

Reset the RCIC turbine trip and establish injection to the reactor vessel at 580 - 620 gpm.

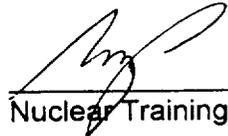
JPM 4

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

S/RO 73.EO.001.101 1 06/19/01 223001 A2.07 4.2
 Appl To JPM Number Rev No. Date NUREG 1123 Sys. No. K/A

Task Title: Venting Drywell Within Offsite Release Limits - ES-173-001, Section 4.2
Vent Suppression Chamber Using Two Inch Vent Bypass to SGTS

Completed By: Edwin Bowles 06/19/01 Rich Chin 06/20/01
 Writer Date Instructor/Writer Date

Approval:  6-27-01  6/27/01
 Requesting Supv./C.A. Head Date Nuclear Training Supv. Date

Date of Performance: _____ 20 Min _____
 Allowed Time (Min) Time Taken (Min)

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

Performance Evaluation: () Satisfactory () Unsatisfactory

Evaluator Name: _____
 Signature Typed or Printed

Comments:

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

I. SAFETY CONSIDERATIONS

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

II. REFERENCES

- A. ES-173-001 Venting Suppression Chamber Within Offsite Release Limits

III. REACTIVITY MANIPULATIONS

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

None

IV. TASK CONDITIONS

- A. A small break LOCA has occurred.
- B. The Reactor is at 650 psig and shut down with all control rods full in.
- C. The TSC has determined it is necessary to vent the Suppression Chamber restricted to TS release limits.
- D. ES-173-001, Section 4.2, is completed by the US up to and including step 4.2.4.b(1):
 - Step 4.2.1: Chemistry obtained a Suppression Chamber Noble Gas sample per SC-173-001. Sample result is 3E-7uci/cc.
 - Step 4.2.2: SGTS SPING is operable.
 - Step 4.2.3: SGTS is operating per OP-070-001.
 - Step 4.2.4.a(1): US confirmed that the Noble Gas sample obtained in step 4.2.1 is within the limits specified for venting within TS release limits.
 - Step 4.2.4.b(1): US determined that this step is NOT APPLICABLE.

V. INITIATING CUE

Vent the Suppression Chamber (restricted to TS Release Limits) per ES-173-001, Section 4.2, beginning at step 4.2.4.c.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 73.EO.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p>Evaluator Prior to performing this JPM, obtain a copy of the latest revision of ES-173-001 and mark it as if it was actually to be performed. For step 4.1 indicate (initial) that section 4.2 be performed and N/A section 4.3. Complete the signature, date, and time. Indicate steps 4.2.1, 4.2.2, 4.2.3, and 4.2.4 are complete. Provide it to the student along with the Task Conditions/Initiating Cue Sheet.</p>			
1.	Review Sections 1.0 through 3.0.	Review all sections. Follows all precautions as applicable.		
2.	Notes Shift Supervisor approval to perform Step 4.2 (page 2 of 23).	Observes Shift Supervisor signature, date, and time in the appropriate location (to perform section 4.2) in Section 4.1 of the procedure.		
3.	Obtain the required equipment.	Obtains two (2) keys.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 73.EO.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
4.	Locate Panel 1C681 in the Control Room.	Correctly identifies Panel 1C681, HVAC.		
*5.	Place keylock switch for Drw/Supp Chmbr Dmp HD-17508A Iso Signal Byps in SC position. Note: Acknowledging AR127 D-7 alarm is not critical.	At Panel 1C681 places keylock switch HD-17508A in SC position. Acknowledges AR127 D-7 alarms.		
*6.	Place keylock switch for Drwl/Supp Chmbr Dmp HD-17508B Iso Signal Byps in SC position. Note: Acknowledging AR128 D-7 alarm is not critical.	At Panel 1C681, places keylock switch HD-17508B in SC position. Acknowledges AR128 D-7 alarms.		
7.	Bypass the Hi Rad SBTG Exhaust Vent Isolation. Evaluator: If asked, inform the student that venting is restricted to TS release limits; N/A step 4.2.4.d.	Determines step 4.2.4.d is not applicable.		
*8.	Open Drwl/Wetwell Burp Dmp HD-17508A.	At Panel 1C681, opens HD-17508A, Observes RED Lamp on, AMBER Lamp off.		
*9.	Open Drwl/Wetwell Burp Dmp HD-17508B.	At Panel 1C681, opens HD-17508B, Observes RED Lamp on, AMBER Lamp off.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 73.EO.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
10.	Locate Panel 1C601 in the Control Room.	Correctly identifies Panel 1C601, Reactor Core Cooling Benchboard.		
*11.	Open SUPP CHMBR VENT IB ISO HV-15703.	At Panel 1C601, opens HV-15703. Observes RED Lamp on, AMBER Lamp off.		
*12.	Open SUPP CHMBR VENT OB ISO HV-15705.	At Panel 1C601, opens HV-15705. Observes RED Lamp on, AMBER Lamp off.		
13.	Observes specific indications.	Monitors Suppression Chamber pressure on CONTAINMENT PRESSURE PR-15710A(B). Monitors SGTS SPING release rates.		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. A small break LOCA has occurred.
- B. The Reactor is at 650 psig and shut down with all control rods full in.
- C. The TSC has determined it is necessary to vent the Suppression Chamber restricted to TS release limits.
- D. ES-173-001, Section 4.2, is completed by the US up to and including step 4.2.4.b(1):

Step 4.2.1: Chemistry obtained a Suppression Chamber Noble Gas sample per SC-173-001. Sample result is $3E-7$ uci/cc.

Step 4.2.2: SGTS SPING is operable.

Step 4.2.3: SGTS is operating per OP-070-001.

Step 4.2.4.a(1): US confirmed that the Noble Gas sample obtained in step 4.2.1 is within the limits specified for venting within TS release limits.

Step 4.2.4.b(1): US determined that this step is NOT APPLICABLE.

INITIATING CUE

Vent the Suppression Chamber (restricted to TS Release Limits) per ES-173-001, Section 4.2, beginning at step 4.2.4.c.

TASK CONDITIONS

- A. A small break LOCA has occurred.
- B. The Reactor is at 650 psig and shut down with all control rods full in.
- C. The TSC has determined it is necessary to vent the Suppression Chamber restricted to TS release limits.
- D. ES-173-001, Section 4.2, is completed by the US up to and including step 4.2.4.b(1):

Step 4.2.1: Chemistry obtained a Suppression Chamber Noble Gas sample per SC-173-001. Sample result is $3E-7$ uci/cc.

Step 4.2.2: SGTS SPING is operable.

Step 4.2.3: SGTS is operating per OP-070-001.

Step 4.2.4.a(1): US confirmed that the Noble Gas sample obtained in step 4.2.1 is within the limits specified for venting within TS release limits.

Step 4.2.4.b(1): US determined that this step is NOT APPLICABLE.

INITIATING CUE

Vent the Suppression Chamber (restricted to TS Release Limits) per ES-173-001, Section 4.2, beginning at step 4.2.4.c.

JPM 5

**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-001, Operations Shift Policies.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

II. REFERENCES

- A. OP-024-001 Diesel Generator

III. REACTIVITY MANIPULATIONS

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

None

IV. TASK CONDITIONS

- A. Diesel Generator "A" was started manually from 0C653 in accordance with OP-024-001 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. An 0C521A LO PRIORITY TROUBLE alarm was received because of local alarm E-01, Standpipe Level High. The NPO lowered the standpipe level and the annunciator cleared.

V. INITIATING CUE

Manually synchronize Diesel Generator "A" with 4.16 KV Bus 1A and pick up 4,000 KW of load for a maintenance run.

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p>SETUP: Provide a completed copy of OP-024-005 Attachment A to the student. OVERRIDE ANN OC-521A, E1 to keep LO PRIORITY ANN C-10 clear. Start a second ESW Pump. Restore PREF YPP.NRCJPM.1</p> <p>NOTE: Unless otherwise stated, all controls and indicators are located on Panel OC653.</p>			
1.	Obtain a controlled copy of OP-024-001.	Controlled copy of OP-024-001 obtained.		
2.	Select the correct section to be performed.	Selects Section 3.3.		
3.	Review the prerequisites. Ensure prerequisites met.	Ensure that all prerequisites have been met.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
4.	Review the precautions. <u>Evaluator</u> If asked, inform the student that the diesel has been running for 15 minutes unloaded.	Follows the precautions as applicable.		
5.	Obtain a key for the DG synch selector switch.	Obtains a key.		
*6.	Turn the synch selector switch on. <u>Evaluator</u> When the 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. The lights will be off when the pointer is between 10° before the 12 o'clock position and 10° after the 12 o'clock position.	Places the DG "A" to Bus 1A Synch Sel HS-00039A switch in the ON position.		
*7.	Adjust diesel generator voltage.	Takes the DG "A" Voltage Adjust HS-00053A switch to the RAISE or LOWER position as required to achieve incoming volts slightly higher than Running volts on the Diesel Gen Bus Diff Volts XI-00036 meter (IN THE GREEN BAND).		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
8.	Adjust diesel generator speed. <u>Evaluator</u> The FAST direction is clockwise.	Takes the DG "A" Speed Governor HS-00054A switch to the RAISE or LOWER position to cause the Synchroscope XI-00037 pointer to rotate slowly in the FAST direction. <i>(If rotating too fast, then lower. If rotating too slowly, then raise).</i>		
*9.	Close the diesel generator output breaker. <u>Evaluator</u> <ul style="list-style-type: none"> • Both white lights will be 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). 	Takes the DG "A" to Bus 1A Bkr 1A20104 switch to the CLOSE position when the Synchroscope XI-00037 pointer is at or slightly before the 12 o'clock position. Observes red light on and amber light off.		
*10.	Pick up load on the DG.	Place and hold the DG "A" Speed Governor HS-00054A to the RAISE position, then slowly increase load over a 30-45 second period, until DG "A" Watts XI-00032A meter indicates $\geq 1,000$ KW.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
*11.	Maintain reactive load.	Maintains 0 to 900 KVARs using DG "A" voltage adjust HS-0005A. <i>(To lower KVAR, lower voltage adjust. To raise KVAR, raise voltage adjust.)</i> NOTE: Step is UNSAT if KVARs are <0 or >900 at steady state conditions.		
12.	Turn the synch selector switch off.	Places the DG "A" to Bus 1A Synch Sel HS-00039A switch in the OFF position.		
13.	<p>Check the status of the DG "A" Running Loaded light and intake air manifold temperatures.</p> <p><u>Evaluator</u> Inform the student that:</p> <ul style="list-style-type: none"> • The Running Loaded light is illuminated. • Intake air manifold temperatures will be maintained as required. 	<p>Directs a NLO to:</p> <ul style="list-style-type: none"> • Confirm that the Running Loaded light is illuminated. • Maintain intake air manifold temperatures per the appropriate procedure step. 		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
14.	Wait for five minutes. <u>Evaluator</u> Inform the student that five minutes have elapsed.	Waits for five minutes.		
*15.	Increase load to approximately 2,000 KW.	Using the DG "A" Speed Governor HS-00054A switch, slowly increase load until DG "A" Watts XI-00032A meter indicates 1800-2200 KW.		
*16.	Maintain DG VARS as close to 0 as possible on the positive side.	Using the DG "A" Voltage Adjust HS-00053A switch (as necessary) maintains DG "A" KVARs close to 0. <i>(To lower KVAR, lower voltage adjust. To raise KVAR, raise voltage adjust.)</i> NOTE: Step is UNSAT if KVARs are <0 or >900 at steady state conditions.		

*Critical Step

#Critical Sequence

@Alternate Path

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
20.	Waits for 10 minutes. <u>Evaluator</u> Inform the student that 10 minutes have elapsed.	States the requirement to wait for 10 minutes.		
*21.	Increase load to approximately 4,000 KW.	Using the DG "A" Speed Governor HS-00054A switch, slowly increase load over a 30-45 second period until DG "A" Watts XI-00032A meter indicates 3600 - 4000 KW.		
*22.	Maintain DG VARS as close to 0 as possible on the positive side.	Using the DG "A" Voltage Adjust HS-00053A switch as necessary, maintain DG "A" KVARs close to 0. <i>(To lower KVAR, lower voltage adjust. To raise KVAR, raise voltage adjust.)</i> NOTE: Step is UNSAT if KVARs are <0 or >900 at steady state conditions.		

*Critical Step

#Critical Sequence

@Alternate Path

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
<p><i>Alternate Path</i></p>	<p><i>NOTE: A blockage of ESW will occur in the common header just downstream of the DG Lube Oil and Jacket Water Coolers before the ESW header splits into header A and header B.</i></p> <p><i>After informed that 10 minutes have elapsed at 2000 KW load, INSERT the following:</i> OVERRIDE HVO1122A and HVO1120A red lights ON and amber lights OFF.</p> <p>IMF MV07: HVO1122A 30 IMF MV07: HVO1120A 30 (ESW valves throttled to 30%)</p>			
<p>*@18.</p>	<p>Increase load to approximately 3,000 KW.</p>	<p>Using the DG "A" Speed Governor HS-00054A switch, slowly increase load over a 30-45 second period, until DG "A" Watts XI-00032A meter indicates approximately 2800-3200 KW.</p>		
<p>*@19.</p>	<p>Maintain DG VARS as close to 0 as possible on the positive side.</p>	<p>Using the DG "A" Voltage Adjust HS-00053A switch as necessary, maintain DG "A" KVARs close to 0. (To lower KVAR, lower voltage adjust. To raise KVAR, raise voltage adjust.) NOTE: Step is UNSAT if KVARs are <0 or >900 at steady state conditions.</p>		

*Critical Step

#Critical Sequence

@Alternate Path

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
<p><i>Alternate Path</i></p>	<p><i>After AR016 H-10 alarms and student recognizes TI-0115A, ESW FROM DIESEL CLR A TEMP, is rising, MODIFY the following:</i> MMF MV07: HVO1122A 20 MMF MV07: HVO1120A 20 <i>Two (2) minutes later, MODIFY the following:</i> MMF MV07: HVO1122A 4 MMF MV07: HVO1120A 4</p>			

*Critical Step

#Critical Sequence

@Alternate Path

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
<i>Alternate Path</i>	<i>AR016 H-10 alarms and TI-0115A, ESW FROM DIESEL CLR A TEMP, is rising due to ESW flow blockage.</i>			
@20.	AR016, H-10, ESW HIGH TEMPERATURE alarms.	Acknowledge annunciator. Reference AR-016-001, H-10.		
@21.	Observe TI-0115A on OC653. (AR-016-001 H-10).	Observes TI-0115A, ESW FROM DIESEL CLR A TEMP, is rising.		
*@22.	<p>If DG not needed, unload the DG until problem is corrected.</p> <p><u>Evaluator:</u> If asked, direct the student to unload the DG to 300 to 500 KW, disconnect the DG, and stop the DG from Panel OC653.</p> <p><u>Evaluator:</u> If asked if DG is needed, inform the student that the DG is not needed.</p> <p><u>Evaluator:</u> If asked for the cause, inform the student that the cause is not known at this time.</p>	<p>Perform either of the following actions to secure the DG:</p> <p>1. REDUCE load to 300 - 500 KW using DG "A" Speed Governor HS-00054A <u>AND</u> OPEN DG A Bus 1A Bkr 1A20104. Observe amber light on, red light off <u>AND</u> Depress DG A STOP pushbutton.</p> <p><u>OR</u></p> <p>2. Depress DG A STOP pushbutton.</p> <p><u>OR</u></p> <p>3. Direct NPO to take LOCAL control and press EMERG STOP.</p>		

*Critical Step

#Critical Sequence

@Alternate Path

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
<p><i>Alternate Path</i></p> <p>@23.</p> <p>@24.</p>	<p><i>AR016 H-10 alarms and TI-0115A, ESW FROM DIESEL CLR A TEMP, is rising due to ESW flow blockage.</i></p> <p><i>NOTE: The following steps may or may not be required, depending upon the time it takes to shutdown DG A. If the LO PRIORITY TROUBLE (AR 015, C-10) alarm is not received, then steps @23 and A24 are not applicable.</i></p> <p>AR015, C-10, PANEL OC521A LO PRIORITY TROUBLE alarms.</p> <p>Evaluator: Report that local alarm C04, ENGINE LUBE OIL TEMP OFF NORMAL, is alarming.</p> <p>Perform the actions of LA-0521-001, C04.</p> <p>Evaluator: After two (2) minutes, report: NO flow through the lube oil cooler although the ESW and DG lineups are correct. TCV is operating correctly (fully open).</p>	<p>Acknowledge annunciator.</p> <p>Reference AR-015-001, C-10.</p> <p>Request NPO to report local alarm and investigate.</p> <p>Checks ESW lineup at Panel OC653.</p> <p>Directs NPO to check flow to lube oil cooler and ESW lineup locally.</p> <p>Directs NPO to check TCV-0345A operation.</p> <p>Directs NPO to monitor lube oil temperatures.</p>		

*Critical Step

#Critical Sequence

@Alternate Path

TASK CONDITIONS

- A. Diesel Generator "A" was started manually from 0C653 in accordance with OP-024-001 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. An 0C521A LO PRIORITY TROUBLE alarm was received because of local alarm E-1, Standpipe Level High. The NPO lowered the standpipe level and the annunciator cleared.

INITIATING CUE

Manually synchronize Diesel Generator "A" with 4.16 KV Bus 1A and pick up 4,000 KW of load for a maintenance run.

TASK CONDITIONS

- A. Diesel Generator "A" was started manually from 0C653 in accordance with OP-024-001 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. An 0C521A LO PRIORITY TROUBLE alarm was received because of local alarm E-01, Standpipe Level High. The NPO lowered the standpipe level and the annunciator cleared.

INITIATING CUE

Manually synchronize Diesel Generator "A" with 4.16 KV Bus 1A and pick up 4,000 KW of load for a maintenance run.

JPM 6

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 78.AR.003.103**

I. SAFETY CONSIDERATIONS

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

II. REFERENCES

- A. AR-103-001, RPS Division 1 1C651
- B. AR-104-001, RPS Division 2 1C651

III. REACTIVITY MANIPULATIONS

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

None

IV. TASK CONDITIONS

- A. The Plant is in Mode 2.
- B. You are the PCOM.
- C. A Reactor startup is in progress in accordance with GO-100-002, Step 6.60

V. INITIATING CUE

Annunciators AR-103-A01, AR-103-A04, AR-104-A05, AR-104-B05, and AR-104-H03 have alarmed.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 78.AR.003.103

Student Name: _____

Step	Action	Standard	Eval	Comments
1.	<p><u>Evaluator</u> You must select the IRM Channel (A, C, E, or G) that you want failed. When the IRM fails upscale, the lights Upsc Tr or Inop and Upscale Alarm, located above the range switch of the failed IRM will illuminate.</p> <p>Refer to the applicable Annunciator Response (AR) Procedure(s).</p> <p><u>Evaluator</u> The student is not required to refer to all ARs, and therefore, may not do so in this case. However, it is the responsibility of the student to perform those actions that will determine the problem and the correct response.</p>	<p>IC 10 is to be used. When ready to insert malfunction: IMF NM178004A/C/E/G 125</p> <p>Selects Procedures AR-103-001 and/or AR-104-001.</p>		
*2.	<p>Determine the IRM channel(s) causing the alarm.</p> <p><u>Evaluator</u> When the CRT is checked, inform the student that the selected channel indication is upscale and red, or insert the required malfunction to allow the student to observe actual Plant indications if this JPM is performed in the Simulator.</p> <p><u>NOTE</u> The following required actions are directed by multiple AR procedures and may not be performed in any specific order. All automatic actions should be verified prior to bypassing the APRM and resetting the half-scrum.</p>	<p>Determine the affected channel by observing the CRT or the recorders on 1C652.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 78.AR.003.103

Student Name: _____

Step	Action	Standard	Eval	Comments
3.	<p>Verify automatic actions have occurred as required.</p> <p><u>Evaluator</u> Inform the student that no Scram Valves are open and no rods are mispositioned.</p> <p><u>Evaluator</u> When student has requested I&C support or informed the Shift Supervision, report that I&C will investigate the problem.</p> <p><u>Evaluator</u> When the student request SS permission to bypass the IRM, grant permission to bypass the IRM.</p>	<ul style="list-style-type: none"> • Verify half scram on Division 1 of RPS. • Visually check the Full Core Display for Scram Valve OPEN indication. • Initiate OD-7 Option 3 to check for mispositioned rods. • Ensure IRM Range Switch is in the proper position. • Request that an operational check of the IRM be performed to determine if calibration is required. 		
*4.	<p>Bypass the failed IRM.</p> <p><u>Evaluator</u> When the Bypass Switch for the correct IRM is placed in BYPASS, the following annunciators clear:</p> <ul style="list-style-type: none"> • AR-103-A04 • AR-104-A05 • AR-104-B05 • AR-104-H03 	<p>Place the IRM Channel Bypass switch in BYPASS for the affected IRM.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 78.AR.003.103

Student Name: _____

Step	Action	Standard	Eval	Comments
*5.	<p>Reset the Half-Scram.</p> <p><u>Evaluator</u> The position to which the reset switch is initially placed is not important, as long as the half-scram is reset.</p> <p><u>Evaluator</u> Inform the student to stop here.</p>	<p>Place the REACTOR SCRAM RESET Switch to RESET GR 1/4 and GR 2/3 position.</p> <p>Reset annunciators (not critical).</p>		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. The Plant is in Mode 2.
- B. You are the PCOM.
- C. A Reactor startup is in progress in accordance with GO-100-002, Step 6.60.

INITIATING CUE

Annunciators AR-103-A01, AR-103-A04, AR-104-A05, AR-104-B05, and AR-104-H03 have alarmed.

TASK CONDITIONS

- A. The Plant is in Mode 2.
- B. You are the PCOM.
- C. A Reactor startup is in progress in accordance with GO-100-002, Step 6.60.

INITIATING CUE

Annunciators AR-103-A01, AR-103-A04, AR-104-A05, AR-104-B05, and AR-104-H03 have alarmed.

JPM 7

**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-001, Operations Shift Policies.
- B. All applicable safety precautions shall be taken in accordance with established PP&L safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.

II. REFERENCES

ES-134-001, Restoring Drywell Cooling with a LOCA Signal Present

III. REACTIVITY MANIPULATIONS

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

None

IV. TASK CONDITIONS

- A. The reactor scrammed due to a small break inside the primary containment.
- B. Drywell pressure is ~ 8 psig, temperature is ~190° F and rising.
- 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.

V. INITIATING CUE

Reset Drywell Cooling Logic isolations and restore Drywell Cooling in accordance with ES-134-001, Step 4.3.

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>Evaluator</u> This JPM should be performed on the simulator. Set up the simulator by selecting a 100 percent Power IC, insert a small break LOCA (IMF RR164010 2). When reactor scrams on high drywell pressure, perform all scram actions and place HPCI on min flow. Perform Steps 4.2 of ES-134-001 (bat PCB.ES134001). Place the simulator in Freeze. Provide the student with a signed and marked up copy of the ES showing completion through 4.2.</p>			
1.	Review Sections 1.0 through 3.0.	Reviews all sections.		
2.	Check for approval in Section 4.0.	Observes Shift Supervisor approval at Step 4.1.		
3.	Verify applicable steps in 4.2 are complete.	Verifies sign-offs for booting/ jumpering of relays in 4.2.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
4.	<p>Confirm applicable automatic actions have occurred prior to resetting.</p> <p>Amber lights ON Red Lights OFF</p> <p><u>Evaluator</u> If asked, inform student that ES-184-002, Reopening MSIVs Bypassing Isolations, has NOT been performed.</p>	<p>Confirms the following valves closed:</p> <ul style="list-style-type: none"> • A CLR CLG WTR OB ISO VLV HV-18781A1 • A CLR CLG WTR OB ISO VLV HV-18781A2 • A CLR CLG WTR IB ISO VLV HV-18782B1 • A CLR CLG WTR IB ISO VLV HV-18782B2 • B CLR CLG WTR OB ISO VLV HV-18781B1 • B CLR CLG WTR OB ISO VLV HV-18781B2 • B CLR CLG WTR IB ISO VLV HV-18782A1 • B CLR CLG WTR IB ISO VLV HV-18782A2 <p>ON PNL 1C601</p> <ul style="list-style-type: none"> • INSTR GAS TO CONTN ISO SV-12651 • INSTR GAS CMP 1B SUCT ISO SV-12603 • INSTR GAS CMP OB SUCT ISO SV-12605 		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
*5.	<p>Reset the drywell cooling logic.</p> <p><u>Note:</u> Observing green light extinguished is not critical.</p> <p><u>Note:</u> Observing green light extinguished is not critical.</p> <p><u>Note:</u> Observing white light extinguished is not critical.</p> <p><u>Note:</u> Observing white light extinguished is not critical.</p>	<p>At 1C601:</p> <ul style="list-style-type: none"> • Depresses CHAN A DRWL CLG HS-14141A RESET pushbutton. • Observes the green light above the pushbutton extinguishes. • Depresses CHAN B DRWL CLG HS-14141B RESET pushbutton. • Observes the green light above the pushbutton extinguishes. <p>At 1C681:</p> <ul style="list-style-type: none"> • Depresses CHAN A RBCW ISO VALVE POS RESET HS-14140A. • Observes the white light above the pushbutton extinguishes. • Depresses CHAN B RBCW ISO VALVE POS RESET HS-14140B. • Observes the white light above the pushbutton extinguishes. 		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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

Student Name: _____

Step	Action	Standard	Eval	Comments
6.	Ensure drywell cooling valves open after isolation reset. Red Lights ON Amber Lights OFF	At 1C681, ensures following are open: • 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		
*7.	Restore CIG 90# Header. <u>Evaluator</u> If asked, inform student that IA has been restored. <u>Evaluator</u> As NPO, inform student that CIG has been restarted. <u>Evaluator</u> Restoration of RBCW is not required as part of this JPM.	Restores CIG System: • Opens INSTR GAS CMP IB SUCT ISO HV-12603. • Opens INSTR GAS CMP OB SUCT ISO SV-12605. • Directs NPO to restart the CIG compressors. • Open INSTR GAS TO CONTN ISO SV-12651.		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. The reactor scrammed due to a small break inside the primary containment.
- B. Drywell pressure is ~ 8 psig, temperature is ~190° F and rising.
- 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.

INITIATING CUE

Reset Drywell Cooling Logic isolations and restore Drywell cooling in accordance with ES-134-001, Step 4.3.

TASK CONDITIONS

- A. The reactor scrammed due to a small break inside the primary containment.
- B. Drywell pressure is ~ 8 psig, temperature is ~190° F and rising.
- 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.

INITIATING CUE

Reset Drywell Cooling Logic isolations and restore Drywell cooling in accordance with ES-134-001, Step 4.3.

JPM-8

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

S/RO 00.ON.015.103 1 06/19/01 295016 4.0
 Appl To JPM Number Rev No. Date NUREG 1123 Sys. No. K/A

Task Title: Perform Manual Operation of the ADS Valves from the Remote Shutdown Panels or Relay Rooms as Required by ON-100-009 (Alternate Path)

Completed By:

Reviews:

Edwin Bowles
 Writer

06/19/01
 Date

Rich Chin
 Instructor/Writer

06/26/01
 Date

Approval:


 Requesting Supv./C.A. Head

6-28-01
 Date


 Nuclear Training Supv.

6/27/01
 Date

Date of Performance:

25 Min
 Allowed Time (Min)

_____ Time Taken (Min)

JPM Performed By:

_____ Last

_____ First

_____ M.I.

_____ Employee #/S.S. #

Performance Evaluation: () Satisfactory () Unsatisfactory () Normal () Alternate

Evaluator Name:

_____ Signature

_____ Typed or Printed

Comments:

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 00.ON.015.103**

I. SAFETY CONSIDERATIONS

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

II. REFERENCES

- A. ON-100-009 Plant Shut Down from Outside Control Room

III. REACTIVITY MANIPULATIONS

None

IV. TASK CONDITIONS

- A. At the Remote Shutdown Panel
- B. An incident has occurred, which has required the Control Room to be abandoned.
- C. Control has been transferred to the RSDP in accordance with ON-100-009.
- D. HPCI is operating
- E. Reactor pressure is 890 psig and stable.
- F. MSIVs are closed.
- G. The Shift Supervisor has directed that SRVs be used for a plant cooldown.

V. INITIATING CUE

Lower RPV pressure as necessary to initiate a reactor cooldown NOT to exceed 90°F per hour from the present conditions, in accordance with ON-100-009.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 00.ON.015.103

Student Name: _____

Step	Action	Standard	Eval	Comments
1.	Obtains a controlled copy of ON-100-009, including Attachments A and B.	Obtains a controlled copy or section 4.6.3 of ON-100-009, including Attachments A and B.		
2.	Ensures Instrument Gas Valves to the Containment and Instrument Gas Compressor are OPEN Evaluator: Indicate for SV-12651 and SV-12605, Red OPEN light ON and amber CLOSED light OFF.	SV-12651 indicates OPEN. Red OPEN light is ON. Amber CLOSED light is OFF. SV-12605 indicates OPEN. Red OPEN light is ON. Amber CLOSED light is OFF.		
3.	Ensures CIG Air Compressor operating. Evaluator: Inform candidate that the CIG Compressors have been reset at local panel 1C239 and are running.	Acknowledges confirmation that the CIG compressors are running.		
4.	Review ON-100-009, Attachment A to determine current reactor temperature and desired reactor pressure and temperature. Evaluator: Indicate reactor pressure is 890 psig. Alternate Path SRVs fail to open from the Remote Shutdown Panel	RPV pressure at 890 psig, reactor temperature is 528°F. Cooldown rate of 90°F/hr lowers equates to RPV pressure 380 psig. Should be over 1 hour, so a target pressure ≥380 psig is selected.		
5.	Alternately attempts to OPEN SRVs A, B or C and determines they do NOT OPEN. Evaluator: Indicate for SRVs A, B, C as applicable, Red OPEN light OFF. Indicate RPV pressure constant at 890 psig.	Place switches for SRVs A, B, or C to OPEN, determines SRV does NOT OPEN by observing Red OPEN indication remains OFF and reactor pressure does NOT change.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 00.ON.015.103

Student Name: _____

Step	Action	Standard	Eval	Comments
6.	<p>Notifies SRO that A, B, or C SRV will NOT Open.</p> <p><u>Evaluator</u> Acknowledge as SRO and inform the candidate to perform the necessary procedural actions to complete the task. Inform the operator that permission is granted to leave the RSDP – another operator will assume the RSDP station. (Operation of the ADS valves from the Relay Room consists of switch manipulation and monitoring cooldown rate while maintaining communication with the RSDP Room. There are six keylock switches in each Relay Room; the operator may select either the Upper or the Lower Relay Room to perform this JPM).</p>	<p>Notifies SRO SRVS will NOT Open.</p>		
*7.	<p>Simulate obtaining keys for SRVs from Pink sound powered phone box, labeled "JP1207, JP1402, JP2201".</p> <p><u>Evaluator</u> The keys are in the Pink sound powered phone box in the RSDP Room.</p>	<p>Demonstrate the ability to find keys labeled "JP1207, JP1402, JP2201"</p>		
*8.	<p>Go to the selected Relay Room, locates Panel 1C 631 or Panel 1C 628.</p>	<p>Locates Panel 1C 631 in the Upper Relay Room or Panel 1C 628 in the Lower Relay Room.</p>		
*9.	<p>Simulates establishing communication with the RSDP Room.</p>	<p>Establishes communication with the RSDP Room (simulate) using sound-powered phone <u>or</u> page.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 00.ON.015.103

Student Name: _____

Step	Action	Standard	Eval	Comments
*10.	Simulates inserting key and rotating switch to the OPEN position. Verifies Red OPEN indication is ON <u>Evaluator:</u> Indicate the Red OPEN light is ON. Indicate RPV pressure is lowering and the previously indicated desired pressure is reached.	Simulates placing any ADS keylock switch in the OPEN position. Verifies SRV open by verifying Red OPEN indicating light is ON.		
*11.	Simulates rotating switch to the AUTO position.	Simulates returning the keylock switch to the AUTO position.		
12.	Verifies Red OPEN indicating light is OFF. <u>Evaluator:</u> Indicate the Red OPEN light is OFF. Indicate RPV pressure is constant at the pressure indicated when the SRV was closed. This JPM is complete.	Verifies the Red OPEN indicating light is OFF.		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. At the Remote Shutdown Panel
- B. An incident has occurred, which has required the Control Room to be abandoned.
- C. Control has been transferred to the RSDP in accordance with ON-100-009.
- D. HPCI is operating
- E. Reactor pressure is 890 psig and stable.
- F. MSIVs are closed.
- G. The Shift Supervisor has directed that SRVs be used for a plant cooldown.

INITIATING CUE

Lower RPV pressure as necessary to initiate a reactor cooldown NOT to exceed 90°F per hour from the present conditions.

TASK CONDITIONS

- A. At the Remote Shutdown Panel
- B. An incident has occurred, which has required the Control Room to be abandoned.
- C. Control has been transferred to the RSDP in accordance with ON-100-009.
- D. HPCI is operating
- E. Reactor pressure is 890 psig and stable.
- F. MSIVs are closed.
- G. The Shift Supervisor has directed that SRVs be used for a plant cooldown.

INITIATING CUE

Lower RPV pressure as necessary to initiate a reactor cooldown NOT to exceed 90°F per hour from the present conditions.

CONFIRM

CAUTION

FIRES IN THE CONTROL ROOM COULD CAUSE AN INADVERTENT AND UNCONTROLLED RPV INJECTION FROM EITHER CONDENSATE, CORE SPRAY, OR THE RHR DIVISION NOT INSTALLED ON THE RSP. THE SRV DISCHARGE PIPING HAS BEEN ANALYZED FOR THE LOADING CONDITIONS THAT WILL RESULT FROM THIS CONDITION. TO MINIMIZE THE LOADS ON THE SRV DISCHARGE PIPING, ASSURE THAT AN SRV IS OPEN AS RPV PRESSURE IS BEING REDUCED AND THE RPV PRESSURE APPROACHES THE SHUTOFF HEAD FOR EACH OF THESE SYSTEMS (CONDENSATE APPROXIMATELY 600 PSIG; CORE SPRAY AND RHR APPROXIMATELY 300 PSIG). SHOULD CONDENSATE BEGIN TO INJECT, MONITOR RPV LEVEL TO ASSURE THAT THE FIRE HAS NOT DAMAGED THE FW LO LOAD CONTROLLER PRIOR TO CLOSING THE SRV.

4.6 To control reactor pressure PERFORM following:

(¹) NOTE: Relief mode for SRV's A, B, and C, will not auto initiate when applicable Control Transfer Switches are in EMERG position, however, safety function is always operable. Also, when SRV Transfer Switches are in EMERG spurious auto actuation is prevented due to a Control Room fire.

4.6.1 ENSURE following valves OPEN:

a. INSTR GAS TO CONTN ISO SV-12651. _____

b. INSTR GAS CMP OB SUCT ISO SV-12605. _____

CAUTION

LEVEL 1 (-129") OR HIGH DRYWELL PRESSURE (1.72 PSIG) LOCA ISOLATION SIGNAL IS DEFEATED FOR CIG VALVES WHEN CONTROLLED FROM THE REMOTE SHUTDOWN PANEL.

NOTE: Placing Transfer Switch U, HSS-15114B, in EMERG causes instr gas cmp OB suction to cycle possibly tripping CIG compressors on low suction pressure.

4.6.2 If CIG Compressors tripped, RESET as follows at 1C239:

a. DEPRESS Logic Reset Push button. _____

b. ENSURE CIG Compressor STARTS. _____

CONFIRM

(^{1.4[70]}) 4.6.3 OPERATE SRV's as follows:

CAUTION (1)

IF RPV PRESSURE DROPS BELOW 650 PSIG, CONDENSATE PUMPS WILL INJECT WHEN RPV LEVEL < +35 INCHES.

CAUTION (2)

WIDE RANGE LEVEL INDICATION BECOMES LESS ACCURATE AS RPV PRESSURE DECREASES.

a. OPEN SRV's A,B, and C as needed. _____

NOTE: Keys to operate SRVs are located in sealed Pink sound powered phone storage box, labeled "JP1207, JP1402, JP2201", inside the Remote Shutdown Panel Room.

b. If pneumatic supply to SRV's A, B, and C not available, OPERATE SRV's G, J, K, L, M, or N (ADS valves) individually from upper(lower) relay room Panel 1C628 (1C631) using keylock switches. _____

c. REFER to Attachment A for RPV Pressure/Temperature Correlation. _____

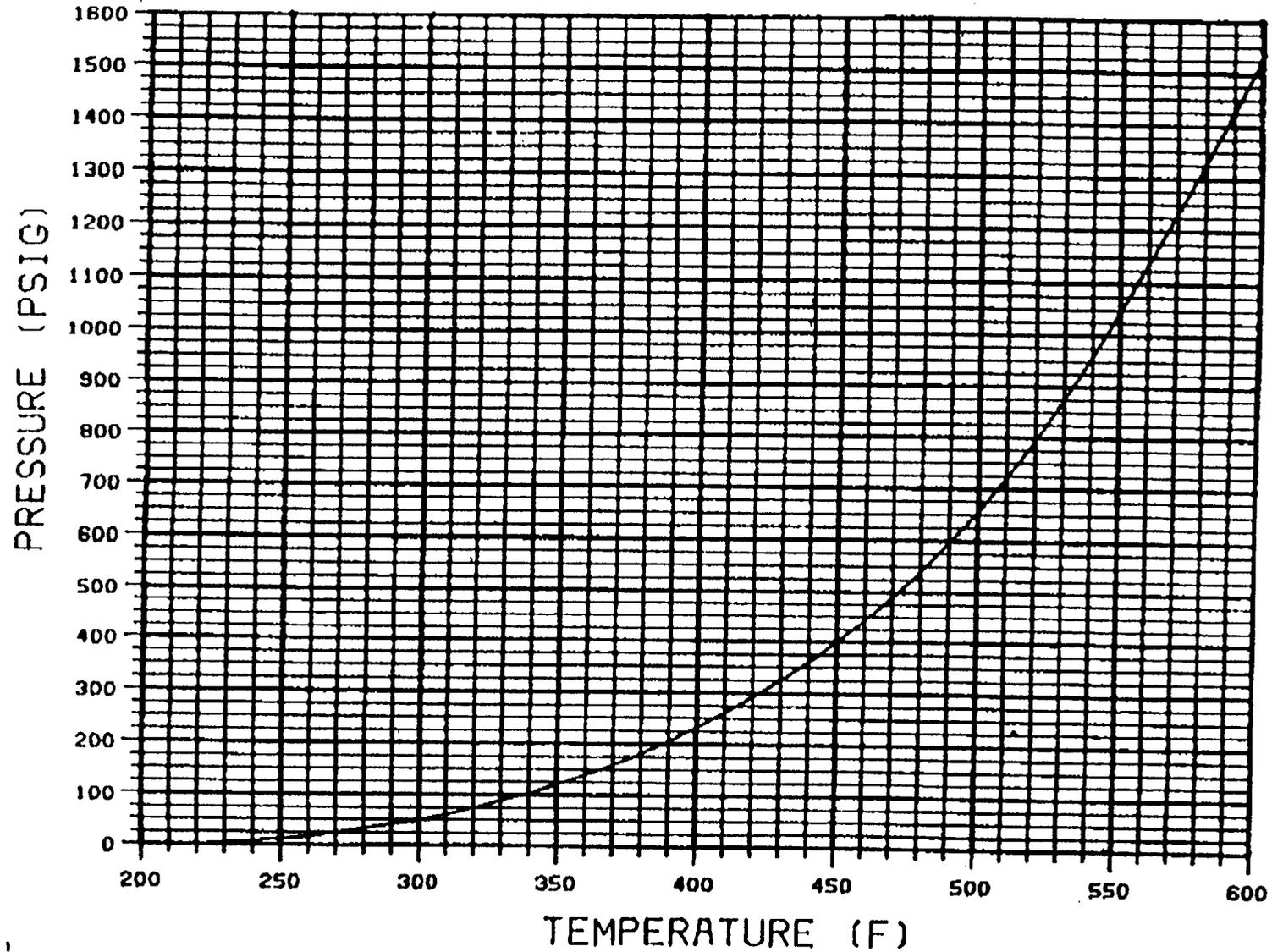
4.6.4 PLOT cooldown in accordance with Attachment A and B. _____

CAUTION

RCIC WILL NOT TRIP ON HIGH VESSEL LEVEL +54".

a. When desired to place shutdown cooling in service, RAISE RPV water level to 90 - 100 inches. _____

PRESSURE VS TEMPERATURE FOR SATURATED STEAM



JPM 9

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 00.EO.017.101**

I. SAFETY CONSIDERATIONS

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

II. REFERENCES

- A. EO-100-113, Level/Power Control Sheet 2; Control Rod Insertion

III. REACTIVITY MANIPULATIONS

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

None

IV. TASK CONDITIONS

- A. Unit 1 has just received a reactor scram signal, however RPS has failed to actuate.
- B. All control rods are withdrawn and power is ~23%.
- C. Both channels of RPS are energized.
- D. Manual initiation of ARI has failed to depressurize the Scram Air Header.

V. INITIATING CUE

Vent the Scram Air Header to insert control rods.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 00.EO.017.101

Student Name: _____

Step	Action	Standard	Eval	Comments
1.	Review EO-100-113, Sheet 2. <u>Evaluator:</u> Procedural guidance for performing this evolution is directed by the PCO.	EOP reviewed.		
*2.	Isolate the Scram Air Header. <u>Evaluator:</u> As the PCO, direct the operator to close SCRAM AIR SUPPLY valves 147002A and 147002B. Note: Only one valve is normally open, the other valve should be checked closed.	Simulates CLOSING SCRAM AIR SUPPLY valves 147002A and 147002B.		
*3.	Vent off the Scram Air Header. <u>Evaluator:</u> As the PCO, direct the operator to uncap and open SCRAM AIR HDR VENT valve 147007.	Simulates uncapping and opening SCRAM AIR HDR VENT valve 147007.		
4.	Verify air is being vented. <u>Evaluator:</u> Inform student that air is being vented.	Check for air at discharge vent.		
5.	Notify Control Room that Air Header is vented. <u>Evaluator:</u> Inform student Control Room has been notified and all control rods have inserted.	Contact Control Room by radio or page that air is venting from the 147007 valve.		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. Unit 1 has just received a reactor scram signal, however RPS has failed to actuate.
- B. All control rods are withdrawn and power is ~23%.
- C. Both channels of RPS are energized.
- D. Manual initiation of ARI has failed to depressurize the Scram Air Header.

INITIATING CUE

Vent the Scram Air Header to insert control rods.

TASK CONDITIONS

- A. Unit 1 has just received a reactor scram signal, however RPS has failed to actuate.
- B. All control rods are withdrawn and power is ~23%.
- C. Both channels of RPS are energized.
- D. Manual initiation of ARI has failed to depressurize the Scram Air Header.

INITIATING CUE

Vent the Scram Air Header to insert control rods.

JPM-10

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 88.OP.188.101**

I. SAFETY CONSIDERATIONS

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

II. REFERENCES

- A. OP-188-001, 250V DC System

III. REACTIVITY MANIPULATIONS

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

None

IV. TASK CONDITIONS

- A. Battery Room Ventilation is operating per OP-030-002.
- B. Battery Charger 1D653A 250 VDC ESS Battery Charger "A" is in service supplying power to the DC bus, with float charge on the battery.
- C. 250V DC Loads are off with Status Control Tags placed on the breakers.

V. INITIATING CUE

Shutdown Battery Charger 1D653A 250 VDC ESS Battery Charger "A" per OP-188-001.

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 88.OP.188.101

Student Name: _____

Step	Action	Standard	Eval	Comments
1.	Obtain a controlled copy of OP-188-001.	Controlled copy obtained.		
2.	Selects the correct section to perform.	Select Section 3.2 of OP-188-001.		
3.	Reviews prerequisites.	Ensure prerequisites.		
4.	Reviews precautions.	Follow precautions.		
5.	Ensure bus is not loaded. Evaluator: Inform the student that all loads are off.	Per task conditions.		
6.	Ensure 250V DC loads remain off. Evaluator: Inform the student that the required Status Control tags are installed.	Per task conditions.		
7.	Recognize LCO entry is required. Evaluator: As the US/SS, acknowledge that TS 3.8.4 and 3.8.5 are to be consulted.	Inform US/SS TS 3.8.4/3.8.5 are to be consulted for required actions.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Appl. To/JPM No.: S/RO 88.OP.188.101

Student Name: _____

Step	Action	Standard	Eval	Comments
#*8.	<p><i>The following are performed at 250VDC Battery Charger "A":</i></p> <p>Remove AC power to Battery Charger "A".</p> <p><u>Evaluator:</u> Indicate 480V AC breaker is open. Indicate Charger AC INPUT is zero. Indicate LOW VOLTAGE ALARM at Panel 1L650.</p>	<p>Simulates PLACING to OPEN 480V AC breaker for Battery Charger "A" to OPEN.</p>		
#*9.	<p>Remove DC power from Battery Charger "A".</p> <p><u>Evaluator:</u> Indicate 250V DC breaker is open. Indicate Charger DC OUTPUT is zero.</p>	<p>Simulates PLACING to OPEN 250V DC breaker for Battery Charger "A".</p>		
10.	<p>Ensure battery voltage is within acceptable limits.</p> <p><u>Evaluator:</u> Indicate battery voltage at 248 volts <u>or</u> as indicated if above 220 volts.</p>	<p>Check battery voltage above 220 volts.</p>		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. Battery Room Ventilation is operating per OP-030-002.
- B. Battery Charger 1D653A 250 VDC ESS Battery Charger "A" is in service supplying power to the DC bus, with float charge on the battery.
- C. 250V DC Loads are off with Status Control Tags placed on the breakers.

INITIATING CUE

Shutdown Battery Charger 1D653A 250 VDC ESS Battery Charger "A" per OP-188-001.

TASK CONDITIONS

- A. Battery Room Ventilation is operating per OP-030-002.
- B. Battery Charger 1D653A 250 VDC ESS Battery Charger "A" is in service supplying power to the DC bus, with float charge on the battery.
- C. 250V DC Loads are off with Status Control Tags placed on the breakers.

INITIATING CUE

Shutdown Battery Charger 1D653A 250 VDC ESS Battery Charger "A" per OP-188-001.