

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO Admin Topic No. A.1.1**

**JPM NUMBER:** 976-03 Rev. 0, ADMIN

**TASK DESCRIPTION:** Complete Daily Log Verification of Power Distribution Limits during Single Loop Operation.

**K/A REFERENCE & RATING:** 2.1.19 (3.0/3.0)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:   X    
Control Room:   X   Simulator:   X   In-Plant:   X  

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/04/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/10/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/10/02</u>
		KCN	DATE:

## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Complete Daily Log Verification of Power Distribution Limits during Single Loop Operation.

**Required Power:** NA

**IC No.:** NA

**Notes:** Administrative JPM that does not require simulator.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	STP-000-0001, Daily Operating Logs GOP-0004, Single Loop Operation
<b>Required Materials:</b>	STP-000-0001, Daily Operating Logs, Data Sheet 1 GOP-0004, Single Loop Operation
<b>Required Plant Condition:</b>	60% Power
<b>Applicable Objectives:</b>	HLO-, Objectives
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The “A” Reactor Recirc Pump tripped from full power and GOP-0004, Single Loop Operation has been entered. Reactor Engineering has NOT implemented a new core monitoring system thermal limit deck for Single Loop Operation.

**Initiating Cue:** The CRS has directed you to complete Step 114 of STP-000-0001, Data Sheet 1 with the attached Core Performance Log data.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>* 1.                    <u>STEP 114 NOTES</u></p> <p>Power Distribution Limits shall be verified to be within the limits stated in Technical Specifications within 12 hours after Thermal Power is = 23.8% of rated thermal power and once per 24 hours thereafter.</p> <p>During Single Loop Operation, refer to GOP-0004 to determine if administrative limits are applicable.</p>	<p>Refer to administrative limits in GOP-0004 Step 3.4.</p>	<p>_____</p>	<p>CUE: Reactor Engineering has not implemented the appropriate core monitoring system thermal limit deck.</p>

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>2. GOP-0004 Step 3.4</p> <p>During Single Loop Operation, an administrative limit of 0.980 shall be applied to MFLCPR and an administrative limit of 0.79 shall be applied to MAPRAT while core flow is greater than 50% rated. The administrative limits may be removed once Reactor Engineering implements the appropriate core monitoring system thermal limit deck.</p>	<p>Uses 0.980 Admin limit for MFLCPR and 0.79 for MAPRAT.</p>	<p align="center">_____</p>	<p><b>CUE:</b> If asked as CRS, Reactor Engineering has not implemented the appropriate core monitoring system thermal limit deck.</p>
<p>3. Reviews Core Performance Log to obtain values for MFLPD, MAPRAT, and MFLCPR for operating log Step 114.</p>	<p>Fills in Step 114 identifying MAPRAT at 0.811 as exceeding SLO administrative limit.</p> <p>Notifies CRS of MAPRAT exceeding limit.</p>	<p align="center">_____</p>	<p><b>CUE:</b> As CRS, acknowledge MAPRAT exceeding limit.</p>

**Terminating Cue:** Step 114 of STP-000-0001, Data Sheet 1 completed and MAPRAT identified as exceeding limit.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      Satisfactory / Unsatisfactory

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** The "A" Reactor Recirc Pump tripped from full power and GOP-0004 Single Loop Operation has been entered.

Reactor Engineering has NOT implemented a new core monitoring system thermal limit deck for Single Loop Operation.

**Initiating Cues:** The CRS has directed you to complete Step 114 of STP-000-0001, Data Sheet 1 with the attached Core Performance Log data.

**Terminating Cue:** Step 114 of STP-000-0001, Data Sheet 1 completed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO Admin Topic No. A.1.2**

**JPM NUMBER:** 201-03 Rev. 0, ADMIN

**TASK DESCRIPTION:** Determine Fuse Removal Required for SLC Squib A and Effects on Control Room Status Indication.

**K/A REFERENCE & RATING:** 2.1.24 (2.8/3.1)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:   X    
Control Room:   X   Simulator:   X   In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/09/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/10/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/10/02</u>
		KCN	DATE:



## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Determine the effects of a failed component on system operation.

**Required Power:** NA

**IC No.:** NA

**Notes:** Administrative JPM that does not require simulator.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** GE Elementary 828E234AA

**Required Materials:** GE Elementary 828E234AA

**Required Plant Condition:** 100% Power

**Applicable Objectives:** HLO-542, Objectives 4 & 5

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** Maintenance requires the “A” SLC Squib Valve C41-F004A to be de-energized.

**Initiating Cue:** The CRS has directed you to do the following:

1. Determine the fuses (by identifying number) that must be removed to de-energized Squib Valve C41-F004A.
2. Provide the exact physical location of the fuses by panel and terminal board.
3. Identify the impact of fuse removal on Control Room front panel indication and/or alarm status.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. Locates correct plant electrical print.	Locates fuses on GE Elementary 828E234AA	_____	
* 2. Identifies Fuse Numbers and physical location.	States Fuses F2 and F3 in Panel P632, Terminal Board TB0010.	_____	

### RBS JOB PERFORMANCE MEASURE

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 3. Identifies impact of fuse removal on Control Room indication and/or alarm status.	States fuse removal will: <ul style="list-style-type: none"> <li>• De-energize squib continuity white light on P601.</li> <li>• Energize (or turn on) the Amber postage stamp “Loss of Continuity to Squib Valve A or Loss of Power.”</li> <li>• Standby Liquid System A Inoperative annunciator will alarm.</li> </ul>	_____	

**Terminating Cue:** Provided fuse identification, location and impact on Control Room front panel indications and/or alarms.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** Maintenance requires the “A” SLC Squib Valve C41-F004A to be de-energized.

**Initiating Cues:** The CRS has directed you to do the following:

1. Determine the fuses (by identifying number) that must be removed to de-energized Squib Valve C41-F004A.
2. Provide the exact physical location of the fuses by panel and terminal board.
3. Identify the impact of fuse removal on Control Room front panel indication and/or alarm status.

**Terminating Cue:** Provided fuse identification, location and impact on Control Room front panel indications and/or alarms.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO Admin Topic No. A.2**

**JPM NUMBER:** 204-08, Rev. 0 ADMIN

**TASK DESCRIPTION:** Perform Independent Verification of "A" RHR Heat Exchanger tagout

**K/A REFERENCE & RATING:** 2.2.13 (3.6/3.8)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** Yes

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/05/02</u>
		KCN	DATE
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/10/02</u>
		KCN	DATE
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/10/02</u>
		KCN	DATE

## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Perform Independent Verification of “A” RHR Heat Exchanger tagout.

**Required Power:** NA

**IC No.:** 148

**Notes:**

1. Close E12-F003A RHR A HX Outlet Valve and place switch cover tag for the Inlet Valve on the control switch
2. Close E12-F047A RHR A HX Inlet Valve and place switch cover tag for the Outlet Valve on the control switch
3. Close and tag remaining P601 control switches per attached Clearance form.



## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	ADM-0076, Verification Program ADM-0027, Protective Tagging
<b>Required Materials:</b>	Tagging Sheet for RHR A Heat Exchanger Clearance RB-00-0326
<b>Required Plant Condition:</b>	Any
<b>Applicable Objectives:</b>	HLO-201, Objective 2
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A Clearance has been authorized for the “A” RHR Heat Exchanger. The RHR system component lineup has been completed and the tags have been hung.

**Initiating Cue:** The CRS has given you the attached tagging sheet and directed you to perform an Independent Verification of the tags on P601 for the “A” RHR Heat Exchanger Clearance RB-00-0326.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. Verifies tags on P601 Section 21 for the “A” RHR Heat Exchanger Clearance.	Verifies all tagged components are in the proper position and the tag numbers match the tag sheet.  Identifies incorrect placement of RHR HX Inlet Valve and Outlet Valve tags.  Informs CRS of tagging discrepancy.	____	CUE: As CRS, direct operator to remove the incorrectly placed tags and return them to you.  NOTE: It is satisfactory for the candidate to remove the tags and deliver them to the CRS when informing you of the tagging error.
2. Removes incorrectly placed tags.	Incorrectly placed tags removed and given to CRS for disposition.	____	CUE: As CRS, direct operator to initiate a Condition Report for the tagging error

**Terminating Cue:** Independent verification has been completed and incorrectly placed tags removed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** A Clearance has been issued for the “A” RHR Heat Exchanger.  
The RHR system component lineup has been completed and the tags are hung.
- Initiating Cues:** The CRS has given you the attached tagging sheet and directed you to perform an Independent Verification of the tags on P601 for the “A” RHR Heat Exchanger Clearance RB-00-0326.
- Terminating Cue:** Independent Verification of P601 portion of the “A” RHR Heat Exchanger Clearance has been completed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO Admin Topic No. A.3**

**JPM NUMBER:** 001-01, Rev. 0 ADMIN

**TASK DESCRIPTION:** Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

**K/A REFERENCE & RATING:** 2.3.1 (2.6/3.0)  
2.3.4 (2.5/3.1)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance:  X  Actual Performance:  X   
Control Room:      Simulator:      In-Plant:  X

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO & SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u> Roger Persons </u>	<u> 0862 </u>	<u> 12/06/02 </u>
		KCN	DATE:
<b>Ops Validation:</b>	<u> Joseph Clark </u>	<u> 0260 </u>	<u> 12/10/02 </u>
		KCN	DATE:
<b>Approved by:</b>	<u> Mike Wagner </u>	<u> 0035 </u>	<u> 12/10/02 </u>
		KCN	DATE:

## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

**Required Power:** NA

**IC No.:** NA

**Notes:** Administrative JPM that will be conducted in the plant in conjunction with other JPMs performed in the CAA.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	EOI Rad Worker Training
<b>Required Materials:</b>	Standard personal safety equipment for entry into CAA RWP and Survey Map for entering Contamination Area
<b>Required Plant Condition:</b>	Any
<b>Applicable Objectives:</b>	RWT01
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**NOTE: Explain to the Candidate that you will be observing and grading the radiological practices performed by the candidate during the entry, activities inside the CAA, and exit of the CAA.**

**Inform the candidate part of the JPM will involve entry into a contamination zone . ACTUAL ENTRY WILL NOT BE REQUIRED.**

**Initial Conditions:** With the plant at power, .

**Initiating Cue:** The CRS has directed you to enter a Contamination Zone to reposition a valve.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>1. Informs the Health Physics Technician/Supervisor at the HP desk at CAA entrance that part of his Job will involve entry into the area around the fuel pool heat exchangers OR reviews the survey map and determines the area is a contamination area. Per the RWP 2002-1002 entry into contamination areas requires single PCs and NO Pre-Job Brief.</p>	<p>Candidate may review the survey map and determine only single PCs are required OR may discuss with HP Desk. Either is acceptable. There is NO pre-Job brief required to enter a Contamination Area.</p>	<p>_____</p>	<p><b>NOTE:</b> The Evaluator may be required to discuss the entry in private with the Health Physics personnel this is only a test and the operator will NOT be entering the High Contamination Area.</p>



**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
2. Obtain Electronic Alarming Dosimeter (EAD) from the rack outside the CAA entrance and activate at the access turnstile using appropriate Radiation Work Permit (RWP) number, and enters CAA when access is granted.	Candidate will obtain an EAD and insert the EAD into the activation slot and SCAN the bar code on his TLD and follow instructions on the screen. Entering RWP number and answering the questions on the computer fields of the access terminal. Once all fields have been entered appropriately access is granted.	_____	<b>NOTE:</b> The RWP Number will be either 2002-1002 or 2002-1005 either RWP number is acceptable dependent on the candidate's authorization.
3. Dons personal safety equipment as required inside the CAA.	Hard hat, safety glasses and ear plugs worn where required in the CAA.	_____	
4. While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements.	While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements.	_____	<b>NOTE:</b> None of the areas for the JPMs should access any High Radiation Areas or Contamination Areas.
5. Exiting of the CAA the candidate enters the control point area and enters a PCM-1 Monitor.	Candidate clears PCM-1 Monitor and exits.	_____	<b>NOTE:</b> If candidate shows radon contamination portions of apparel such as hard hat may be left with Health Physics for decay.
6. If hand carried materials were carried into the CAA they will be cleared through the Tool Contamination Monitor (TCM).	Candidate will place hand carried items in the TCM for counting.	_____	
7. After clearing the PCM-1 the candidate exits through the Portal Monitor.	Candidate clears Portal Monitor and exits.	_____	

**RBS JOB PERFORMANCE MEASURE**

<b>PERFORMANCE STEP</b>	<b>STANDARD</b>	<b>S/U</b>	<b>COMMENTS</b>
8. Deactivates Merlin Guerlin at terminal at final exit of session.	Candidate will deactivate his EAD and return it to Health Physics rack.	—	

**Terminating Cue:** Entry and egress from CAA completed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** With the plant at power,

**Initiating Cues:** The CRS has directed you to enter a Contamination Zone to reposition a valve.

**Terminating Cue:** Entry and egress from CAA completed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO Admin Topic No. A.4**

**JPM NUMBER:** 940-02, Rev. 1 ADMIN

**TASK DESCRIPTION:** Make Required EP Notifications

**K/A REFERENCE & RATING:** 2.4.39 (3.3/3.1)      2.4.43 (2.8/3.5)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance:   X   Actual Performance: \_\_\_\_\_  
Control Room: \_\_\_\_\_ Simulator:   X   In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>  Roger Persons  </u>	<u>  0862  </u>	<u>  12/05/02  </u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>  Fred Hurst  </u>	<u>  0628  </u>	<u>  12/09/02  </u>
		KCN	DATE:
<b>Approved by:</b>	<u>  Mike Wagner  </u>	<u>  0035  </u>	<u>  12/10/02  </u>
		KCN	DATE:

## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Make Required EP Notifications

**Required Power:** NA

**IC No.:** NA

**Notes:** Ensure the ESP-COMM computer is setup with Station in control  
“Simulator”.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	EIP-2-006, Notifications
<b>Required Materials:</b>	EIP-2-006, Notifications Completed Short Notification Message Form
<b>Required Plant Condition:</b>	Any
<b>Applicable Objectives:</b>	EP-23, Objective 1
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** An ongoing fire on the 116' elevation of the Control Building has damaged both Control Building Filter trains. The Fire Brigade Leader expects to have the fire extinguished within the next 20 minutes. The Shift Manager/Emergency Director has just classified this event as a Site Area Emergency. The normal communicator was incapacitated by smoke from the fire.

**Initiating Cue:** The CRS has provided you the Short Notification Form and directed you to make the required notifications to state and local authorities per EIP-2-006, Notifications. **[NOTE: Message transmittal should be SIMULATED.]**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Verify Station in Control is appropriate.	Station in Control Simulator	_____	<b>NOTE:</b> Computer will be set up with station in control Simulator.
* 2. Click on Start Event button	Start Event screen opens.	_____	
* 3. Select "Drill Status"	Drill Status selected.	_____	
* 4. Click OK		_____	
* 5. Select Site Area Emergency from Classification pull-down menu.	Site Area Emergency selected.		



**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
6. Requests Emergency Director Review	Requested	_____	<b>CUE:</b> As Emergency Director verify Site Area Emergency information from short form.
* 7. Click on transmit	Window to choose Group opens.		<b>Terminate the JPM</b>

**Terminating Cue:** Notifications made to state and local authorities for Site Area Emergency.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** An ongoing fire on the 116' elevation of the Control Building has damaged both Control Building Filter trains.
- The Fire Brigade Leader expects to have the fire extinguished within the next 20 minutes.
- The Shift Manager/Emergency Director has just classified this event as a Site Area Emergency.
- The normal communicator was incapacitated by smoke from the fire.
- Initiating Cues:** The CRS has provided you the Short Notification Form and directed you to make the required notifications to state and local authorities per EIP-2-006, Notifications. **[NOTE: Message transmittal should be SIMULATED.]**
- Terminating Cue:** Notifications made to state and local authorities for Site Area Emergency.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 SRO Admin Topic No. A.1.1**

**JPM NUMBER:** 053-07, Rev. 1 ADMIN

**TASK DESCRIPTION:** Perform Calculations Per GOP-0004 For Entering Single Loop Operation

**K/A REFERENCE & RATING:** 2.1.7 (3.7/4.4)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:   X    
Control Room: \_\_\_\_\_ Simulator:   X   In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/05/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/10/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/10/02</u>
		KCN	DATE:

## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Perform Calculations Per GOP-0004 For Entering Single Loop Operation

**Required Power:** 60%

**IC No.:** 139

**Notes:** Loop B Flow recorder pen on C51-R614 is failed downscale requiring use of Group Point B33NA007 or 8 for Flow Calculation.

Ensure Steam Tables are available

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** GOP-0004, Single Loop Operation, Attachment 1

**Required Materials:** GOP-0004, Single Loop Operation, Attachment 1

**Required Plant Condition:** 60% Power

**Applicable Objectives:** HLO-, Objectives

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The "A" Reactor Recirc Pump tripped from full power and GOP-0004 Single Loop Operation has been entered.

**Initiating Cue:** The CRS has directed you to complete Step 4 of GOP-0004, Attachment 1.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>* 1. Within one hour of entering Single Loop Operation, verify the following:</p> <p>Thermal Power is less than or equal to 79% Rated Thermal Power (2400 MWTH)</p> <p>_____ CMWTH= _____% ≤79% 3039 (TSR 3.4.1.1.2)</p> <p>2. <u>AND</u></p> <p>At H13-P680, B33-HYVF060A and B33-HYVF060B, FLOW CONT VALVE, is in LOOP MANUAL. (TSR 3.4.1.1.3)</p>	<p>Determines power to be 60% ±1%.</p> <p>Verifies both Recirc FCV M/A Stations in MANUAL.</p> <p>AMBER lights ON.</p>	<p>_____</p> <p>_____</p>	

JPM-05307.01

\* Denotes **Critical Step**  
 ^ Denotes **Sequence Critical**  
 (must be performed after previous step marked ^ )

Page 4 of 7





**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** The "A" Reactor Recirc Pump tripped from full power and GOP-0004 Single Loop Operation has been entered.

**Initiating Cues:** The CRS has directed you to complete Step 4 of GOP-0004, Attachment 1.

**Terminating Cue:** Step 4 of GOP-0004, Attachment 1 is completed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 SRO Admin Topic No. A.1.2**

**JPM NUMBER:** 256-04, Rev. 0 ADMIN

**TASK DESCRIPTION:** Complete LCO Status Sheet for Inoperative Div.1 Standby Diesel Generator.

**K/A REFERENCE & RATING:** 2.1.12 (2.9/4.0)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:   X    
Control Room:   X   Simulator:   X   In-Plant:   X  

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/08/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/12/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/12/02</u>
		KCN	DATE:

## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Complete LCO Status Sheet for Inoperative Div.1 Standby Diesel Generator.

**Required Power:** NA

**IC No.:** NA

**Notes:** Administrative JPM that does not require simulator.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** OSP-0040, LCO Tracking And Safety Function  
Determination Program  
Tech Spec 3.8.1, AC Sources - Operating

**Required Materials:** LCO Status Sheet  
Technical Specifications

**Required Plant Condition:** Mode 1

**Applicable Objectives:** HLO-408, Objective 2

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The leak in the Service Water supply to the Division 1 Standby Diesel Generator has been discovered and isolated at 1400 hours today. The Division 1 Standby Diesel Generator has been declared inoperable. No other Technical Specification LCOs exist at this time. Restoration of Service Water to the Diesel is expected to take about 8 hours.

**Initiating Cue:** Complete attached LCO Status Sheet LCO No. 03-016 for the Inoperative Division1 Standby Diesel Generator.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. Complete LCO Status Sheet Blocks 5, 6, and 8.	Completes LCO Status Sheet Blocks 5, 6, and 8 per attached LCO Status Sheet.	_____	
* 2. Provide a brief description of the Condition(s) entered. All conditions that must be entered due to the inoperability should be documented.	Completes LCO Status Sheet Block 10 per attached LCO Status Sheet.	_____	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 3. Provide the Required Actions if the TS/TRM LCO is not met.	Completes LCO Status Sheet Block 11 per attached LCO Status Sheet.	_____	
* 4. Record the Completion Time associated with each Required Action.	Completes LCO Status Sheet Block 12 per attached LCO Status Sheet.	_____	
5. When an LCO is entered for a system designated as a support system in Attachment 1, Support – Supported LCO Matrix of this procedure, evaluate the operability of the supported system. If T.S. 3.0.6 is to be used to prevent entering Conditions and Required Actions for supported systems, perform an evaluation per T.S. 5.5.10 to ensure that no loss of safety function exists.	Completes LCO Status Sheet Blocks 13 through 15 per attached LCO Status Sheet.	_____	

**Terminating Cue:** LCO Status Sheet LCO No. 03-016 for the Inoperative Division1 Standby Diesel Generator completed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_



## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** The leak in the Service Water supply to the Division 1 Standby Diesel Generator has been discovered and isolated at 1400 hours today.  
The Division 1 Standby Diesel Generator has been declared inoperable.  
No other Technical Specification LCOs exist at this time.  
Restoration of Service Water to the Diesel is expected to take about 8 hours.
- Initiating Cues:** Complete attached LCO Status Sheet LCO No. 03-016 for the inoperative Division1 Standby Diesel Generator.
- Terminating Cue:** LCO Status Sheet LCO No. 03-016 for the Inoperative Division1 Standby Diesel Generator completed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 SRO Admin Topic No. A.2**

**JPM NUMBER:** 204-09, Rev. 0 ADMIN

**TASK DESCRIPTION:** Perform Review and Authorization of HPCS Tagout

**K/A REFERENCE & RATING:** 2.2.13 (3.6/3.8)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:   X    
Control Room:   X   Simulator:   X   In-Plant:   X  

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** Yes

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/05/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/12/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/12/02</u>
		KCN	DATE:

## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Perform review and authorization of HPCS tagout

**Required Power:** NA

**IC No.:** NA

**Notes:** Administrative JPM that does not require simulator.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	ADM-0027, Protective Tagging
<b>Required Materials:</b>	Tagging Sheet for HPCS Clearance LCO Status Sheet for LPCS Inop
<b>Required Plant Condition:</b>	100% Power
<b>Applicable Objectives:</b>	HLO-201, Objective 8
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The plant is in Mode 1. The Tagging Official hands you, the CRS, a clearance for authorization to remove HPCS from service to perform a required maintenance item.

**Initiating Cue:** As CRS, review and authorize the attached tagout for HPCS, RB-02-0136, current LCOs attached.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Reviews tagout against LCO status information.	Requests LCO Status information.	_____	
* 2. Determines authorization of tagout.	Does not authorize tagout based on RCIC inoperability	_____	

**Terminating Cue:** Review completed and not authorized based on LPCS inoperability.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:**

The plant is in Mode 1.

The Tagging Official hands you, the CRS, a clearance for authorization to remove HPCS from service to perform a required maintenance item.

**Initiating Cues:**

As CRS, review and authorize the attached tagout for HPCS, RB-02-0136, current LCOs attached.

**Terminating Cue:**

Review and authorization of HPCS, RB-02-0136 completed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 SRO Admin Topic No. A.3**

**JPM NUMBER:** 001-01, Rev. 0 ADMIN

**TASK DESCRIPTION:** Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

**K/A REFERENCE & RATING:** 2.3.1 (2.6/3.0)  
2.3.4 (2.5/3.1)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance:   X   Actual Performance:   X    
Control Room:     Simulator:     In-Plant:   X  

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO & SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>  Roger Persons  </u>	<u>  0862  </u>	<u>  12/06/02  </u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>  Joseph Clark  </u>	<u>  0260  </u>	<u>  12/10/02  </u>
		KCN	DATE:
<b>Approved by:</b>	<u>  Mike Wagner  </u>	<u>  0035  </u>	<u>  12/10/02  </u>
		KCN	DATE:



## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

**Required Power:** NA

**IC No.:** NA

**Notes:** Administrative JPM that will be conducted in the plant in conjunction with other JPMs performed in the CAA.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	EOI Rad Worker Training
<b>Required Materials:</b>	Standard personal safety equipment for entry into CAA RWP and Survey Map for entering Contamination Area
<b>Required Plant Condition:</b>	Any
<b>Applicable Objectives:</b>	RWT01
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**NOTE: Explain to the Candidate that you will be observing and grading the radiological practices performed by the candidate during the entry, activities inside the CAA, and exit of the CAA.**

**Inform the candidate part of the JPM will involve entry into a contamination zone . ACTUAL ENTRY WILL NOT BE REQUIRED.**

**Initial Conditions:** With the plant at power, .

**Initiating Cue:** The CRS has directed you to enter a Contamination Zone to reposition a valve.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Informs the Health Physics Technician/Supervisor at the HP desk at CAA entrance that part of his Job will involve entry into the area around the fuel pool heat exchangers OR reviews the survey map and determines the area is a contamination area. Per the RWP 2002-1002 entry into contamination areas requires single PCs and NO Pre-Job Brief.	Candidate may review the survey map and determine only single PCs are required OR may discuss with HP Desk. Either is acceptable. There is NO pre-Job brief required to enter a Contamination Area.	_____	<b>NOTE:</b> The Evaluator may be required to discuss the entry in private with the Health Physics personnel this is only a test and the operator will NOT be entering the High Contamination Area.

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
2. Obtain Electronic Alarming Dosimeter (EAD) from the rack outside the CAA entrance and activate at the access turnstile using appropriate Radiation Work Permit (RWP) number, and enters CAA when access is granted.	Candidate will obtain an EAD and insert the EAD into the activation slot and SCAN the bar code on his TLD and follow instructions on the screen. Entering RWP number and answering the questions on the computer fields of the access terminal. Once all fields have been entered appropriately access is granted.	_____	<b>NOTE:</b> The RWP Number will be either 2002-1002 or 2002-1005 either RWP number is acceptable dependent on the candidate's authorization.
3. Dons personal safety equipment as required inside the CAA.	Hard hat, safety glasses and ear plugs worn where required in the CAA.	_____	
4. While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements.	While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements.	_____	<b>NOTE:</b> None of the areas for the JPMs should access any High Radiation Areas or Contamination Areas.
5. Exiting of the CAA the candidate enters the control point area and enters a PCM-1 Monitor.	Candidate clears PCM-1 Monitor and exits.	_____	<b>NOTE:</b> If candidate shows radon contamination portions of apparel such as hard hat may be left with Health Physics for decay.
6. If hand carried materials were carried into the CAA they will be cleared through the Tool Contamination Monitor (TCM).	Candidate will place hand carried items in the TCM for counting.	_____	
7. After clearing the PCM-1 the candidate exits through the Portal Monitor.	Candidate clears Portal Monitor and exits.	_____	

**RBS JOB PERFORMANCE MEASURE**

<b>PERFORMANCE STEP</b>	<b>STANDARD</b>	<b>S/U</b>	<b>COMMENTS</b>
8. Deactivates Merlin Guerlin at terminal at final exit of session.	Candidate will deactivate his EAD and return it to Health Physics rack.	—	

**Terminating Cue:** Entry and egress from CAA completed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** With the plant at power,

**Initiating Cues:** The CRS has directed you to enter a Contamination Zone to reposition a valve.

**Terminating Cue:** Entry and egress from CAA completed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 SRO Admin Topic No. A.4**

**JPM NUMBER:** 980-01, Rev. 0 ADMIN

**TASK DESCRIPTION:** Determine Protective Action Recommendations

**K/A REFERENCE & RATING:** 2.4.44 (2.1/4.0)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room:  X  Simulator:  X  In-Plant:  X

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** NA

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/10/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/10/02</u>
		KCN	DATE:



## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Determine Protective Action Recommendations

**Required Power:** NA

**IC No.:** NA

**Notes:** Administrative JPM that does not require simulator.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** EIP-2-007, Protective Action Recommendation Guidelines

**Required Materials:** EIP-2-007, Protective Action Recommendation Guidelines

**Required Plant Condition:** Shutdown with release in progress

**Applicable Objectives:** EP-42.12, Objective 11

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A General Emergency has been declared due to a release in progress following a large break LOCA inside containment. Minimum Protective Action Recommendations were issued. Due to the combination of Hydrogen Concentration and Containment pressure, Emergency Containment Venting is now required.

**Initiating Cue:** As acting Recovery Manager, determine the appropriate Protective Action Recommendations and complete a Notification of General Emergency short form using the attached dose projections and meteorological information.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Use (EIP-2-007) Attachments 1, 2, and 3 to formulate Protective Action Recommendations (PARs).	Uses EIP-2-007 Attachment 2 to evaluate and Attachment 3 to determine PAR scenario number.	_____	
* 2. Determines upgraded PARs are required.	PAR upgraded to Scenario 19 and Notification short form completed.	_____	

**Terminating Cue:** Notification of General Emergency short form completed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** A General Emergency has been declared due to a release in progress following a large break LOCA inside containment.
- Minimum Protective Action Recommendations were issued.
- Due to the combination of Hydrogen concentration and Containment pressure, Emergency Containment Venting is now required.
- Initiating Cues:** As acting Recovery Manager, determine the appropriate Protective Action Recommendations and complete a Notification of General Emergency short form using the attached dose projections and meteorological information.
- Terminating Cue:** Notification of General Emergency short form completed.

# RBS JOB PERFORMANCE MEASURE

## DOSE ASSESSMENT for Emergency Containment Venting

### DISTANCE DOSE RATE CALCULATIONS

#### TEDE Dose (REM):

Site Boundary	3.95E1
2 Miles	6.49E0
5 Miles	1.08E0
10 Miles	2.02E-1

#### CEDE Dose (REM)

Site Boundary	6.02E-1
2 Miles	1.06E-1
5 Miles	2.44E-2
10 Miles	7.55E-3

#### Meteorological Data

Wind Speed	2.1 mph
Wind Direction	330°
Delta T	-0.8°F
Stability Class	D

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I and SRO-U  
Systems JPM No. B.1.1**

**JPM NUMBER:** 053-08, Rev. 0

**TASK DESCRIPTION:** Restart Recirculation Pump A in Fast Speed Following Trip at Power (with Suction Temperature Alarm Before Start)

**K/A REFERENCE & RATING:** 202001 K1.10 (2.8/2.8) A4.10 (3.3/3.4)  
A2.21 (3.3/3.7) A4.01 (3.7/3.7)  
202002 K4.02 (3.0/3.0)

**TASK REFERENCE:** 202008001001

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 15 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** Yes

**SAFETY FUNCTION GROUP** 1

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>862</u>	<u>12/02/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Steve Fiore</u>	<u>0124</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:

## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Restart Recirculation Pump A in Fast Speed Following Trip at Low Power (with Suction Temperature Alarm Before Start)

**Required Power:** 38%

**IC No.:** 148

**Notes:** Insert Annunciator Override, **P680\_04a:c\_2, t1**

Turn down intensity on PMS screens at P680 to simulate it being out of service.



## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** SOP-0003, Reactor Recirculation System (SYS #053)

**Required Materials:** SOP-0003, Reactor Recirculation System (SYS #053)

**Required Plant Condition:** 38% Power

**Applicable Objectives:** STM-053, Objectives H11

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The “A” Reactor Recirc Pump tripped during a plant startup. The plant has been in GOP-0004 Single Loop Operation for the last six hours. GOP-0004, Attachment 1 was completed. The cause of the trip has been determined and the “A” Reactor Recirc Pump is ready to be started. Attachment 2, Return to Two Loop Operation has been completed through Step 2 and the Recirculation Pump Startup in SOP-0003 has been completed through Step 4.10. An extra Control Room Operator is standing by to provide temperature reading from P614 since PMS is out of service.

**Initiating Cue:** The CRS has directed you to complete restarting the idle Recirculation Pump A per SOP-0003, Reactor Recirculation.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. Depress B33-C001A(B), RECIRC PUMP A(B) MOTOR BREAKER 5A(B) RELEASE pushbutton on the STOP/PUSH TO LOCK control switch.	RELEASE pushbutton depressed.	_____	PUSH TO LOCK button releases and Annunciator P680-04A-E01, RECIRC PUMP A AUTO TRANSFER CIRCUIT INOP clears.
2. Verify B33-C001A(B) PUMP A(B) MOT BRKR 4A(B) is closed.	BRKR 4A is closed.  RED light ON, GREEN light OFF	_____	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 3. Depress B33-C001A(B) PUMP A(B) MOT BRKR 3A(B) CLOSE pushbutton.	BRKR 3A is closed.  RED light ON, GREEN light OFF	_____	<b>NOTE:</b> As soon as Breaker 3A is closed, activate trigger <b>t1</b> to insert override <b>P680_04a:c_2</b> to initiate P680-04A-C02 alarm.
4. Silence and acknowledge annunciator P680-04A-C02, RECIRC PUMP A TEMP INTERLOCK ACTUATED.	Annunciator P680-04A-C02, silenced and acknowledged.	_____	<b>NOTE: ALTERNATE PATH</b>
5. Requests P614 status of vessel drain and recirc loop suction temperatures.	P614 temperatures requested.	_____	<b>CUE:</b> At P614, cause of alarm is Loop Suction ?T 51°F.
6. Verify B33-F023A, RECIRC PUMP A SUCTION VLV and B33-F067A, RECIRC PUMP A DISCH VLV are open.	Both valves are open.  RED lights ON, GREEN lights OFF		<b>CUE:</b> Time compression used to move 10 minutes forward. At P614, the Loop Suction ?T is now 40°F.
* 7. Close C11-F024A, RX RECIRC PMP A SEAL PURGE LINE ISOL VLV.	Contacts Reactor Building Operator to close C11-F024A.  C11-F024A is closed.		<b>CUE:</b> Reactor Building Operator has closed C11-F024A  <b>NOTE:</b> Alarm P680-04A-C02 clears.
8. Reopen C11-F024A immediately prior to starting the recirc pump	Contacts Reactor Building Operator to open C11-F024A.  C11-F024A is open.		<b>CUE:</b> Reactor Building Operator has opened C11-F024A.

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>9. Resets annunciator P680-04A-C02, RECIRC PUMP A TEMP INTERLOCK ACTUATED.</p> <p>* 10. <u>IF</u> one pump is operating in FAST SPEED <u>AND</u> the idle pump is to be operated in FAST SPEED, <u>THEN</u> depress the B33-C001A RECIRC PUMP A MOTOR BREAKER 5A control switch for the Recirc Pump to be started and perform the following:</p> <ol style="list-style-type: none"> <li>1) Verify B33-C001A RECIRC PUMP A MOTOR BREAKER 5A closes.</li> <li>2) Check for a surge on B33-R609A, PUMP A AMPS as the Recirc Pump accelerates to full speed of 1800 RPM.</li> </ol>	<p>Annunciator P680-04A-C02, reset.</p> <p>B33-C001A RECIRC PUMP A MOTOR BREAKER 5A closed and pump running.</p> <p>Breaker 5A closed.</p> <p>RED lights ON, GREEN lights OFF</p> <p>Starting current dies back down to running current.</p>		

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>11. Monitor Recirc Pump A and Jet Pump Operation at the following:</p> <ol style="list-style-type: none"> <li>1) Pump A Diff Press on B33-R605A, PUMP A DP.</li> <li>2) JP Loop A Total Flow on B33-R612A, TOTAL FLOW.</li> <li>3) The following seal flow annunciators are clear:                             <ul style="list-style-type: none"> <li>• Annunciator P680-04A-C05, RECIRC PUMP A SEAL CLG WATER LOW FLOW</li> <li>• Annunciator P680-04A-E05, RECIRC PUMP A SEAL STAGING HIGH/LOW FLOW</li> </ul> </li> </ol>	<p>Monitors Pump DP and JP Loop A Total Flow</p> <p>Annunciators cleared (were not alarming during evolution).</p>		

**Terminating Cue:** Reactor Recirc Pump “A” is running at Fast Speed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** The “A” Reactor Recirc Pump tripped during a plant startup.  
The plant has been in GOP-0004 Single Loop Operation for the last six hours.  
GOP-0004, Attachment 1 was completed.  
The cause of the trip has been determined and the “A” Reactor Recirc Pump is ready to be started.  
Attachment 2, Return to Two Loop Operation has been completed through Step 2 and the Recirculation Pump Startup in SOP-0003 has been completed through Step 4.10.  
An extra Control Room Operator is standing by to provide temperature reading from P614 since PMS is out of service.
- Initiating Cues:** The CRS has directed you to complete restarting the idle Recirculation Pump A per SOP-0003, Reactor Recirculation.
- Terminating Cue:** Reactor Recirc Pump “A” is running at Fast Speed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I Systems JPM No. B.1.2**

**JPM NUMBER:** 501-03, Rev. 0

**TASK DESCRIPTION:** Transfer from Startup Feedwater Level Controller to the Master Feedwater Level Controller

**K/A REFERENCE & RATING:** 259002 K5.01 (3.1/3.10) A4.03 (3.8/3.6)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 2

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/01/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Steve Fiore</u>	<u>0124</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:



## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Transfer from Startup Feedwater Level Controller to the Master Feedwater Level Controller.

**Required Power:** 10%

**IC No.:** 145

**Notes:** “A” FWREG Valve in service  
1 ELEM/3 ELEM pushbutton in 1 ELEM  
Startup Level Controller in operation set at 36 inches

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** SOP-0009, Reactor Feedwater System (SYS #107)

**Required Materials:** SOP-0009, Reactor Feedwater System (SYS #107)

**Required Plant Condition:** Plant startup at 10% power

**Applicable Objectives:** STM-107B, Objectives H2, H3, H5, and H9

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A plant startup is in progress and reactor power is 10%. RPV level is being maintained with the Startup Level Controller. One Reactor Feed Pump and one Condensate Pump in operation. FWREG Valve A is in service.

**Initiating Cue:** The CRS has directed you to transfer from the Startup Level Controller to the Master Level Controller to control level at 36 inches.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Check feedwater flow is approximately 10% or $1.31 \times 10^6$ lbm/hr.	Feedwater flow ~10% or $1.31 \times 10^6$ lbm/hr	—	
2. Verify 1 ELEM is selected on the SINGLE ELEMENT THREE ELEMENT SELECT Switch	1 ELEM selected.	—	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
3. Place C33-R600, FW REG VALVES MASTER FLOW CONTROLLER in AUTO as follows: 1. Adjust tape set 2 inches above actual vessel level and observe the deviation signal is positive.	Tape Set 2 inches above actual level, deviation signal positive	_____	
4. 2. Lower tape set 2 inches below actual vessel level and observe the deviation signal is negative.	Tape Set 2 inches above actual level, deviation signal negative	_____	
5. 3. Match tape set to actual vessel level in order to null the deviation signal.	Tape Set to match actual level.	_____	
* 6. 4. Depress the AUTO Pushbutton and check the green light above the pushbutton is on.	GREEN light on, YELLOW light off.	_____	
* 7. Place C33-R602, START UP FWREG VALVE FLOW CONTROLLER in MANUAL.	YELLOW light on, GREEN light off.	_____	
* 8. Use the manual CLOSE Pushbutton on C33-R602, START UP FWREG VALVE FLOW CONTROLLER to close C33-FV002, START UP FWREG Valve while ensuring reactor level is maintained by the Master Level Controller.	C33-FV002 closed, level maintained.	_____	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
9. Adjust C33-R600, FW REG VALVES MASTER FLOW CONTROLLER Tape Set to maintain the reactor level requested by the OSS/CRS.	Tape Set to 36 inches.	_____	

**Terminating Cue:** Master Level Controller in AUTO and Single Element Control with Tape Set for 36 inches.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:**

A plant startup is in progress and reactor power is 10%.  
RPV level is being maintained with the Startup Level Controller.  
One Reactor Feed Pump and one Condensate Pump in operation.  
FWREG Valve A is in service.

**Initiating Cues:**

The CRS has directed you to transfer from the Startup Level Controller to the Master Level Controller to control level at 36 inches.

**Terminating Cue:**

Master Level Controller in AUTO and Three Element Control with Tape Set for 36 inches.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I Systems JPM No. B.1.3  
and SRO-U JPM No. B.1.2**

**JPM NUMBER:** 109-05, Rev. 0

**TASK DESCRIPTION:** Open Inboard MSIVs After Closure During Plant Startup

**K/A REFERENCE & RATING:** 239001 K4.09 (3.3/3.3) A4.01 (4.2/4.0)  
A4.01 (3.2/3.2)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 15 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 2

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/01/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/10/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/10/02</u>
		KCN	DATE:



## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Open Inboard MSIVs After Closure During Plant Startup

**Required Power:** 2%

**IC No.:** 146

**Notes:** Requires an additional operator/instructor to maintain RPV water level and silence any annunciators during evolution.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** SOP-0011, Main Steam System (SYS #109)

**Required Materials:** SOP-0011, Main Steam System (SYS #109)

**Required Plant Condition:** Plant startup at Point of Adding Heat, ~600 psig

**Applicable Objectives:** STM-109, Objective H7

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The Inboard MSIVs were closed during a plant startup. The heatup and pressurization will continue when the MSIVs are reopened.

**Initiating Cue:** The CRS has directed you to open the Inboard MSIVs using SOP-0011, beginning at Step 4.2.10.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. Verify closed the following: <ul style="list-style-type: none"> <li>• B21-MOVF021, MSL WARMUP HDR COND DRAIN BYP VALVE</li> <li>• B21-AOVF033, MSL WARMUP HDR COND DRAIN VALVE</li> <li>• B21-MOVF068, MSL DRAIN HDR COND DRAIN BYP VALVE</li> <li>• B21-AOVF069, MSL DRAIN HDR COND DRAIN VALVE</li> </ul>	All listed valves are closed.  GREEN light ON  RED light OFF	_____	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 2. Verify open the following: <ul style="list-style-type: none"> <li>• B21-MOVF016, MSL WARMUP HDR INBD CONTMT ISOL VLV</li> <li>• B21-MOVF019, MSL WARMUP HDR OUTBD CONTMT ISOL VLV</li> <li>• B21-MOVF085, MSL WARMUP HDR SHUTOFF VALVE</li> </ul>	All listed valves are open.  RED light ON  GREEN light OFF	_____	
* 3. Open slowly B21-MOVF020, MSL WARMUP HDR SUPPLY VALVE to equalize pressure across the inboard MSIVs.	B21-MOVF020 slowly opened.	_____	
4. Monitor differential pressure across the inboard MSIVs using the following: <ul style="list-style-type: none"> <li>• C33-R605, REACTOR PRESSURE</li> <li>• MSS-PI101, MAIN STEAM HEADER PRESSURE</li> </ul>	Monitors differential pressure.	_____	<b>PROCEDURE NOTE:</b> Opening an MSIV can cause a Reactor water level transient. Slowly opening the MSIV using the OPEN/SLOW TEST position and intermittent release of the TEST Pushbutton can mitigate the level transient.



**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                    **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** The Inboard MSIVs were closed during a plant startup.  
The heatup and pressurization will continue when the MSIVs are reopened.

**Initiating Cues:** The CRS has directed you to open the Inboard MSIVs using SOP-0011, beginning at Step 4.2.10.

**Terminating Cue:** All Inboard MSIVs are open.





## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Shutdown HPCS following Spurious Automatic Initiation (with Line Fill Pump Trip)

**Required Power:** 100%

**IC No.:** 151

**Notes:**

1. Insert manual scram and complete AOP-0001 immediate actions.
2. Manually initiate HPCS.
3. Establish RPV level at 35 inches.
4. Setup trigger **t1** to initiate HPCS Line Fill Pump Trip

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** SOP-0030, High Pressure Core Spray (SYS #203)

**Required Materials:** SOP-0030, High Pressure Core Spray (SYS #203)  
ARP-P601-16A

**Required Plant Condition:** 100% Power

**Applicable Objectives:** STM-203, Objectives H4

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The plant is operating at rated conditions and HPCS spuriously initiated. Adequate core cooling is assured and was verified by two independent means. RPV level is stable and the ATC is standing by to shutdown HPCS.

**Initiating Cue:** The CRS has directed you to coordinate with the ATC and shutdown HPCS returning it to standby lineup.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Verify E22A-S2, HPCS MANUAL INITIATION collar is in the DISARM position.	Collar in DISARM position (rotated fully counter-clockwise).	_____	
* 2. Depress E22A-S7, HPCS INITIATION RESET Pushbutton and check the white light goes off.	White light above RESET pushbutton off.	_____	



**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
7. <u>WHEN</u> HPCS Pump discharge pressure lowers below 300 psig on E22-R601, HPCS PUMP DISCH PRESSURE, <u>THEN</u> verify E22-F012, HPCS MIN FLOW VALVE TO SUPPRESSION POOL closes.	E22-F012 closed.	_____	NOTE: As pressure drops below 100 psig, insert malfunction <b>HPCS003</b> with <b>t1</b> to trip Line Fill Pump.  <b>NOTE: ALTERNATE PATH</b>
8. Silence and acknowledge annunciator P601-16A-G04, HPCS INJECTION LINE PRESSURE LOW.  9. Attempt to start the HPCS LINE FILL PUMP if <u>not</u> running.  10. <u>IF</u> unable to start the HPCS LINE FILL PUMP, <u>THEN</u> consider placing HPCS in operation as following:  * 11. 1. Close the E22-F001, HPCS PUMP CST SUCTION VALVE.  * 12. 2. Open the E22-F015, HPCS PUMP SUP PL SUCTION VALVE.  * 13. 3. Start the HPCS Pump and verify E22-F012, HPCS MIN FLOW VALVE TO SUPPRESSION POOL opens.	Annunciator P601-16A-G04 silenced and acknowledged  Attempts start, Fill Pump remains tripped.  Communicates ARP recommendation to CRS.  E22-F001 closed.  E22-F015 open.  HPCS Pump running and E22-F012 open	_____  _____  _____  _____  _____	NOTE: ARP-P601-16A-G04 from here on.  CUE: CRS directs placing HPCS in Suppression Pool to Suppression Pool recirc mode.

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
14. 4. Throttle open E22-F023, HPCS TEST RETURN VLV TO SUPPRESSION POOL to achieve flow of 2000 - 3000 gpm as indicated on E22-F603.	Flow on E22-F603, 2000 – 3000 gpm	_____	CUE: Evaluator terminates JPM

**Terminating Cue:** HPCS Pump running in Suppression Pool to Suppression Pool recirc mode.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** The plant is operating at rated conditions and HPCS spuriously initiated.  
Adequate core cooling is assured and was verified by two independent means.  
RPV level is stable and the ATC is standing by to shutdown HPCS.

**Initiating Cues:** The CRS has directed you to coordinate with the ATC and shutdown HPCS  
returning it to standby lineup.

**Terminating Cue:** HPCS Pump shutdown in Standby Mode.



**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I JPM No. B.1.5**

**JPM NUMBER:** 309-05, Rev. 0

**TASK DESCRIPTION:** Parallel Offsite Power With Div 1 EDG Supplying ENS-SWG1A.

**K/A REFERENCE & RATING:** 264000 A2.01 (3.5/3.6) A2.05 (3.6/3.6)  
A4.02 (3.4/3.4)  
295003 AA1.02 (4.2/4.3)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** Yes

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 6

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/01/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Joseph Clark</u>	<u>0260</u>	<u>12/10/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/10/02</u>
		KCN	DATE:

## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Parallel Offsite Power With Div 1 EDG Supplying ENS-SWG1A.

**Required Power:** Cold Shutdown following a Loss of Offsite Power

**IC No.:** 140

**Notes:**

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	AOP-0004, Loss of Offsite Power SOP-0053, Standby Diesel Generator and Auxiliaries (SYS#309)
<b>Required Materials:</b>	SOP-0053, Standby Diesel Generator and Auxiliaries (SYS#309)
<b>Required Plant Condition:</b>	0% power following LOP
<b>Applicable Objectives:</b>	STM-053S, Objectives H12
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A Loss of Offsite Power has occurred with the plant in cold shutdown. AOP-0004, Loss of Offsite Power was entered and all required actions taken. Plant conditions are stable and Offsite power is being restored to the plant per AOP-0004, Section 5.16. AOP-0004 has been completed through Step 5.16.11.

**Initiating Cue:** The CRS has directed you to parallel Offsite Power to the ENS-SWG1A per SOP-0053 using the normal supply breaker ACB06.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. <u>IF</u> ENS-ACB06(26), NORMAL SUPPLY BRKR is to be closed, <u>THEN</u> place the REMOTE SYNC SW to NORM.	REMOTE SYNC SW to NORM.	_____	
2. Adjust diesel voltage, as observed on V-1RUN-1SYDA(B)01, RUNNING VOLTAGE to approximately 1- 2 volts above V-1IN-1SYDA(B)01, INCOMING VOLTAGE using the STBY DIESEL GENERATOR A(B) VOLTAGE REGULATOR CONT.	RUNNING VOLTAGE to approximately 1- 2 volts above V-1IN-1SYDA(B)01, INCOMING VOLTAGE.	_____	

JPM-30905.00

\* Denotes **Critical Step**  
 ^ Denotes **Sequence Critical**  
 (must be performed after previous step marked ^ )

Page 4 of 7

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>* 3. Adjust diesel speed, using the STBY DIESEL GENERATOR A(B) GOVERNOR CONTROL, to bring the frequency within the range of grid frequency. Adjust speed so the SY-1-SYDA(B)01, STBY BUS A(B) SYNCHROSCOPE indicator is rotating slowly in the SLOW direction (counterclockwise).</p> <p>* 4. WHEN the synchroscope indicator is moving slowly in the SLOW direction AND the synchroscope indicator is 5 minutes to 2 minutes before the 12 o'clock position, THEN close the desired feeder breaker, ENS-ACB06(26), NORMAL SUPPLY BRKR or ENS-ACB04(24), ALTERNATE SUPPLY BRKR. Verify the red breaker closed light comes ON. If not, return the breaker handswitch to TRIP.</p>	<p>SYNCHROSCOPE indicator is rotating slowly in the SLOW direction.</p> <p>NORMAL SUPPLY BRKR closed.</p> <p>RED light ON</p> <p>GREEN light OFF</p>	<p>_____</p> <p>_____</p>	
<p>5. As soon as diesel load has stabilized, return the REMOTE SYNC SW to OFF and shutdown Standby Diesel Generator per Section 6.1 of this procedure.</p>	<p>REMOTE SYNC SW returned to OFF</p>	<p>_____</p>	

**Terminating Cue:** Offsite Power paralleled with ENS-SWG1A.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** A Loss of Offsite Power has occurred with the plant in cold shutdown. AOP-0004, Loss of Offsite Power was entered and all required actions taken.
- The plant is stable and Offsite power is available.
- Electrical power from Offsite is being returned to station busses.
- Initiating Cues:** The CRS has directed you to parallel Offsite Power to the ENS-SWG1A per SOP-0053 using the normal supply breaker ACB06.
- Terminating Cue:** Offsite Power paralleled with ENS-SWG1A.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I Systems JPM No. B.1.6**

**JPM NUMBER:** 500-02, Rev. 0

**TASK DESCRIPTION:** Bypass Control Rod position information in RACS Cabinets

**K/A REFERENCE & RATING:** 214000 A4.01 (3.2/3.3)

201005 K1.05 (3.5/3.5) A2.02 (2.8/3.2)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance:  X  Actual Performance: \_\_\_\_\_  
Control Room:  X  Simulator: \_\_\_\_\_ In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 7

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/01/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Robert Peek</u>	<u>0546</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:



## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Bypass Control Rod position information in RACS Cabinets

**Required Power:** NA

**IC No.:** NA

**Notes:** This JPM is to be performed in the Main Control Room.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	SOP-0071, Rod Control and Information System (SYS #500)
<b>Required Materials:</b>	SOP-0071, Rod Control and Information System (SYS #500)
<b>Required Plant Condition:</b>	Any
<b>Applicable Objectives:</b>	STM-500, Objective H14
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A reactor startup is in progress. Due to failed Rod Position Indication channels on Control Rod 24-17, the RC&IS Pattern Controller has initiated a Control Rod Withdrawal Block. In order to continue the startup, it is necessary bypass Control Rod 24-17 in the RACS Cabinets.

**Initiating Cue:** The CRS has directed you to bypass both Rod Position Indication channels for Control Rod 24-17 in the RACS Cabinets..

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. On Attachment 5, Full Core Map, determine the binary numbers corresponding to the column (X) and the row (Y) coordinates for the rod to be bypassed.	Obtains address for CR 24-17 as X coordinate = 00010 and Y coordinate = 00110	_____	<b>NOTE:</b> Key must be obtained to open plexiglass covers in RACS. covers need NOT be opened.
* 2. On H13-P651, Rod Bypass File A3, enter the address obtained above into the Bypass Cards Ident Select Switches of one bypass card.	Demonstrates entering X coordinate = 00010 and Y coordinate = 00110 using Ident Select Switches	_____	<b>NOTE:</b> Inform candidate, plexiglass covers need NOT be opened.

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 3. On H13-P652, Rod Bypass File A3, enter the same address as Step 5.10.2 into the Bypass Cards Ident Select Switches of one bypass card.	Demonstrates entering X coordinate = 00010 and Y coordinate = 00110 using Ident Select Switches	_____	
* 4. On H13-P651, Rod Bypass File A3, place the BYPASS SWITCH in the BYPASSED Position on the effected card.	Demonstrates placing BYPASS SWITCH in BYPASSED position	_____	<b>CUE:</b> BYPASS SWITCH in BYPASSED
* 5. On H13-P652, Rod Bypass File A3, place the BYPASS SWITCH in the BYPASSED Position on the effected card.	Demonstrates placing BYPASS SWITCH in BYPASSED position	_____	<b>CUE:</b> BYPASS SWITCH in BYPASSED
6. Check that the BYPASSED LED comes on for the correct Control Rod.	Requests ATC to check POSITION BYP. LED ON for Control Rod 22-17 on P680.	_____	<b>CUE:</b> As ATC at P680, GREEN POSITION BYP. LED is ON for Control Rod 22-17.
7. Direct a second technically qualified operator to verify the Control Rod position information is bypassed correctly.	Requests verification from second operator.	_____	<b>CUE:</b> JPM is terminated.

**Terminating Cue:** Both Rod Position Indication channels in the RACS for Control Rod 24-17 are bypassed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** A reactor startup is in progress.
- Due to failed Rod Position Indication channels on Control Rod 24-17, the RC&IS Pattern Controller has initiated a Control Rod Withdrawal Block.
- In order to continue the startup, it is necessary bypass Control Rod 24-17 in the RACS Cabinets.
- Initiating Cues:** The CRS has directed you to bypass both Rod Position Indication channels for Control Rod 24-17 in the RACS Cabinets.
- Terminating Cue:** Both Rod Position Indication channels in the RACS for Control Rod 24-17 are bypassed.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I Systems JPM No. B.1.7  
SRO-U JPM No. B.1.3**

**JPM NUMBER:** 403-03, Rev. 3

**TASK DESCRIPTION:** Place the Drywell in High Volume Purge Using Standby Gas Treatment Train A.

**K/A REFERENCE & RATING:** 261000 K1.01 (3.4/3.6) K1.02 (3.0/3.4)  
A4.01 (3.2/4.0) A4.03 (3.0/3.0)  
288000 A2.04 (3.7/3.8) A4.01 (3.1/2.9)  
272000 A1.01 (3.2/3.2)

**TASK REFERENCE:** 2223120101

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 9

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/02/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Steve Fiore</u>	<u>0124</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:

## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Place the Drywell in High Volume Purge Using Standby Gas Treatment Train A.

**Required Power:** 0%, Cold Shutdown Mode 4

**IC No.:** 147

**Notes:**

1. Remove HOLD Tags from dampers HVR-AOV125 & 126 and HVR-AOV147 &148 P863.
2. imf RMS-RE103, 2.00 E-7
3. Caution statement does not allow operation of the Drywell Purge valves in Modes 1, 2 or 3.



## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** SOP-0059, Containment HVAC System (SYS #403)

**Required Materials:** SOP-0059, Containment HVAC System (SYS #403)

**Required Plant Condition:** Cold Shutdown Mode 4

**Applicable Objectives:** STM-403, Objectives H2, H7, and H8  
STM-257, Objectives H3, H5, H6, and H7

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The plant is shutdown and depressurized in Mode 4. Drywell Purge is required prior to opening the Drywell for maintenance access. Administrative controls on HVR-AOV125 & 126, DW PURGE BACKUP ISOL and HVR-AOV147 & 148, DW PURGE ISOL have been released and the HOLD tags on P863 removed.

**Initiating Cue:** The CRS has directed you to place the Reactor Building HVAC in Drywell High Volume Purge using Standby Gas Treatment Train A, GTS-FN1A using SOP-0059, beginning at Step 5.7.3.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Verify the following dampers are open: <ul style="list-style-type: none"> <li>• HVR-AOD164, UP STREAM ISOL SUPPLY</li> <li>• HVR-AOD143, DN STREAM ISOL SUPPLY</li> </ul>	Both dampers are open.	_____	<b>CUE:</b> If requested, confirm that the plant is in MODE 4.

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>* 2. Open the following dampers and valves:</p> <ul style="list-style-type: none"> <li>• HVR-AOV165, CONTMT SPLY OUTBD ISOL</li> <li>• HVR-AOV123, CONTMT SPLY INBD ISOL</li> <li>• HVR-AOV125 &amp; 126, DW PURGE BACKUP ISOL</li> <li>• HVR-AOV147 &amp; 148, DW PURGE ISOL</li> <li>• HVR-AOV128, CONTMT RTN INBD ISOL</li> <li>• HVR-AOV166, CONTMT RTN OUTBD ISOL</li> <li>• HVR-AOD245, CONTMT PURGE TO SGT</li> <li>• HVR-AOD162, CONTMT PURGE TO SGT</li> </ul>	<p>All listed dampers are open.</p>	<p align="center">_____</p>	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>* 3. Start GTS-FN1A(B), SGT EXH FAN A(B) by depressing the START Pushbutton and verify the following:</p> <ol style="list-style-type: none"> <li>1. GTS-AOD1A(B), SGT FILTER A(B) SUCT ISOL opens.</li> <li>2. GTS-FN1A(B), SGT EXH FAN A(B) starts.</li> <li>3. GTS-AOD3A(B), SGT EXH FAN A(B) DISCH opens.</li> </ol>	<p>Standby Gas Treatment GTS-FN1A START pushbutton depressed.</p>	<p align="center">_____</p>	
<p>4. <u>IF</u> an Annulus Mixing System Initiation is received, <u>THEN</u> take action in accordance with the associated annunciator Alarm Response Procedures.</p>	<p>Monitor P863 for annunciators</p>	<p align="center">_____</p>	<p><b>NOTE:</b> Annulus Mixing will not receive and initiation signal.</p>
<p>* 5. Place HVR-FN8, HIGH VOL CONTMT/DW PURGE to START and verify HVR-AOD244, HIGH VOL FAN DISCH opens.</p>	<p>Demonstrates raising Lever and releasing Lever when engine has started..</p>	<p align="center">_____</p>	<p><b>CUE:</b> Engine has started.</p>

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>6. Verify proper filter operation by observing the following differential pressure and radiation indications:</p> <ul style="list-style-type: none"> <li>• GTS-FLT1A(B), SGT FILTER TRAIN local component differential pressure instruments</li> <li>• RMS-RE21A&amp;B, CONTMT PURGE ISOL</li> <li>• RMS-RE103, SGT FILTER EXH RAD MONITOR</li> </ul>	<p>Dispatch Reactor Building Operator to check GTS Filter Train A local indications.</p> <p>Monitor radiation indications</p>		<p><b>CUE:</b> Reactor Building Operator responds that he will check GTS Filter Train A local indications</p> <p><b>CUE:</b> Radiation monitors are operating and reading less than ALERT alarm values with no unexpected trends</p>

**Terminating Cue:** Drywell High Volume Purge is in progress using Standby Gas Treatment Train A, GTS-FN1A.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                    **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** The plant is shutdown and depressurized in Mode 4.  
Drywell Purge is required prior to opening the Drywell for maintenance access.  
Administrative controls on HVR-AOV125 & 126, DW PURGE BACKUP ISOL and HVR-AOV147 & 148, DW PURGE ISOL have been released and the HOLD tags on P863 removed.
- Initiating Cues:** The CRS has directed you to place the Reactor Building HVAC in Drywell High Volume Purge using Standby Gas Treatment Train A, GTS-FN1A using SOP-0059, beginning at Step 5.7.3.
- Terminating Cue:** Drywell High Volume Purge is in progress using Standby Gas Treatment Train A, GTS-FN1A.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I and SRO-U  
Systems JPM No. B.2.1**

**JPM NUMBER:** 800-21, Rev. 1

**TASK DESCRIPTION:** Establish Emergency Containment Venting per EOP Enclosure  
21

**K/A REFERENCE & RATING:** 223002 K1.10 (3.1/3.2) K4.08 (3.3/3.7)  
50000 EK1.01 (3.3/3.9)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance:  X  Actual Performance:    
Control Room:  X  Simulator:   In-Plant:  X

**COMPLETION TIME:** 15 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 5

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/03/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Robert Peek</u>	<u>0546</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:



## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Establish Emergency Containment Venting per EOP Enclosure 21

**Required Power:** NA

**IC No.:** NA

**Notes:** This JPM is to be performed in the Main Control Room and the Plant.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks

**Required Materials:** EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks  
Key to Control Room Emergency Locker

**Required Plant Condition:** Any

**Applicable Objectives:** HLO-516, Objective 1

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A large break LOCA has occurred in the Drywell. Containment pressure is 12 psig and Containment Hydrogen concentration cannot be maintained in the Safe Zone of the Hydrogen Deflagration Overpressure Limit (HDOL). Normal Containment Vent and Purge, Hydrogen Mixing and the Hydrogen Recombiners have been secured. EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has been installed.

**Initiating Cue:** The CRS has directed you install EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. OBTAIN EOP-0005 ENCL 21 jumper kit from the Control Room Emergency Locker.	Obtains jumper kit.	_____	
2. INSPECT kit for 2 jumpers	Kit contains two jumpers.	_____	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>* 3. DEFEAT isolation interlocks as follows:</p> <p>1. Location:1H13*P852 Bay E(left side of bay)</p> <ul style="list-style-type: none"> <li>• Affected Terminal Boards:</li> </ul> <p>TB0175 (5th row of terminal boards from door, 2nd board from top)</p> <p>TB0317(2nd row of terminal boards from door, top terminal board)</p> <p>Jumper No. 1</p> <p>JUMPER Terminal 12 on TB0175</p> <p style="text-align: center;">to</p> <p>Terminal 2 on TB0317</p>	<p>Locates P852 Bay E and describes installation of Jumper No. 1.</p>	<p align="center">_____</p>	<p><b>CUE:</b> Jumper No.1 installed.</p>



**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
8.	3. VERIFY the SGTS in operation with flow to the main plant exhaust duct.	Verifies SGTS flow to Main Plant Stack.	_____	<b>CUE:</b> SGTS is aligned to Main Plant Stack.
9.	4. VERIFY 1IAS*MOV107 INST AIR SHUTOFF VALVE <u>AND</u> 1IAS*MOV106 INST AIR OUTBD ISOL are open (1H13*P870)	Verifies both MOVs are open.	_____	<b>CUE:</b> 1IAS*MOV107 and 1IAS*MOV106 both have RED light on, GREEN light off
10.	5. VERIFY 1HVR*AOV128 CONTMT RTN INBD ISOL is open (1H13*P863).	Verifies AOV is open.	_____	<b>CUE:</b> 1HVR*AOV128 RED light on, GREEN light off
* 11.	6. OPEN 1HVR-AOD127 CONTMT PURGE RTN ISOL (1H13*P863).	Demonstrates opening 1HVR-AOD127	_____	<b>CUE:</b> 1HVR-AOD127 RED light on, GREEN light off.
* 12.	7. OPEN 1CPP*MOV105 H2 PURGE FAN DISCH VALVE TO ANNULUS at 1CPP-PNL102 (171 ft Aux Bldg East Side, Containment Purge FLT 6/HVR FAN 14 Room).	Locates panel, opens door with key and demonstrates opening CPP*MOV105	_____	<b>CUE:</b> CPP*MOV105 RED light on, GREEN light off..

**Terminating Cue:** EOP-0005, Enclosure 21 installation has been completed and the Containment is being vented.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** A large break LOCA has occurred in the Drywell.
- Containment pressure is 12 psig and Containment Hydrogen concentration cannot be maintained in the Safe Zone of the Hydrogen Deflagration Overpressure Limit (HDOL).
- Normal Containment Vent and Purge, Hydrogen Mixing and the Hydrogen Recombiners have been secured.
- EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has been installed.
- Initiating Cues:** The CRS has directed you install EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks.
- Terminating Cue:** EOP-0005, Enclosure 21 installation has been completed and the Containment is being vented.



**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I and SRO-U  
Systems JPM No. B.2.2**

**JPM NUMBER:** 200-08, Rev. 0

**TASK DESCRIPTION:** Place Div. 1 Standby Service Water System in service from the Remote Shutdown Panel (with SWP-P2A Pump Trip)

**K/A REFERENCE & RATING:** 264000 K6.07 (3.8/3.9)

295016 AK2.01 (4.4/4.5) AK2.02 (4.0/4.1)

**TASK REFERENCE:** 400076004001

**TESTING METHOD:** Simulate Performance:  X  Actual Performance: \_\_\_\_\_  
Control Room: \_\_\_\_\_ Simulator: \_\_\_\_\_ In-Plant:  X

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** Yes

**SAFETY FUNCTION GROUP** 6

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>862</u> KCN	<u>12/01/02</u> DATE:
<b>Ops Validation:</b>	<u>Robert Peek</u>	<u>0546</u> KCN	<u>12/07/02</u> DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u> KCN	<u>12/09/02</u> DATE:

## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Place Div. 1 Standby Service Water System in service from the Remote Shutdown Panel (with SWP-P2A Pump Trip)

**Required Power:** N/A

**IC No.:** N/A

**Notes:** This JPM is to be performed in the Plant.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

<b>References for Development:</b>	AOP-0031, Shutdown From Outside Main Control Room
<b>Required Materials:</b>	AOP-0031, Attachment 1, AOP Step Detailed Instructions
<b>Required Plant Condition:</b>	Any
<b>Applicable Objectives:</b>	STM-200, Objectives H2, H3, H11, H12 HLO-537, Objective 7
<b>Safety Related Task:</b>	(If K/A less than 3.0)
<b>Control Manipulations:</b>	NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The Control Room has been evacuated. The Reactor is in Hot Shutdown and control has been established at the Remote Shutdown Panel. There has been no fire. Normal Service Water is NOT available.

**Initiating Cue:** The CRS has directed you to place the Division 1 Standby Service Water System in service by starting SWP-P2A (preferred) or SWP-P2C from the appropriate Remote Shutdown Panel.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. On C61-P001, verify both LOCAL SWP EMERGENCY CONTROL ALIGNED Lights are on.	Both lights on.	_____	<b>CUE:</b> Inform operator that both lights are on.
* 2. On RSS-PNL101, start SWP-P2A	SWP-P2A tripped (or started and tripped).	_____	<b>CUE:</b> SWP-P2A Pump Status RED light on, GREEN light off; and immediately, RED light off, GREEN light on.  <b>NOTE:</b> <i>ALTERNATE PATH</i>

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 3. On EGS-PNL4C, start SWP-P2C	SWP-P2C started.	_____	<b>CUE:</b> SWP-P2C Pump Status RED light on, GREEN light off
4. Verify SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve opens.	SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve open	_____	<b>CUE:</b> SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve status RED light on, GREEN light off
* 5. Open SWP-MOV55A STBY CLG TOWER 1 INLET	SWP-MOV55A STBY CLG TOWER 1 INLET open	_____	<b>CUE:</b> SWP-MOV55A STBY CLG TOWER 1 INLET Valve status RED light on, GREEN light off.
* 6. Close SWP-MOV96A and B NORM SVC WTR RETURN Valves	SWP-MOV96A and B NORM SVCE WTR RETURN Valves closed	_____	<b>CUE:</b> SWP-MOV96A and B NORM SVCE WTR RETURN Valves status RED lights off, GREEN lights on.
7.			<b>CUE: No excessive leakage has been identified.</b>

**Terminating Cue:** Division 1 Standby Service Water is in service.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** The Control Room has been evacuated.  
The Reactor is in Hot Shutdown and control has been established at the Remote Shutdown Panel.  
There has been no fire.  
Normal Service Water is NOT available.
- Initiating Cues:** The CRS has directed you to place the Division 1 Standby Service Water System in service by starting SWP-P2A (preferred) or SWP-P2C from the appropriate Remote Shutdown Panel.
- Terminating Cue:** Division 1 Standby Service Water is in service.

**RBS JOB PERFORMANCE MEASURE**

**ES-301 RO/SRO-I JPM No. B.2.3**

**JPM NUMBER:** 251-01, Rev. 1

**TASK DESCRIPTION:** Emergency Start of Diesel Fire Pump FPW-P1A

**K/A REFERENCE & RATING:** 286000 K4.05 (3.7/3.8) K5.05 (3.0/3.1)  
A2.08 (3.2/3.3) A3.01 (3.4/3.4)  
A4.06 (3.4/3.4)  
295031 EA1.08 (3.8/3.9)

**TASK REFERENCE:** 286018001004/286020004004

**TESTING METHOD:** Simulate Performance:  X  Actual Performance: \_\_\_\_\_  
Control Room: \_\_\_\_\_ Simulator: \_\_\_\_\_ In-Plant:  X

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** Yes

**ALTERNATE PATH (FAULTED):** Yes

**SAFETY FUNCTION GROUP** 8

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/01/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Robert Peek</u>	<u>0546</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:



## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Emergency Start of Diesel Fire Pump FPW-P1A

**Required Power:** N/A

**IC No.:** N/A

**Notes:** This JPM is to be performed in the Plant.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** SOP-0037, Fire Protection Water System Operating Procedure

**Required Materials:** SOP-0037, Cover – Page 6 and Pages 8 – 11

**Required Plant Condition:** Any

**Applicable Objectives:** STM-250, Objectives H4 and N7

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** The plant has experienced a Station Blackout with Diesel Fire Pump FPW-P1B tagged out. It is now necessary to inject into the RPV with Fire Water due to a failure of RCIC. Diesel Fire Pump FPW-P1A failed to auto start and attempts to start it from the Auxiliary Control Room have been unsuccessful. The Outside Operator is starting the Diesel Driven Air Compressor.

**Initiating Cue:** The CRS has directed you to locally start Diesel Fire Pump FPW-P1A.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
1. Place the selector switch on controller FPW-MST1A, DIESEL FIRE PUMP 1A CONTROLLER in MANUAL 1 or MANUAL 2.	Locates selector switch and demonstrates placing it in the MANUAL 1 or MANUAL 2 position.	—	
2. Depress and hold local START pushbutton for 15 seconds or until engine starts for the following: <ul style="list-style-type: none"> <li>• FPW-P1A, DIESEL DRIVEN FIRE PUMP A</li> </ul>	Locates START pushbutton and demonstrates depressing and holding for 15 seconds.	—	CUE: No response from FPW-P1A engine starter.  <b>NOTE: ALTERNATE PATH</b>

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 3. Open FPW-SOV19A(B),FUEL SUPPLY SOLENOID by turning the knurled manual knob clockwise or IN to open the solenoid.	Locates knurled knob for FPW-SOV19A and demonstrates turning knob clockwise.	_____	CUE: SOV19A is open.
4. Throttle open FPW-V179, FPW-P1A(B) ENGINE COOLING SYSTEM BYPASS VALVE and FPW-V3009, FPW-P1A(B) ENGINE COOLING SYSTEM BYPASS VALVE in the cooling water supply piping.	Demonstrates operation of valve handwheels to throttle open valves to establish cooling water supply pressure <50 psig	_____	CUE: Cooling water pressure is 40 psig.
* 5. Engage starter per the following:  1) Raise the Lever on either of the two starter contactors.  2) Release the Lever as soon as the engine starts.	Demonstrates raising Lever and releasing Lever when engine has started..	_____	CUE: Engine has started.

**Terminating Cue:** Diesel Fire Pump FPW-P1A is started.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:**

The plant has experienced a Station Blackout with Diesel Fire Pump FPW-P1B tagged out.

It is now necessary to inject into the RPV with Fire Water due to a failure of RCIC.

Diesel Fire Pump FPW-P1A failed to auto start and attempts to start it from the Auxiliary Control Room have been unsuccessful.

The Outside Operator is starting Diesel Air Compressor, IAS-C4.

**Initiating Cues:**

The CRS has directed you to locally start Diesel Fire Pump FPW-P1A.

**Terminating Cue:**

Diesel Fire Pump FPW-P1A is started.

**RBS JOB PERFORMANCE MEASURE**

**Backup JPM No. B.1.1**

**JPM NUMBER:** 209-02, Rev. 3

**TASK DESCRIPTION:** Shutdown RCIC Following Automatic Initiation

**K/A REFERENCE & RATING:** 217000 A4.01 (3.7/3.7) A4.02 (3.9/3.9)  
A4.03 (3.4/3.3)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 4

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/04/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Steve Fiore</u>	<u>0124</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:

## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Shutdown RCIC following Automatic Initiation

**Required Power:** 100%

**IC No.:** 150

**Notes:**



## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** SOP-0035, Reactor Core Isolation Cooling (SYS #209)

**Required Materials:** SOP-0035, Reactor Core Isolation Cooling (SYS #209)

**Required Plant Condition:** 100%

**Applicable Objectives:** STM-209, Objectives H4

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A spurious automatic initiation of RCIC has occurred. RHR A has been placed in Suppression Pool Cooling.

**Initiating Cue:** The CRS has directed you to coordinate with the ATC and shutdown RCIC returning it to Standby Mode.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. When automatic RCIC operation is no longer desired perform the following:  Place E51-C002C GLAND SEAL COMPRESSOR to start.	Gland Seal Compressor started.  RED light ON  GREEN light OFF	_____	
* 2. Depress RCIC INITIATION RESET Pushbutton and check the white light goes OFF.	White light above RESET pushbutton off.	_____	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>3. If RCIC flow to RPV is to be reduced, perform the following:</p> <p>Open E51-F059 RCIC TEST RETURN VLV TO CST. Throttle E51-F022 RCIC TEST BYPASS VLV TO CST as required to control injection flow rate to RPV.</p> <p><u>WHEN</u> RCIC is no longer required, <u>THEN</u> shut down RCIC per Section6.</p>	<p>Alerts ATC he is going to trip RCIC.</p>	<p>_____</p>	<p>Cue: As CRS, RCIC is not required for RPV injection.</p>
<p>* 4. Depress E51A-S17, RCIC TURBINE TRIP pushbutton</p>	<p>Pushbutton depressed and turbine trips.</p>	<p>_____</p>	
<p>5. Verify E51-MOVC002, RCIC TRIP &amp; THROTTLE VALVE POSITION indicates closed.</p>	<p>Trip and Throttle Valve is closed.</p> <p>RED light ON</p> <p>GREEN light OFF</p>	<p>_____</p>	
<p>6. Verify RCIC speed lowering as indicated on E51-C002-1, RCIC TURB SPEED.</p>	<p>RCIC speed lowering</p>	<p>_____</p>	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
<p>7. Reset any RCIC Initiation signals as follows:</p> <ul style="list-style-type: none"> <li>• Depress the RCIC INITIATION RESET pushbutton.</li> <li>• Verify RCIC INITIATION RESET white light is off.</li> </ul>	<p>Verifies white light is off.</p>	<p align="center">—</p>	
<p>* 8. Close E51-F045, RCIC STEAM SUPPLY TURBINE STOP VALVE and verify the following are open:</p> <ul style="list-style-type: none"> <li>• E51-F025, RCIC STM SPLY DR POT UP STREAM ISOL VALVE</li> <li>• E51-F026, RCIC STM SUPLY DR POT DN STREAM ISOL VALVE</li> <li>• E51-F004, RCIC TURB EXH DR POT UP STREAM ISOL VALVE</li> <li>• E51-F005, RCIC TURB EXH DR POT DN STREAM ISOL VALVE</li> </ul>	<p>E51-F045 is closed.</p> <p align="center">GREEN light ON RED light OFF</p> <p>All listed valves are open.</p> <p align="center">RED light ON GREEN light OFF</p>	<p align="center">—</p>	

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
9. Verify the following are closed: <ul style="list-style-type: none"> <li>• E51-F013, RCIC INJECT ISOL VALVE</li> <li>• E51-F022, RCIC TEST BYPASS VLV TO CST</li> <li>• E51-F059, RCIC TEST RETURN VLV TO CST</li> <li>• E51-F019, RCIC MIN FLOW VLV TO SUPPRESSION POOL</li> </ul>	All listed valves are closed.  GREEN light ON  RED light OFF	_____	
10. Close E51-C002, RCIC TRIP & THROTTLE VALVE OPERATOR.	E51-C002 Operator closed.  GREEN light ON  RED light OFF	_____	
* 11. Open E51-C002 and verify RCIC TRIP & THROTTLE VALVE POSITION red light is on.	E51-C002 open.  RED light ON  GREEN light OFF	_____	
* 12. Verify E51-R600, RCIC PUMP FLOW FLOW CONTROLLER HVYC002 in AUTO and set to 600 gpm.	E51-R600 set to 600 gpm.	_____	

**Terminating Cue:** RCIC is shutdown in Standby Mode.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                    **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** A spurious automatic initiation of RCIC has occurred.  
RHR A has been placed in Suppression Pool Cooling.

**Initiating Cues:** The CRS has directed you to coordinate with the ATC and shutdown RCIC returning it to Standby Mode.

**Terminating Cue:** RCIC is shutdown in Standby Mode.

**RBS JOB PERFORMANCE MEASURE**

**Backup JPM No. B.1.2**

**JPM NUMBER:** 800-20, Rev. 4

**TASK DESCRIPTION:** Bypass Drywell Cooling Isolation Interlocks per EOP Enclosure 20

**K/A REFERENCE & RATING:** 223001 A2.10 (3.6/3.8)

295028 EK2.04 (3.6/3.8) EA1.03 (3.9/3.9)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance: \_\_\_\_\_ Actual Performance:  X   
Control Room: \_\_\_\_\_ Simulator:  X  In-Plant: \_\_\_\_\_

**COMPLETION TIME:** 10 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** Yes

**SAFETY FUNCTION GROUP** 5

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/06/02</u>
		KCN	DATE
<b>Ops Validation:</b>	<u>Steve Fiore</u>	<u>0124</u>	<u>12/07/02</u>
		KCN	DATE
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE



## RBS JOB PERFORMANCE MEASURE

### SIMULATOR SETUP SHEET

**Task Description:** Bypass Drywell Cooling Isolation Interlocks per EOP Enclosure 20

**Required Power:** 0%, Steam Leak in Drywell

**IC No.:** 149

**Notes:** Insert malfunction **MSS01, 80** gpm leak for slow rising Drywell temperature.

When candidate begins performing Step 3 of JPM, raise leak to **250** gpm.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks

**Required Materials:** EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks  
Key to Control Room Emergency Locker

**Required Plant Condition:** Any

**Applicable Objectives:** HLO-516, Objective 1

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A steam leak exists in the Drywell resulting in a LOCA BOP Isolation on High Drywell Pressure. With Drywell temperature above 180°F, EOP-2 Step DWT-3 states, “Operator All available drywell cooling , defeating isolation interlocks (ENCL 20) if necessary.”

**Initiating Cue:** The CRS has directed you to install EOP-0005, Enclosure 20, Defeating Drywell Cooling Isolation Interlocks.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. OBTAIN EOP-0005 ENCL 20 keys (2).	Obtains keys from EOP ENCL key cabinet.	_____	
2. VERIFY Normal Service Water pressure on 1-SWP-PI124 (H13*P870) <u>OR</u> Standby Service Water pressure on 1SWP*PR50A(B) (H13*P870) is greater than Containment pressure and Drywell pressure on 1CMS*PR2A(B) (H13*P808).	Normal Service Water pressure is greater than Containment and Drywell pressure.	_____	



**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 6. <u>IF</u> any drywell temperature, as indicated on CMS-TR41A/B (1H13*P808) is greater than 200 degrees F <u>THEN</u> , notify the CRS/OSS that this enclosure cannot be completed.	Notes drywell temperature on CMS-TR41A is >200°F.  Notifies CRS that enclosure cannot be completed.	_____	<b>CUE:</b> As CRS, acknowledge Enclosure cannot be completed.

**Terminating Cue:** EOP-0005, Enclosure 20 installation has been terminated due to drywell temperature >200°F.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **RBS JOB PERFORMANCE MEASURE**

### **JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** A steam leak exists in the Drywell resulting in a LOCA BOP Isolation on High Drywell Pressure.

With Drywell temperature above 180°F, EOP-2 Step DWT-3 states,  
“Operator All available drywell cooling , defeating isolation interlocks (ENCL 20) if necessary.”

**Initiating Cues:** The CRS has directed you to install EOP-0005, Enclosure 20, Defeating Drywell Cooling Isolation Interlocks.

**Terminating Cue:** EOP-0005, Enclosure 20 installation has been completed.

**RBS JOB PERFORMANCE MEASURE**

**Backup JPM No. B.2.1**

**JPM NUMBER:** 700-09, Rev. 3

**TASK DESCRIPTION:** Respond To A Fire Outside The Main Control Room By Verifying SFC Vavle Position (SFC cooling Upper Pools.

**K/A REFERENCE & RATING:** 233000 A2.11 (3.6/3.8)

600000 AK3.04 (2.8/3.4)

**TASK REFERENCE:**

**TESTING METHOD:** Simulate Performance:  X  Actual Performance: \_\_\_\_\_  
Control Room: \_\_\_\_\_ Simulator: \_\_\_\_\_ In-Plant:  X

**COMPLETION TIME:** 20 minutes

**MAX. TIME:** N/A

**JOB LEVEL:** RO/SRO

**TIME CRITICAL:** No

**EIP CLASSIFICATION REQUIRED:** No

**PRA RISK DOMINATE:** No

**ALTERNATE PATH (FAULTED):** No

**SAFETY FUNCTION GROUP** 9

<b>Prepared by:</b>	<u>Roger Persons</u>	<u>0862</u>	<u>12/04/02</u>
		KCN	DATE:
<b>Ops Validation:</b>	<u>Robert Peek</u>	<u>0546</u>	<u>12/07/02</u>
		KCN	DATE:
<b>Approved by:</b>	<u>Mike Wagner</u>	<u>0035</u>	<u>12/09/02</u>
		KCN	DATE:



## **RBS JOB PERFORMANCE MEASURE**

### **SIMULATOR SETUP SHEET**

**Task Description:** Respond To A Fire Outside The Main Control Room By Verifying SFC Vavle Position (SFC cooling Upper Pools.

**Required Power:** NA

**IC No.:** NA

**Notes:** This JPM is to be performed in the plant.

## RBS JOB PERFORMANCE MEASURE

### DATA SHEET

**References for Development:** AOP-0052, Fire Outside The Main Control Room In Areas Containing Safety Related Equipment, Attachment 6

**Required Materials:** AOP-0052, Fire Outside The Main Control Room In Areas Containing Safety Related Equipment, Attachment 6

**Required Plant Condition:** Shutdown with Fire

**Applicable Objectives:** HLO-544, Objective 6

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** NA

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RBS JOB PERFORMANCE MEASURE

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

**Initial Conditions:** A fire is burning in the D-Tunnel Cable Chase (EL 70'). SFC is being used to cool the Upper Pools.

**Initiating Cue:** The CRS has directed you to complete AOP-0052, Attachment 6, Verification Of SFC Valve Position, Step 1.

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 1. At CB, 95 ft el, EHS-MCC8A, open the following: <ul style="list-style-type: none"> <li>• BKR 3B, SFC-MOV119 CONTMT FUEL POOL INLET ISOL VALVE</li> <li>• BKR 1B SFC-MOV122 CONTMT OUTBOARD ISOL VALVE TO COOLING PMP.</li> </ul>	Breakers 3B and 1B open	—	EHS-MCC8A is located on the 95' El. Of the Control Building in the Div. 1 Switchgear Room.

**RBS JOB PERFORMANCE MEASURE**

PERFORMANCE STEP	STANDARD	S/U	COMMENTS
* 2. At AB, east, 141 ft el, EHS-MCC2B, open Breaker 1B, SFC-MOV120 RETURN TO COOLING CONTMT INBD ISOLATION.	Breaker 1B is open	_____	EHS-MCC2B is located on the 141' El. of the Aux. Bldg East Side.
3. At Containment, 133 ft el, Az 180°, verify SFC-MOV120 RETURN TO COOLING CONTMT INBD ISOLATION is open.	SFC-MOV120 is open.	_____	Cue: As CRS, RCIC is not required for RPV injection.
* 4. Verify SFC-MOV119, CONTMT FUEL POOL INLET ISOL VALVE is open.	SFC-MOV119 is open.	_____	SFC-MOV119 and 120 are located in the Fuel Bldg, 137' El, in the room at the top of the ladder on the southeast end of the Spent Fuel Pool. This room requires a high radiation door key for entry. <b>Entry need not be made.</b>
5. Verify SFC-MOV122, CONTMT OUTBOARD ISOL VALVE TO COOLING PMP is open.	SFC-MOV122 is open.	_____	

**Terminating Cue:** AOP-0052, Attachment 6, Step 1 is completed.

**RBS JOB PERFORMANCE MEASURE**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**                      **Satisfactory / Unsatisfactory**

Evaluator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**RBS JOB PERFORMANCE MEASURE**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** A fire is burning in the D-Tunnel Cable Chase (EL 70').  
SFC is being used to cool the Upper Pools.

**Initiating Cues:** The CRS has directed you to complete AOP-0052, Attachment 6,  
Verification Of SFC Valve Position, Step 1.

**Terminating Cue:** AOP-0052, Attachment 6, Step 1 is completed.

RIVER BEND STATION

NUCLEAR TRAINING DEPARTMENT

LICENSE OPERATOR SIMULATOR TRAINING

\*TPP-7-009  
(CROSS REFERENCE)

EXAM SCENARIO NUMBER

\*R-SIS-18.0  
(DOC. NO.)

TOPIC

\* Loss of RPS A / IAS-MOV106 fails to Open / Steam Leak/Rupture in the Drywell

AVERAGE DURATION

\* 1.0 HOUR

PREPARED BY:	<u>Roger Persons / 0862</u>	Date:	<u>11/15/02</u>
	INSTRUCTOR / KCN		
REVIEWED BY:	<u>Mike Wagner / 0035</u>	Date:	<u>11/22/02</u>
	TECHNICAL REVIEW / KCN		
VALIDATED BY:	<u>Joseph Kelley / 1410</u>	Date:	<u>11/25/02</u>
	OPERATIONS CRS / KCN		

\* Indexing Information

## **I. DESCRIPTION OF SCENARIO**

The crew assumes the shift at 28% power. Reactor Feed Pump FWS-P1A Lube System is started by the UO and the ATC raises power with control rods. Reactor pressure transmitter B21-N078A fails high causing a half-scam condition which remains while maintenance works to restore the transmitter. A failure of the C MSL flow instrument causes a low level alarm condition accompanied by a Recirc FCV Runback. Once the ATC recovers from the FCV Runback, a loss of RPS Bus A occurs due to a trip of RPS MG Set A.

After transferring RPS Bus A to its alternate power supply, the UO will reset the Containment Isolation logic and find that the IAS-MOV106 the containment isolation valve for Instrument Air will not open. Prior to the Inboard MSIVs closing the Crew should initiate a manual scram. RPS will fail to scram but the manual initiation of ARI will result in all control rods inserting.

Upon closure of the Inboard MSIVs a small (40 gpm) steam leak is initiated in the Drywell causing an isolation and ECCS initiation on High Drywell Pressure. The crew will enter EOP-1 and EOP-2. After EOP entry, the leak will propagate to a Main Steam Line Rupture. This will require the crew to declare that RPV level cannot be determined and enter contingency procedure EOP-4, RPV Flooding.

## **II. TERMINAL OBJECTIVES**

1. Recognize and respond to a trip of one RPS MG Set in accordance with plant procedures.
2. Recognize and respond to a failure to scram in accordance with plant procedures.
3. Establish safe and stable plant conditions following a steam line break inside the Drywell in accordance with plant procedures.



### **III. PERFORMANCE OBJECTIVES**

#### **A. CRS (SRO)**

1. Direct the response to a trip of RPS MG Set A in accordance with AOP-0010, Loss of One RPS Bus.
2. Direct the response to a failure of IAS-MOV106 to re-open in accordance with AOP-0001, Reactor Scram.
3. Direct the response to high Drywell pressure/temperature and coordinate the implementation of EOP-1, RPV Control and EOP-2, Primary Containment Control.
4. Direct the response to loss of RPV level indication in accordance with EOP-1 and EOP-4, RPV Flooding.
5. Declare Site Area Emergency due to inability to determine RPV level.

#### **B. ATC (RO)**

1. Respond to a trip of RPS MG Set A in accordance with AOP-0010, Loss of One RPS Bus.
2. Respond to a reactor scram condition in accordance with AOP-0001, Reactor Scram.
3. Respond to a Main Turbine trip in accordance with AOP-0002, Main Turbine and Generator Trips.
4. Respond to a high Drywell and Containment pressure and temperature as directed.
5. Respond to loss of RPV level indication in accordance with EOP-1 and EOP-4, RPV Flooding as directed.

**C. UO (RO)**

1. Respond to a trip of RPS MG Set A in accordance with AOP-0010, Loss of One RPS Bus.
2. Respond to a failure of IAS-MOV106 to reopen in accordance with AOP-0001, Reactor Scram
3. Respond to a high Drywell and Containment pressure and temperature as directed.
4. Respond to HPCS failure to auto start and manually start.
5. Respond to a high Drywell pressure isolation in accordance with AOP-0003, Automatic Isolations.
6. Respond to loss of RPV level indication in accordance with EOP-1 and EOP-4, RPV Flooding as directed.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

INITIAL CONDITION	TRAINING FOCUS	EQUIPMENT STATUS	REQUIRED DOCUMENTS
	<p><b>GOP-0001</b>, Plant Startup</p> <p><b>AOP-0006</b>, Condensate / Feedwater Failures</p> <p><b>AOP-0010</b>, Loss of One RPS Bus</p> <p><b>EOP-0001</b>, RPV Control</p> <p><b>EOP-0002</b>, Primary Containment Control</p> <p><b>EOP-0004</b>, RPV Flooding</p>	<p><b>Power:</b> 28%</p> <p><b>Core:</b> MOL, xenon equilibrium</p> <p><b>Equipment OOS:</b></p> <ul style="list-style-type: none"> <li>• APRM B – Failed power supply</li> <li>• Normal Service Water Pump SWP-P7A – Bearing</li> <li>• RFP FWS-P1B – Lube oil leak</li> <li>• Three LPRMs Bypassed: 22-31D, 22-47A, 46-15C</li> </ul> <p><b>STPs Due:</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>LCOs:</b></p> <ul style="list-style-type: none"> <li>• 3.3.1.1 and TR 3.3.2.1 for APRM B</li> </ul> <p><b>Evolutions in progress:</b></p> <ul style="list-style-type: none"> <li>• Continue with plant startup</li> <li>• CR 24-49 @ notch 16</li> </ul>	



Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>MALFUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>NMS012B</b>, APRM D failed downscale</li> <li>• <b>HPCS003</b>, HPCS Pump Fails to Auto start</li> <li>• <b>B21005 t1</b>, Reactor pressure transmitter B21-N078A fails upscale</li> <li>• <b>FWS014 t2</b>, Steam flow Channel C to FWLC fails downscale</li> <li>• <b>RPS003A t3</b>, RPS MG Set 'A' Output breaker trips</li> <li>• <b>RPS001B, d00:02, t3</b>, Failure to SCRAM Auto</li> <li>• <b>RPS001C, d00:02, t3</b>, Failure to SCRAM Manual</li> <li>• <b>MSS001, 250, r6:00, t4</b>, Drywell Steam Leak</li> <li>• <b>MSS002 t5</b>, Steam Line Rupture in Drywell</li> </ul>	

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>REMOTE FUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>NIS001, RESET, t4</b>, NI Cabinet 20 VDC Power Supplies</li> <li>• <b>LPRMRB22-31d, BYPASS</b></li> <li>• <b>LPRMRB22-47a, BYPASS</b></li> <li>• <b>LPRMRB46-15c, BYPASS</b></li> </ul> <p><b><u>LAMP OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>LO_MSS155-G, OFF</b>, P870-54C Mn Stm Sply to SSE Isol MOV green light</li> <li>• <b>LO_TME-MOVS8-R, OFF</b>, P870-54C SSE Press Cont Isol Vlv red light</li> <li>• <b>LO_SW-N22-G, OFF</b>, SWP-P7A green status light</li> <li>• <b>LO_SW-N22-B, ON</b>, SWP-P7A blue status light</li> </ul>	
	<p><b><u>METER OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>AO_C33-R603, 0, t2</b>, Main Steam Line C Flow Meter</li> </ul>	

Event Number	MFS/OR #/CAE	Expected Operator Action
	<p><b><u>ANNUNCIATOR OVERRIDES:</u></b>  <b>P870_53a:d_5, OFF, LP FW HTR STRING  A LOW WATER LEVEL</b></p> <p><b><u>SWITCH OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>DI_IAS-MOV106, d00:10, t3, CLOSE</b></li> </ul> <p><b>FREEZE</b></p>	
<b>Event 0</b>	<b>RUN</b>	<b>CREW: Board Walkdown and Turnover</b>

Event Number	MFS/OR #/CAE	Expected Operator Action
--------------	--------------	--------------------------

**Event 1 Description:**

Unit Operator is directed by CRS to start FWS-P1A Reactor Feed Pump Lube Oil System. Using SOP-0009, Reactor Feedwater System the UO starts the FWS-P1A Reactor Feed Pump Lube Oil System from P870 coordinating with ATC.





Event Number	MFS/OR #/CAE	Expected Operator Action
Event 2		<p>CRS: Directs ATC to raise power per GOP-0001 to 35% using control rods.</p> <p>ATC: Withdraws Control Rods per approved Rod Movement Sequence Package</p> <p>Monitors RC&amp;IS indications for rod withdrawals</p> <p>Performs coupling checks on rods withdrawn to notch 48</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 3 Description:</b></p> <p>Reactor Pressure Transmitter B21-N078A fails upscale resulting in a half-scam. With the instrument failed upscale, the half-scam cannot be reset. CRS refers to Tech Specs and determines in LCO 3.3.1.1.</p>		
<p><b>Event 3</b></p> <p>When directed by lead examiner.</p>	<p><b>t1, Inserts malfunction B21005</b></p>	<p>ATC:</p> <p>Reports half scram caused by High Reactor Pressure trip in RPS A to CRS</p> <p>Refers to ARP-P680-06A-A05, RPS-A TRIP REACTOR VESSEL HIGH PRESSURE</p>
	<p><b>ROLE PLAY:</b></p> <p><b>As Back Panel Operator, if requested, report backpanel RPS pressure instruments all four channels reading 1040 psig.</b></p>	<p>Diagnoses/recognizes pressure transmitter failure</p> <p>Confirm half scram and no control rods inserted and reports to CRS</p>
	<p><b>ROLE PLAY:</b></p> <p><b>As I &amp; C Maintenance/WMC, acknowledge request to investigate failure of B21-N078A.</b></p>	<p>CRS:</p> <p>Consults Tech Spec Section 3.3.1.1, RPS Instrumentation</p> <p>Determines LCO Action A applies and trip system in trip condition met</p> <p>Directs I &amp; C Maintenance investigate of instrument failure</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 4 Description:</b></p> <p>Steam Flow Channel C to FWLC fails downscale. The resulting steam flow/feed flow mismatch lowers level rapidly below the low level alarm point but will stabilize well above the low level scram.</p>		
<p><b>Event 4</b></p> <p>When directed by lead examiner.</p>	<p><b>t2, Inserts malfunction FWS014 and override AO_C33-R603C</b></p>	<p>ATC:</p> <p>As level lowers, refers to ARP-P680-03A-B08, REACTOR HIGH/LOW WATER LEVEL and/or AOP-0006, Condensate/Feedwater Failures</p> <p>Diagnoses/identifies steam flow channel failure</p> <p>May elect any of the following to restore level to normal band:</p> <ul style="list-style-type: none"> <li>- Adjust Master Level Control setpoint.</li> <li>- Master Level Control to 1 ELEMENT</li> <li>- transfer Master Level Control to MANUAL</li> </ul>
	<p><b>ROLE PLAY:</b></p> <p><b>As I &amp;C Maintenance/WMC, acknowledge request to investigate failure of Steam Flow Channel C.</b></p>	<p>Refers to ARP-P680-04A-A03 &amp; A09, FCV A/B RUNBACK RFP TRIP</p> <p>When directed by CRS restores Recirc FCVs from runback</p> <ul style="list-style-type: none"> <li>• Adjusts both LOOP FLOW CONTROL stations to zero limiter error</li> <li>• Resets Cavitation interlocks</li> <li>• Adjusts both LOOP FLOW CONTROL stations to return FCVs to maximum position</li> </ul>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 5 Description:</b></p> <p>RPS MG Set A output breaker trips. Outboard containment isolation for Instrument Air fails to re-open after RPS bus is re-energized and containment isolations reset.</p> <p><b>Critical Tasks:</b> 1. Initiate ARI</p>		
<p><b>Event 5</b></p> <p>When directed by lead examiner.</p>	<p>t3, Inserts <b>RPS003A</b> trip of RPS A MG set output breaker</p>	<p>ATC/CRS: Recognize loss of RPS bus A</p> <p>CRS: Direct implementation of AOP-0010, Loss of One RPS Bus</p> <p>Direct investigation of the loss of RPS bus A</p> <p>UO: When directed, transfer RPS bus A to alternate power</p> <p>Reset CRVICS depressing both RESET pushbuttons on P601</p> <p>Recognize failure of IAS-MOV106 to open on P870 and report to CRS</p> <p>Continue AOP-0010 actions, as directed by CRS</p>
	<p><b>ROLE PLAY :</b></p> <p><b>As Back Panel Operator, when requested, reset the Neutron Monitoring Cabinet power supply.</b></p> <p><b>Irf_NIS001 RESET</b></p>	<p>CRS: Direct implementation of AOP-0001 and AOP-0002 for impending Inboard MSIV closure scram.</p> <p>ATC: When directed, Insert manual scram or insert following auto scram.</p> <p>Initiate ARI to cause control rod insertion and report failure of RPS to CRS</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 6 Description:</b></p> <p>A small leak develops when the Inboard MSIVs close. After entering EOP-1 and EOP-2 for High Drywell temperature and pressure, the leak propagates into a Main Steam Line rupture inside containment. This results in RPV pressure and Drywell temperature conditions outside the safe zone of the RPV Saturation Curve in EOP Caution 1. RPV level can no longer be determined and EOP-4 RPV Flooding must be entered.</p> <p><b>Critical Tasks:</b> 1. Recognize loss of level indication and enter EOP-4, RPV Flooding</p>		
<p><b>Event 6</b></p> <p>When directed by lead examiner.</p>	<p><b>t4,</b> Inserts <b>MSS001</b> Steam Leak in the Drywell</p> <p><b>t5,</b> Inserts <b>MSS002</b> Steam Line Rupture in the Drywell (After EOP Entry)</p>	<p>ATC/CRS: Recognize loss of RPS bus A</p> <p>CRS: Direct implementation of AOP-0010, Loss of One RPS Bus</p> <p>Direct investigation of the loss of RPS bus A</p> <p>Determine no LCO required actions per Tech Spec 3.3.8.2 (RPS Electric Power Monitoring)</p> <p>UO: When directed, transfer RPS bus A to alternate power</p> <p>Reset CRVICS depressing both RESET pushbuttons</p> <p>Recognize failure of IAS-MOV106 to open and report to CRS</p> <p>Continue AOP-0010 actions as directed by CR</p>
<p><b>Event 6 cont'd</b></p>		<p>CRS: Direct implementation of AOP-0001 and AOP-0002 for impending Inboard MSIV closure scram.</p> <p>Enters EOP-1 if RPV level lowers to Level 3 following scram.</p> <p>ATC: When directed, Insert manual scram or insert following auto scram.</p> <p>Initiate ARI to cause control rod insertion and report failure of RPS to CRS</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
	<p><b>ROLE PLAY: If a leakage report is requested give the leakage values that are shown in monitored parameters Leak_report.</b></p> <p><b>When requested report Drywell Unit Cooler Drain flow is pegged high.</b></p> <p>Remove <b>HPCS003</b></p> <p><b>ROLE PLAY: Acknowledge requests for EOP Enclosure installation.</b></p> <p><b>Install EOP Enclosures with Remote Functions as necessary.</b></p> <p><b>Report EOP Enclosure installation completed based on appropriate time intervals.</b></p>	<p>CRS: Enters (or re-enters) EOP-1, Drywell pressure &gt;1.68 psid Enters EOP-2 on Drywell temperature &gt;145°F Directs actions to control RPV level and containment parameters Direct implementation of AOP-0003, Automatic Isolations</p> <p>UO/ATC: Implement EOP-1 as directed Verify ECCS/ESF automatic actions When directed, inhibit ADS actuation</p> <p>CRS: Recognize rapidly rising Drywell temperature/pressure, Suppression Pool temperature/level, and rapidly lowering RPV level from steam line rupture. Recognizes loss of RPV level indication and directs transition to EOP-4, RPV Flooding.</p> <p>UO/ATC: Implement EOP-4 as directed Establish Minimum RPV Flooding pressure</p>
<p><b>Event 7 Description:</b> The HPCS Pump fails to auto start on High Drywell pressure. Identifying the failure and attempting manual control will successfully start the pump.</p> <p><b>Critical Tasks:</b> 1. Recognize HPCS failure to auto start and manually start for small steam leak in Drywell.</p>		

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Event 7</b>		UO: Verifies ECCS automatic operation following steam leak in Drywell  Recognizes failure of HPCS pump to auto start, manually starts HPCS pump  Reports failure/status to CRS
Termination Criteria are met and concurrence of the Lead Examiner	<b>FREEZE</b>	CRS: Determines Emergency Classification as Site Area Emergency per EIP-2-001, EAL 1 (if not previously declared during scenario)



**VI. TERMINATION CRITERIA:**

1. All control rods inserted by ARI.
2. Injecting with all available injection sources to achieve Minimum RPV Flooding pressure.

**IX. QUANTITATIVE SUMMARY**

Total Malfunctions	<u>5</u>	Reactor pressure transmitter failure, Steam flow transmitter failure, Loss of RPS Bus, Steam leak in Drywell, Steam line break in Drywell, Failure of E21–MOV005
Malfunctions after EOP entry	<u>2</u>	Steam Line Break and LPCS Injection Valve failure
Abnormal Events	<u>2</u>	FWLC problem (AOP-0006), Loss of RPS Bus (AOP-0010)
Major Transients	<u>1</u>	Small break/Large break LOCA
EOPs entered	<u>2</u>	EOP-1, EOP-2
EOP Contingencies used	<u>1</u>	EOP-4, Sheet 4, RPV Flooding
Simulator Run Time	<u>60</u>	Minutes
EOP Run Time	<u>30</u>	Minutes
Critical Tasks	<u>3</u>	
Tech Specs Exercised	<u>Yes</u>	3.3.1.1, RPS Instrumentation

## **VII. REFERENCES**

### **A. Plant Procedures**

- 1.** GOP-0001, Plant Startup
- 2.** SOP-0009, Reactor Feedwater
- 3.** ARP-P680-06A-A05
- 4.** ARP-P680-03A-B08
- 5.** ARP-P680-04A-A03 & A09
- 6.** AOP-0001, Reactor Scram
- 7.** AOP-0002, Main Turbine and Generator Trips
- 8.** AOP-0003, Automatic Isolations
- 9.** AOP-0006, Condensate/Feedwater Failures
- 10.** AOP-0010, Loss of One RPS Bus
- 11.** EOP-1, RPV Control
- 12.** EOP-2, Primary Containment Control
- 13.** EOP-4, Contingencies
- 14.** EIP-2-001, Classification of Emergencies
- 15.** Technical Specifications



RIVER BEND STATION

NUCLEAR TRAINING DEPARTMENT

LICENSE OPERATOR SIMULATOR TRAINING

\*TPP-7-009  
(CROSS REFERENCE)

EXAM SCENARIO NUMBER

\*R-SIS-16.0  
(DOC. NO.)

TOPIC

\* SORV / Steam Leak in Drywell / Loss of Offsite Power

AVERAGE DURATION

\* 1.0 HOUR

PREPARED BY: Roger Persons / 0862 Date: 11/15/02  
INSTRUCTOR / KCN

REVIEWED BY: Mike Wagner / 0035 Date: 11/22/02  
TECHNICAL REVIEW / KCN

VALIDATED BY: Joseph Kelley / 1410 Date: 11/25/02  
OPERATIONS CRS / KCN

\* Indexing Information

## **I. DESCRIPTION OF SCENARIO**

The crew assumes the shift at 100% power. The Unit Operator will place RHR A into Suppression Pool Cooling in preparation for RCIC testing. An LPRM Upscale causes APRM F to reach its Upscale Thermal Trip and causes a half-scam. After the half-scam is reset a Heater Drain Pump Overload condition requires shutdown of the pump and start of the alternate pump.

SRV-F047C fails and sticks open. The crew responds by lower power with recirc flow and implementing AOP-0035 to shut the SRV. The SRV closes when control power fuses are removed.

The closure of SRV-F047C will initiate a 100 gpm steam leak in the Drywell. The crew will manually scram and enter EOP-1 and EOP-2 for Drywell conditions. After the scram, when the Generator output breaker opens on reverse power, a Loss of Offsite Power occurs. The crew enters AOP-0004, Loss of Offsite Power.

## **II. TERMINAL OBJECTIVES**

1. Recognize and respond to a Stuck Open SRV in accordance with plant procedures.
2. Recognize and respond to a Steam Leak in the Drywell in accordance with plant procedures.
3. Recognize and respond to a Loss of Offsite Power in accordance with plant procedures.
4. Establish safe and stable plant conditions following a steam line break inside the Drywell in accordance with plant procedures.

### **III. PERFORMANCE OBJECTIVES**

#### **A. CRS (SRO)**

1. Direct the response to SRV-F047C opening in accordance with AOP-0035, Stuck Open SRV.
2. Direct the response to high Drywell pressure/temperature and coordinate the implementation of EOP-1, RPV Control and EOP-2, Primary Containment Control.
3. Direct the response to Loss of Offsite Power in accordance with AOP-0004, Loss of Offsite Power.
4. Declare an ALERT Emergency Classification due to a reactor coolant leak greater than 50 gpm.

#### **B. ATC (RO)**

1. Respond to APRM F Upscale from LPRM Upscale in accordance with P680 ARPs.
2. Respond to a Heater Drain Pump Overload in accordance with ARPs.
3. Respond to SRV-F047C opening in accordance with AOP-0035, Stuck Open SRV
4. Initiate a Manual Scram in accordance with AOP-0001, Reactor Scram.
5. Respond to a Main Turbine trip in accordance with AOP-0002, Main Turbine and Generator Trips.
6. Respond to high Drywell pressure/temperature in accordance with EOP-1, RPV Control and EOP-2, Primary Containment Control, as directed.
7. Respond to Loss of Offsite Power in accordance with AOP-0004, Loss of Offsite Power, as directed.

**C. UO (RO)**

1. Respond to to SRV-F047C opening in accordance with AOP-0035, Stuck Open SRV.
2. Respond to Manual Scram in accordance with AOP-0001, Reactor Scram
3. Respond to a high Drywell pressure and temperature as directed.
4. Respond to a high Drywell pressure isolation in accordance with AOP-0003, Automatic Isolations.
5. Respond to Loss of Offsite Power in accordance with AOP-0004, Loss of Offsite Power, as directed.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

INITIAL CONDITION	TRAINING FOCUS	EQUIPMENT STATUS	REQUIRED DOCUMENTS
	<p><b>GOP-0005</b>, Power Maneuvering</p> <p><b>AOP-0035</b>, Stuck Open SRV</p> <p><b>AOP-0007</b>, Loss of Feedwater Heater</p> <p><b>AOP-0009</b>, Loss of Normal Service Water</p> <p><b>AOP-0004</b>, Loss of Offsite Power</p> <p><b>EOP-1</b>, RPV Control</p> <p><b>EOP-2</b>, Primary Containment Control</p>	<p><b>Power:</b> 100%</p> <p><b>Core:</b> MOL, xenon equilibrium</p> <p><b>Equipment OOS:</b></p> <ul style="list-style-type: none"> <li>• CRD Pump A tagged out</li> <li>• APRM A – INOP</li> </ul> <p><b>STPs Due:</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>LCOs:</b></p> <ul style="list-style-type: none"> <li>• 3.3.1.1 and TR 3.3.2.1 for APRM A</li> </ul> <p><b>Evolutions in progress:</b></p> <ul style="list-style-type: none"> <li>• Operation at rated conditions</li> </ul>	



V. GENERAL INSTRUCTIONS

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup</b>	<p>Snapped to <b>IC# 144</b></p> <p><b>PLANT CONFIGURATION:</b></p> <ul style="list-style-type: none"> <li>• On P680, bypass APRM A</li> <li>• Tagout CRD Pump A</li> </ul> <p><b>INSTRUCTOR STATION COMMANDS:</b></p> <p><b>TRIGGERS:</b> (All set to <b>FALSE</b>)</p> <p><b>t1</b>, LPRM Upscale and rod scram</p> <p><b>t2</b>, Bypass LPRM 0615D</p> <p><b>t3</b>, Heater Drain Pump Overload</p> <p><b>t4</b>, SRV F047C stuck open</p> <p><b>t5</b>, SRV F047C Div 2 switch OFF</p> <p><b>t6</b>, SRV F047C A fuses pulled</p> <p><b>t7</b>, SRV F047C B fuses pulled and Leak in Drywell initiated.</p> <p><b>t8</b>, Loss of Offsite Power</p>	<p>Verify all status indication lights for CRD Pump A are extinguished.</p> <p>Place danger tag switch covers on control switches for CRD Pump A and its Auxiliary Oil Pump.</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>MALFUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>NMS012A</b>, APRM A Fails Downscale</li> <li>• <b>CRD001A</b>, CRD A Pump Trip</li> <li>• <b>LPRMUP0615D t1</b>, LPRM 0615D fails Upscale</li> <li>• <b>MSS005J t4</b>, SRV F047C Fails Open</li> <li>• <b>MSS006J t4</b>, SRV F047C Sticks Open</li> <li>• <b>MSS001, 100, r5:00, t7</b>, Steam Leak in the Drywell</li> <li>• <b>ED001 t8</b>, Loss of Offsite Power</li> <li>• <b>EDG003</b>, HPCS DG Failure to Start</li> </ul>	
	<p><b><u>REMOTE FUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>LPRMRB0615d, BYPASS, t2</b>, LPRM Bypass, 0615d</li> <li>• <b>MSS012, CLOSE, t5</b>, Operate SRV B Solenoid Switches</li> <li>• <b>LPRMRB22-31d, BYPASS</b></li> <li>• <b>LPRMRB22-47a, BYPASS</b></li> <li>• <b>LPRMRB46-15c, BYPASS</b></li> </ul>	

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>LAMP OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>LO_MSS155-G, OFF, P870-54C Mn</b> Stm Sply to SSE Isol MOV green light</li> <li>• <b>LO_TME-MOV58-R, OFF, P870-54C</b> SSE Press Cont Isol Vlv red light</li> <li>• <b>LO_C11-CRDPA-G 601-22C, OFF,</b> CRD Pump A Green Light</li> <li>• <b>LO_C11-CRDPA-R 601-22C, OFF,</b> CRD Pump A Red Light</li> <li>• <b>LO_C11-C001AP-G 601-22C, OFF,</b> CRD Aux Oil Pump A Green Light</li> <li>• <b>LO_C11- C001AP-R 601-22C, OFF,</b> CRD Aux Oil Pump A Red Light</li> <li>• <b>LO_B21-AB1-A601-19B, ON, t6, ADS</b> A Logic Power Failure (Postage Stamp)</li> <li>• <b>LO_B21-F047C-R-601-19C, OFF, t6,</b> SRV F047C Red Light</li> <li>• <b>LO_B21-F047C-G-601-19C, OFF, t6,</b> SRV F047C Green Light</li> <li>• <b>LO_B21-BB1-A601-19B, ON, t7, ADS</b> B Logic Power Failure (Postage Stamp)</li> <li>• <b>LO_B21-ACF047C-R-601-19C, OFF,</b> <b>t7, SRV F047C Accoustic Monitor Red</b> Light</li> </ul>	

Event Number	MFS/OR #/CAE	Expected Operator Action
	<p><b><u>ANNUNCIATOR OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• P870_53a:d_5 OFF, LP FW HTR STRING A LOW WATER LEVEL</li> <li>• P680_2a:e_8 ON t3, HTR DR PUMP 1HDL-P1D OVERLOAD</li> <li>• P601_19a:b_8 ON t6, DIV 1 ADS/SRV INOPERATIVE</li> <li>• P601_19a:b_11 ON t7, DIV 2 ADS/SRV INOPERATIVE</li> </ul> <p><b><u>SWITCH OVERRIDES:</u></b></p> <p>NONE</p> <p><b>FREEZE</b></p>	
<b>Event 0</b>	<b>RUN</b>	CREW: Board Walkdown and Turnover

Event Number	MFS/OR #/CAE	Expected Operator Action
--------------	--------------	--------------------------

<p><b>Event 1 Description:</b> Unit Operator is directed by the CRS to place RHR A into Suppression Pool Cooling.</p>		
<p><b>Event 1</b> When the crew has assumed the shift and at the direction of the Lead Examiner</p>		<p>CRS: Directs UO to place RHR A into Suppression Pool Cooling</p> <p>UO: Using SOP-0031</p> <p>Throttles open SWP-F068 to obtain ~5800 gpm thru RHR A Heat Exchanger (<i>P870</i>)</p> <p>Starts RHR Pump A (<i>P601</i>)</p> <p>Opens RHR Test Return to Suppression Pool (<i>P601</i>)</p> <p>Verifies RHR Pump Min Flow Valve closes (<i>P601</i>)</p> <p>Closes RHR HX Bypass Valve (<i>P601</i>)</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
--------------	--------------	--------------------------

<p><b>Event 2 Description:</b></p> <p>ATC responds APRM F Upscale and half-scrum caused by LPRM 0615D failure upscale.</p>		
<p><b>Event 2</b></p> <p>When directed by Lead Examiner</p>	<p><b>t1, Inserts malfunction LPRMUP0615D, LPRM 0615D fails Upscale.</b></p>	<p>ATC: Refers to ARP-680-06A-C03</p> <p>Diagnoses/recognizes APRM F upscale caused by LPRM upscale.</p> <p>Locates failed LPRM with RCIS (<i>P680</i>)</p> <p>Reports to CRS.</p> <p>CRS: Consults RPS Instrumentation TS</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
	<b>ROLE PLAY :</b> <b>As Reactor Engineer, when requested, report LPRM has failed upscale and request APRM F bypassed. Bypasses LPRM 0615D and reports to CRS.</b>	CRS: Directs ATC to bypass APRM F and reset half-scam Directs RE to bypass LPRM ATC: When directed, bypasses APRM F and resets half-scam ( <i>P680</i> )
	<b>t2, LPRMRB0615d, BYPASS, Bypasses LPRM 0615d</b>	CRS: Directs ATC to place APRM F back in service ATC: When directed, places APRM F back in service ( <i>P680</i> )

<b>Event 3 Description:</b> ATC responds to Heater Drain Pump P1D Overload.		
<b>Event 3</b> When directed by Lead Examiner	<b>t3, Inserts override P680_2a:e_8 ON, to initiate annunciator HTR DR PUMP 1HDL-P1D OVERLOAD</b>  Remove <b>P680_2a:e_8 ON</b>	ATC: Refers to ARP-680-02A-E08. Starts HDL-P1C and stops HDL-P1D per SOP-0010, 5.1 Starts HDL-P1C ( <i>P680</i> ) Opens HDL-P1C discharge valve ( <i>P680</i> ) Closes HDL-P1D discharge valve ( <i>P680</i> ) Stops HDL-P1D ( <i>P680</i> )

Event Number	MFS/OR #/CAE	Expected Operator Action
	<b>ROLE PLAY:</b> As Electrical Maintenance/WMC, acknowledge request to investigate HDL- PID overload condition.	CRS:        Directs WMC investigate HDL-PID overload

**Event 4 Description:**

SRV F047C fails open and sticks open. Per AOP-0035, ATC lowers power to at least 90%. Attempts to close SRV with control switches are unsuccessful. When both sets of logic power fuses are pulled, the SRV closes. SRV closure initiates a small steam leak in the Drywell.

**Critical Tasks:**        1. Close SRV F047C.



Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Event 4</b> When directed by lead examiner.	<b>t4</b> , Inserts malfunctions <b>MSS005J</b> , SRV F047C Fails Open and <b>MSS006J</b> , SRV F047C Sticks Open	CRS: Directs crew response per AOP-0035 UO: Places SRV F051G in OPEN (P601) ATC: Lowers reactor power to <90% with recirc flow (P680) UO: Attempts to close SRV by placing control switch in CLOSE, then returns it to OPEN then back to CLOSE (P601)
	<b>ROLE PLAY :</b> <b>As Backpanel Operator, when requested, places SRV F047C control switches to CLOSE, to OPEN and back to CLOSE.</b>	CRS/UO: Requests closure attempts using back panel control switch
	<b>t5</b> , Places backpanel SRV switch to CLOSE	ATC/UO: Monitor indications for SRV closing (P680/P601)
	<b>ROLE PLAY :</b> <b>As Backpanel Operator, when requested, removes SRV F047C Div 1 control power fuses 15A and 16A first, then Div 2 control power fuses 15B and 16B.</b>	CRS/UO: Requests closure attempts by fuse removal from back panel ATC/UO: Monitor indications for SRV closing (P680/P601)
	<b>t6</b> , Removes SRV Div 1 fuses <b>t7</b> , Removes SRV Div 2 fuses and initiates steam leak in Drywell	ATC/UO: Monitor indications for SRV closing (P680/P601) Recognize SRV F047C closure CRS: Refers to Technical Specification for SRV operability
<b>Event 5 Description:</b> Steam leak develops in the Drywell when SRV closes. Reactor is manually scrammed as Drywell pressure approaches scram setpoint.		

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Event 5</b>	<b>t7, Inserts malfunction MSS001, 100 gpm Steam Leak in the Drywell</b>	CRS: Directs implementation of AOP-0001 and AOP-0002 before automatic scram on High Drywell Pressure.
	<p><b>ROLE PLAY: If a leakage report is requested give the leakage values that are shown in monitored parameters Leak_report.</b></p> <p><b>When requested report Drywell Unit Cooler Drain flow is pegged high.</b></p> <p><b>ROLE PLAY: Acknowledge requests for EOP Enclosure installation.</b></p> <p><b>Install EOP Enclosures with Remote Functions as necessary.</b></p> <p><b>Report EOP Enclosure installation completed based on appropriate time intervals.</b></p>	<p>CRS: Directs manual scram before High Drywell Pressure Auto scram.</p> <p>Directs implementation of EOP-1 RPV Control entered on High Drywell Pressure.</p> <p>Enters EOP-2 on High Drywell Temperature</p> <p>ATC: When directed, Inserts manual scram and completes AOP-0001 and AOP-0002 actions.</p> <p>UO: Verifies ECCS automatic operation for High Drywell Pressure.</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 6 Description:</b></p> <p>Following the scram, when the Generator output breaker opens on reverse power, a Loss of Offsite Power occurs. The crew enters AOP-0004, Loss of Offsite Power.</p>		
<p><b>Event 6</b></p> <p>When directed by lead examiner.</p>	<p><b>ED001 t8</b>, Loss of Offsite Power</p>	<p>CRS: Directs implementation of AOP-0004.</p> <p>UO: Initiates RCIC if directed.</p> <p>Verifies Diesel Generator Auto Starts</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 7 Description:</b> Following the Loss of Offsite Power the HPCS Diesel fails to Auto start. The UO must start the Diesel to make HPCS injection available.</p> <p><b>Critical Tasks:</b> 1. Starts HPCS Diesel.</p>		
<p><b>Event 7</b></p>	<p>Remove malfunction <b>EDG003</b>, HPCS DG Failure to Start.</p>	<p>UO: HPCS Diesel failure to start and reports to CRS Attempts start from P601 to start diesel.</p>
<p>Termination Criteria are met and concurrence of the Lead Examiner</p>	<p><b>FREEZE</b></p>	<p>CRS: Determines Emergency Classification as ALERT per EIP-2-001, EAL 2 (if not previously declared during scenario)</p>

**VI. TERMINATION CRITERIA:**

1. All Emergency Diesel Generators operating.
2. RPV level maintained by HPCS and or RCIC operation.
3. RPV pressure controlled by manual SRV operation.
4. Containment parameters stabilized.



## IX. QUANTITATIVE SUMMARY

Total Malfunctions	<u>6</u>	LPRM upscale failure, SRV fails open and sticks open, Steam leak in Drywell, Loss of Offsite Power, Failure of Div 3 EDG to start
Malfunctions after EOP entry	<u>2</u>	Loss of Offsite Power, Division 3 EDG Start Failure
Abnormal Events	<u>2</u>	SORV (AOP-0035) Loss of Offsite Power (AOP-0004)
Major Transients	<u>1</u>	Steam Leak in Drywell, Loss of Offsite Power
EOPs entered	<u>2</u>	EOP-1, RPV Control; EOP-2, Primary Containment Control
EOP Contingencies used	<u>0</u>	
Simulator Run Time	<u>60</u>	Minutes
EOP Run Time	<u>30</u>	Minutes
Critical Tasks	<u>2</u>	
Tech Specs Exercised	<u>Yes</u>	3.3.1.1, RPS Instrumentation, 3.5.1 SRV

## **VII. REFERENCES**

### **A. Plant Procedures**

- 1.** GOP-0005, Power Maneuvering
- 2.** SOP-0031, Residual Heat Removal
- 3.** SOP-0010, MSR and FW Heater Extraction Steam and Drains
- 4.** ARP-P680-06A-C03
- 5.** ARP-P680-02A-E08
- 6.** AOP-0001, Reactor Scram
- 7.** AOP-0002, Main Turbine and Generator Trips
- 8.** AOP-0003, Automatic Isolations
- 9.** AOP-0004, Loss of Offsite Power
- 10.** AOP-0007, Loss of Feedwater Heater
- 11.** AOP-0035, Stuck Open SRV
- 12.** EOP-1, RPV Control
- 13.** EOP-2, Primary Containment Control
- 14.** EIP-2-001, Classification of Emergencies
- 15.** Technical Specifications

Offgoing OSS:	Oncoming OSS:	Off-Going Shift	
_____	_____	N	D
(Print)	KCN	(Print)	KCN
		?	?
		Date	

**PART I - TO BE REVIEWED PRIOR TO ASSUMING THE SHIFT**

UNIT STATUS MODE 1

RX POWER 100%

**EVOLUTIONS (COMPLETED / IN PROGRESS / PLANNED); GENERAL INFORMATION**

Steady state rated power operation per GOP-0005.

Trip throttle valve maintenance was completed on RCIC on the previous shift.

CRD Pump A is tagged out for pump seal repairs.

APRM A is bypassed. I & C Maintenance is troubleshooting its flow unit.

Preparations are being made for RCIC testing scheduled this shift.

Place RHR A in Suppression Pool Cooling.

**SIGNIFICANT LCO STATUS**

Tracking LCO for APRM A

LCO 3.5.1 for RCIC

**EQUIPMENT STATUS**

APRM A bypassed

Condensate Full-Flow Filtration is bypassed

CRD Pump A tagged out

?

?

?

?

Night Orders

Standing Orders

Board Walkdown

Temp Alts

\_\_\_\_\_  
(Signature: Oncoming OSS Review Completed)

\_\_\_\_\_  
KCN





RIVER BEND STATION

NUCLEAR TRAINING DEPARTMENT

LICENSE OPERATOR SIMULATOR TRAINING

\*TPP-7-009  
(CROSS REFERENCE)

EXAM SCENARIO NUMBER

\*R-SIS-17.0  
(DOC. NO.)

TOPIC

\* Loss of Vacuum / Turbine Control Failure / Loss of Feedwater

AVERAGE DURATION

\* 1.0 HOUR

PREPARED BY: Roger Persons / 0862 Date: 11/15/02  
INSTRUCTOR / KCN

REVIEWED BY: Mike Wagner / 0035 Date: 11/22/02  
TECHNICAL REVIEW / KCN

VALIDATED BY: Joseph Kelley / 1410 Date: 11/25/02  
OPERATIONS CRS / KCN

\* Indexing Information

## **I. DESCRIPTION OF SCENARIO**

The crew assumes the shift at 85% power. Unit Operator is directed by the CRS to remove RHR B from Suppression Pool Cooling. Using SOP-0031, RHR System, the UO secures Suppression Pool Cooling and returns it to standby lineup. ATC responds to an APRM D Upscale failure. Using ARP ATC recognizes single control rod scram.

A loss of TPCCW to Reactor Feed Pump FWS-P1C Gear Increaser Lube Oil Cooler requires securing FWS-P1C. An electrical fault causes a loss of NNS-SWG2B. As a result, two condenser circ water pumps are lost and condenser vacuum begins to lower. The Crew will enter AOP-0005 and lower power to maintain vacuum.

EHC Governor Fails Low closing Control Valves. ATC initiates manual scram when BPVs are full open and RPV pressure begins rising. Following the scram a total loss of feedwater occurs as a result of FCV200 closure. One of the Turbine Bypass Valves sticks open causing an excessive cooldown rate after the scram. The crew should close the MSIVs to control cooldown rate. The UO must restore RCIC following an overspeed trip.

## **II. TERMINAL OBJECTIVES**

- 1.

**III. PERFORMANCE OBJECTIVES**

**A. CRS (SRO)**

1.

**B. ATC (RO)**

1.

**C. UO (RO)**

1. .

2.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

INITIAL CONDITION	TRAINING FOCUS	EQUIPMENT STATUS	REQUIRED DOCUMENTS
	<p><b>GOP-0005</b>, Power Maneuvering</p> <p><b>AOP-0061</b>, Mispositioned Control Rod(s)</p> <p><b>AOP-0007</b>, Loss of Condenser Vacuum</p> <p><b>AOP-0009</b>, Loss of Normal Service Water</p> <p><b>AOP-0006</b>, Condensate / Feedwater Failures</p> <p><b>EOP-1</b>, RPV Control</p> <p><b>EOP-2</b>, Primary Containment Control</p>	<p><b>Power:</b> 85%</p> <p><b>Core:</b> MOL, xenon equilibrium</p> <p><b>Equipment OOS:</b></p> <ul style="list-style-type: none"> <li>• HPCS tagged out</li> <li>• APRM B – INOP</li> </ul> <p><b>STPs Due:</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>LCOs:</b></p> <ul style="list-style-type: none"> <li>• 3.3.1.1 and TR 3.3.2.1 for APRM B</li> </ul> <p><b>Evolutions in progress:</b></p> <ul style="list-style-type: none"> <li>• Return to rated conditions</li> </ul>	



Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>MALFUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>HPCS001</b>, HPCS Pump Trip</li> <li>• <b>RCIC003B, t1</b>, RCIC Speed Controller Fails High</li> <li>• <b>CRDM3213</b>, Single Control Rod Scram</li> <li>• <b>CRD001A</b>, Trip of CRD Pump P1A</li> <li>• <b>MGEN001</b> Main Generator Trip</li> <li>• </li> </ul>	
	<p><b><u>REMOTE FUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>LPRMRB22-31d</b>, BYPASS</li> <li>• <b>LPRMRB22-47a</b>, BYPASS</li> <li>• <b>LPRMRB46-15c</b>, BYPASS</li> </ul> <p><b><u>LAMP OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>LO_MSS155-G, OFF</b>, P870-54C Mn Stm Sply to SSE Isol MOV green light</li> <li>• <b>LO_TME-MOVS8-R, OFF</b>, P870-54C SSE Press Cont Isol Vlv red light</li> <li>• </li> </ul>	



Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<u><b>ANNUNCIATOR OVERRIDES:</b></u> <ul style="list-style-type: none"> <li>•</li> </ul> <u><b>SWITCH OVERRIDES:</b></u> <ul style="list-style-type: none"> <li>•</li> </ul> <b>FREEZE</b>	
<b>Event 0</b>	<b>RUN</b>	<b>CREW: Board Walkdown and Turnover</b>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 1 Description:</b></p> <p>Unit Operator is directed by the CRS to remove RHR B from Suppression Pool Cooling. Using SOP-0031, RHR System, the UO secures Suppression Pool Cooling and returns it to standby lineup.</p>		
<p><b>Event 1</b></p> <p>When the crew has assumed the shift and at the direction of the lead examiner</p>		<p>CRS: Directs UO to remove RHR B from Suppression Pool Cooling</p> <p>UO: Using SOP-0031:</p> <p>Closes RHR Pump B Test Return to Suppression Pool (P601).</p> <p>Stops RHR Pump B (P601).</p> <p>Verifies minimum flow and HX outlet valves open (P601).</p> <p>Opens RHR B HX Bypass valve (P601).</p> <p>Closes RHR HX B Service Water Return (P870).</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 2 Description:</b>            ATC responds to an APRM D Upscale failure. Using ARP ATC recognizes single control rod scram.</p>		
<p><b>Event 2</b></p>	<p><b>t1</b>, Inserts malfunction <b>NMS011D</b>, APRM D failure Upscale and <b>CRDM3213</b>, Single Control Rod Scram</p>	<p>ATC: ARP-P680-06A-B03:</p> <ul style="list-style-type: none"> <li>Verify half scram (P680).</li> <li>Compare channel with other APRMs (P680).</li> <li>Verify proper core flow (P680).</li> <li>Bypass APRM D on CRS direction (P680).</li> <li>Reset half scram on CRS direction (P680).</li> </ul> <p>ARP-P680-05A-A10:</p> <ul style="list-style-type: none"> <li>Identify scrambled rod using RCIS (P680).</li> <li>Report scrambled rod to CRS.</li> </ul> <p>CRS:</p> <ul style="list-style-type: none"> <li>AOP-0061, Mispositioned Control Rod(s) SECTION 5.1</li> <li>Perform MON calculation</li> <li>Notify RE for control rod pattern recovery directions</li> <li>Document and initiate a CR</li> </ul>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 3 Description:</b> Loss of TPCCW to Reactor Feed Pump FWS-P1C Gear Increaser Lube Oil Cooler requiring shutdown of FWS-P1C.</p>		
<p><b>Event 3</b>  When directed by lead examiner.</p>	<p><b>t2</b>, Inserts override <b>OR_P680_3a:d-6</b>, to initiate annunciator RX FWP 1C GEAR INCREASER HIGH TEMP</p>	<p>ATC:      ARP-P680-03A-D02, RX FWP 1C GEAR INCREASER HIGH TEMP</p> <p>Direct NEO to verify lineup and TPCCW to LO cooler.</p> <p>Upon notification of failure of Temp. Control Valve and temp rapidly trending to 190°F go to SOP-0009 for P1C shutdown.</p> <p>SOP-0009, Reactor Feedwater System, SECTION 6.1</p> <p>Close discharge valve on P1C (P680).</p> <p>Verify min flow valve for P1C opens (P680).</p> <p>Monitor SF/FF mismatch and RPV Level to verify capability of remaining RFPs (P680).</p> <p>Stop Reactor Feed Pump P1C (P680).</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
--------------	--------------	--------------------------

**Event 4 Description:**

An electrical fault causes a loss of NNS-SWG2B. As a result, two condenser circ water pumps are lost and condenser vacuum begins to lower. The Crew will enter AOP-0005 and lower power to maintain vacuum.

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 4</b></p> <p>When directed by lead examiner.</p>	<p>t3, Inserts malfunction <b>ED003E</b>, Loss of NNS-SWG2B</p>	<ol style="list-style-type: none"> <li>1. ATC: AOP-0005, Loss of Condenser Vacuum/Circ Water Pump Trip               <ol style="list-style-type: none"> <li>a. Verify CWS Pump Discharge Valves for tripped pumps close (P808).</li> <li>b. Isolate the B Condenser Water box per SOP-0006 when &lt;70% power</li> </ol> </li> <li>2. SOP-0006, Circ Water, Cooling Tower and Vacuum Priming, <i>SECTION 6.4</i> <ol style="list-style-type: none"> <li>a. Close both 1B Condenser water box outlet valves (P808).</li> <li>b. Close both 1B Condenser water box inlet valves (P808).</li> </ol> </li> <li>3. AOP-0009, Loss of Normal Service Water               <ol style="list-style-type: none"> <li>a. Verify standby Normal Service Water Pump P1C started</li> </ol> </li> </ol> <p>ATC:</p> <ol style="list-style-type: none"> <li>1. AOP-0005, Loss of Condenser Vacuum/Circ Water Pump Trip               <ol style="list-style-type: none"> <li>a. Reduce power with Recirc flow to maintain Condenser vacuum =23 in Hg (P680).</li> </ol> </li> </ol> <p>Continue to reduce power per the Shutdown Reactivity Control Plan (P680).</p>
<p><b>Event 5 Description:</b></p> <p>EHC Governor Fails Low closing Control Valves. ATC initiates manual scram when BPVs are full open and RPV pressure begins rising.</p>		

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 5</b></p> <p>When directed by lead examiner.</p>	<p><b>t4</b>, Inserts malfunction <b>EHC006A</b>, EHC Governor Fails Low and 12 seconds after the scram, inserts <b>CNM006</b>, CFFF Bypass Valve FCV200 Fails Shut</p>	<ol style="list-style-type: none"> <li>1. AOP-0001, Reactor Scram <ol style="list-style-type: none"> <li>a. Immediate Operator Actions.</li> <li>b. Subsequent Operator Actions.</li> </ol> </li> <li>2. AOP-0002, Turbine Trip <ol style="list-style-type: none"> <li>a. Immediate Operator Actions.</li> <li>b. Subsequent Operator Actions.</li> </ol> </li> <li>3. AOP-0006, Condensate/Feedwater Failures <ol style="list-style-type: none"> <li>a. Immediate Operator Actions.</li> <li>b. Subsequent Operator Actions.</li> </ol> </li> </ol>

Event Number	MFS/OR #/CAE	Expected Operator Action	
<p><b>Event 6 Description:</b></p> <p>One of the Turbine Bypass Valves sticks open causing an excessive cooldown rate after the scram. The crew should close the MSIVs to control cooldown rate.</p> <p><b>Critical Tasks:</b> 1. Close MSIVs to prevent excessive cooldown.</p>			
<p><b>Event 6</b></p> <p>When directed by lead examiner.</p>	<p>t5, Inserts EHC002C No. 1 Turbine Bypass Valve Fails open</p>	<p>ATC:</p> <p>CRS:</p> <p>UO:</p>	<p>Recognize failure of Bypass valve to close on pressure below pressure set.</p> <p>Directs UO to close MSIVs</p> <p>When directed, closes MSIVs</p>



Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 7 Description:</b> Following the Loss of Feed scram RCIC will trip on Overspeed.</p> <p><b>Critical Tasks:</b>      1. Recover RCIC and inject into RPV to Control Level.</p>		
<b>Event 7</b>	<b>t6</b> , Inserts malfunction <b>RCIC001</b> , RCIC trip after start	<p>UO:            Recognizes RCIC trip and reports to CRS</p> <p>                 Attempts to reset trip throttle.</p> <p>                 Has Building Operator reset trip throttle locally.</p> <p>                 Starts RCIC.</p>
Termination Criteria are met and concurrence of the Lead Examiner	<b>FREEZE</b>	<p>CRS:            Determines no Emergency Classification required per EIP-2-001.</p>

**VI. TERMINATION CRITERIA:**

1. RCIC recovered and injecting into RPV.
2. RPV level and pressure stabilized.

**IX. QUANTITATIVE SUMMARY**

Total Malfunctions	<u>5</u>	
Malfunctions after EOP entry	<u>2</u>	
Abnormal Events	<u>2</u>	
Major Transients	<u>1</u>	
EOPs entered	<u>2</u>	EOP-1, EOP-2
EOP Contingencies used	<u>1</u>	
Simulator Run Time	<u>60</u>	Minutes
EOP Run Time	<u>30</u>	Minutes
Critical Tasks	<u>3</u>	
Tech Specs Exercised	<u>Yes</u>	3.3.1.1, RPS Instrumentation

## **VII. REFERENCES**

### **A. Plant Procedures**

1. GOP-0005, Power Maneuvering
2. SOP-0009, Reactor Feedwater
3. ARP-P680-06A-A05
4. ARP-P680-03A-B08
5. ARP-P601-19A-F05
6. AOP-0001, Reactor Scram
7. AOP-0002, Main Turbine and Generator Trips
8. AOP-0003, Automatic Isolations
9. AOP-0006, Condensate/Feedwater Failures
10. EOP-1, RPV Control
11. EOP-2, Primary Containment Control
12. Technical Specifications



RIVER BEND STATION

NUCLEAR TRAINING DEPARTMENT

LICENSE OPERATOR SIMULATOR TRAINING

\*TPP-7-009  
(CROSS REFERENCE)

EXAM SCENARIO NUMBER

\*R-SIS-15.0  
(DOC. NO.)

TOPIC

\* Single Loop Ops / Loss of Feed Heater / Turbine Trip ATWS

AVERAGE DURATION

\* 1.0 HOUR

PREPARED BY: Roger Persons / 0862 Date: 11/15/02  
INSTRUCTOR / KCN

REVIEWED BY: Mike Wagner / 0035 Date: 11/22/02  
TECHNICAL REVIEW / KCN

VALIDATED BY: Joseph Kelley / 1410 Date: 11/25/02  
OPERATIONS CRS / KCN

\* Indexing Information

## **I. DESCRIPTION OF SCENARIO**

A plant shutdown is in progress from 61% power in Single Loop Operation when the crew assumes the shift. The UO removes Suppression Pool Cleanup from service as part of GOP-0004, Shutdown from Single Loop Operation. ATC inserts control rods for plant shutdown.

The B Feedwater Reg Valve fails open requiring the ATC to take it out of service by closing its isolation MOV. The UO operator responds to a CRD pump trip by placing the other CRD pump in service.

The E5A Low Pressure Feedwater heater tube ruptures causing a high level condition in the heater. At the Extreme High Level, a turbine runback to 70% is initiated which terminates before affecting the Turbine Control Valves. It also isolates the A Feedwater Heater String and opens the 25% flow bypass causing a significant loss of feedwater heating.

A generator trip causes a turbine trip with a failure to scram (Hydraulic ATWS). The crew will enter EOP-1A RPV Control – ATWS from EOP-1, RPV Control. EOP-2, Primary Containment Control will be entered on high suppression pool temperature.

## **II. TERMINAL OBJECTIVES**

1. Recognize and respond to feedwater regulating valve failure in accordance with plant procedures.
2. Recognize and respond to a CRD pump trip in accordance with plant procedures.
3. Recognize and respond to a loss of feedwater heating in accordance with plant procedures.
4. Recognize and respond to a failure to scram in accordance with plant procedures.
5. Establish safe and stable plant conditions following a Hydraulic ATWS in accordance with plant procedures.

### **III. PERFORMANCE OBJECTIVES**

#### **A. CRS (SRO)**

1. Direct plant shutdown in accordance with GOP-0004
2. Direct the response to feedwater heater tube leak with AOP-0007, Loss of Feedwater Heater.
3. Direct the response to a failure to scram and coordinate implementation of EOP-1A, RPV Control - ATWS
4. Direct the response to high Suppression Pool temperature and coordinate the implementation of EOP-2, Primary Containment Control.
5. Declare a Site Area Emergency due to the ATWS condition.

#### **B. ATC (RO)**

1. Respond to a Feedwater Reg. Valve failure in accordance with ARP.
2. Respond to a APRM flow unit downscale failure in accordance with ARP
3. Respond to Feedwater Heater Tube Failure in accordance with ARPs and AOP-0007
4. Respond to Generator trip in accordance with AOP-0002, Main Turbine and Generator Trips.
5. Respond to failure to scram controlling RPV level as directed.

**C. UO (RO)**

1. Respond to a trip of CRD pump in accordance with ARP.
2. Respond to a high Suppression Pool temperature as directed.
3. Respond to a failure to scram as directed.



**IV. INITIAL CONDITIONS/SHIFT TURNOVER**

INITIAL CONDITION	TRAINING FOCUS	EQUIPMENT STATUS	REQUIRED DOCUMENTS
	<p><b>GOP-0004</b>, Single Loop Operation</p> <p><b>AOP-0006</b>, Condensate / Feedwater Heater</p> <p><b>AOP-0007</b>, Loss of Feedwater Heater</p> <p><b>AOP-0002</b>, Turbine and Generator Trips</p> <p><b>EOP-1</b>, RPV Control</p> <p><b>EOP-1A</b>, RPV Control - ATWS</p> <p><b>EOP-2</b>, Primary Containment Control</p>	<p><b>Power:</b> 61%</p> <p><b>Core:</b> MOL, xenon equilibrium</p> <p><b>Equipment OOS:</b></p> <ul style="list-style-type: none"> <li>• Reactor Recirculation Pump A tripped – Investigating</li> <li>• APRM A – INOP</li> <li>• TPCCW Pump CCS - PIC – Motor replacement</li> <li>• Three LPRMs Bypassed: 22-31D, 22-47A, 46-15C</li> </ul> <p><b>STPs Due:</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>LCOs:</b></p> <ul style="list-style-type: none"> <li>• 3.3.1.1 and TR 3.3.2.1 for APRM A</li> </ul> <p><b>Evolutions in progress:</b></p> <ul style="list-style-type: none"> <li>• Plant shutdown</li> </ul>	

V. GENERAL INSTRUCTIONS

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup</b>	Snapped to <b>IC# 142</b>	
	<p><b>PLANT CONFIGURATION:</b></p> <ul style="list-style-type: none"> <li>• P680, bypass APRM A</li> <li>• P870, CCS-P1C, Lockout PB</li> </ul> <p><b>INSTRUCTOR STATION COMMANDS:</b></p> <p><b><u>TRIGGERS:</u></b> (All set to <b>FALSE</b>)</p> <p>t1, FWRV F001B Fails Open</p> <p>t2, CRD Pump A trip</p> <p>t3, APRM F Flow Converter Fails Downscale</p> <p>t4, FW Heater E5A Tube Leak</p> <p>t5, Main Generator Trip</p> <p>t6, Trip of SLC Pump A</p> <p>t7, Trip of SLC Pump B</p> <p>t12, Removes SPC Demineralizer from service</p> <p>t13, Opens RHS-V3022 RHR C Test Return Line Isolation Valve</p>	<p>At Step 2 of SHUTDOWN Control Rod Movement Sequence</p> <p>Place Danger tag switch cover on CCS-P1C RESET/LOCKOUT Pushbutton.</p> <p>Verify all indicating lights for CCS-P1C and its discharge valve CCS-MOV15C are extinguished.</p> <p>NOTE: t4 also inserts Hydraulic ATWS.</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>MALFUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>FWS007B t1</b>, Feedwater Reg Valve ‘B’ failure open</li> <li>• <b>CRD001A t2</b>, Trip of CRD Pump P1A</li> <li>• <b>NMS015F t3</b>, APRM F flow reference signal failure downscale</li> <li>• <b>FWS011 t4</b>, E5A Feedwater Heater tube leak</li> <li>• <b>MGEN001 t5</b>, Main Generator Trip</li> <li>• <b>RPS001A t4</b>, Hydraulic ATWS</li> </ul>	
	<p><b><u>REMOTE FUNCTIONS:</u></b></p> <ul style="list-style-type: none"> <li>• <b>RPS008, IN</b>, Single Loop APRM Scram and Rod Block</li> <li>• <b>NIS013, NORMAL</b>, PBDS A Bypass</li> <li>• <b>NIS016, NORMAL</b>, PBDS B Bypass</li> <li>• <b>LPRMRB22-31d, BYPASS</b></li> <li>• <b>LPRMRB22-47a, BYPASS</b></li> <li>• <b>LPRMRB46-15c, BYPASS</b></li> </ul>	

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>LAMP OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>LO_MSS155-G, OFF, P870-54C Mn</b> Stm Sply to SSE Isol MOV green light</li> <li>• <b>LO_TME-MOVS8-R, OFF, P870-54C</b> SSE Press Cont Isol Vlv red light</li> <li>• <b>LO_CCS-P1C-G, OFF, P870-55C CCS</b> Pump P1C green light</li> <li>• <b>LO_C41-F001B-R 601-18B, ON t7,</b> SLC Pump B Suction Valve Red Light</li> <li>• <b>LO_C41-F001B-G 601-18B, OFF t7,</b> SLC Pump B Suction Valve Green Light</li> <li>• <b>LO_C41-A2-A 601-18B, ON t7, C41-</b> C001B or F001B Ovld (Postage Stamp)</li> <li>• <b>LO_C41-F001A-R 601-19B, ON t6,</b> SLC Pump A Suction Valve Red Light</li> <li>• <b>LO_C41-F001A-G 601-19B, OFF t6,</b> SLC Pump A Suction Valve Green Light</li> <li>• <b>LO_C41-AA2-A 601-19B, ON t6, C41-</b> C001A or F001A Ovld (Postage Stamp)</li> </ul>	

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Simulator Setup Continued</b>	<p><b><u>ANNUNCIATOR OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>P870_53a:d_5, OFF, LP FW HTR STRING A LOW WATER LEVEL</b></li> </ul> <p><b><u>SWITCH OVERRIDES:</u></b></p> <ul style="list-style-type: none"> <li>• <b>DI_C41-C001A 601-19B, STOP, t6, SLC A Pump Switch</b></li> <li>• <b>DI_C41-C001B 601-18B, STOP, t7, SLC B Pump Switch</b></li> </ul> <p><b>FREEZE</b></p>	
<b>Event 0</b>	<b>RUN</b>	<b>CREW: Board Walkdown and Turnover</b>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 1 Description:</b> Unit Operator is directed by the CRS to remove SPC from service. Using SOP-0140, SPC/ADHR System, coordinating with the Reactor Building Operator, the UO secures SPC.</p>		
<p><b>Event 1</b> When the crew has assumed the shift and at the direction of the lead examiner</p>	<p><b>ROLE PLAY :</b> <b>As Reactor Building Operator in Racquetball Room, when requested, coordinate with Radwaste to remove SPC Filter/Demineralizer from service.</b></p>	<p>CRS: Directs UO to remove SPC from Service UO: Using SOP-0140, directs building operators to remove SPC Filter/Demin.</p>
	<p>t12, Removes SPC Demin from service</p>	
	<p><b>ROLE PLAY :</b> <b>As Reactor Building Operator, when directed, Open RHS-V3022.</b></p>	<p>UO: Stops SPC-P1B (P601) Closes the following valves (P601): SPC-AOV62 SPC-AOV63 SPC-AOV64 SPC-AOV20 E12-MOVF021 Verifies SPC-AOV16 closed (P870) Directs Reactor Building Operator to open RHS-V3022</p>
	<p>t13, Opens RHS-V3022 RHR C Test Return Line Isolation Valve</p>	

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 2 Description:</b>  CRS directs ATC to lower reactor power by control rod insertion for plant shutdown per GOP-0004.</p>		
<p><b>Event 2</b></p>		<p>CRS: Directs ATC to lower power using control rods.  ATC: Inserts Control Rods per SHUTDOWN Control Rod Movement Sequence  Monitors RC&amp;IS during rod insertions</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 3 Description:</b> ATC responds to 'B' Feedwater Reg Valve failing open.</p>		
<p><b>Event 3</b></p>	<p><b>t1</b>, Inserts malfunction <b>FWS007B</b>, Feedwater Reg Valve 'B' fails open</p>	<p>ATC:</p> <ul style="list-style-type: none"> <li>Refers to AOP-0006, Condensate/Feedwater Failures</li> <li>Diagnoses/Recognizes failure of FWRV (<i>P680</i>)</li> <li>Transfers FWRV M/A station to Manual (<i>P680</i>)</li> <li>Attempts to manually close FWRV (<i>P680</i>)</li> <li>Closes FWS-MOV27B to isolate FWRV (<i>P680</i>)</li> </ul>



Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 4 Description:</b> The operating CRD Pump Trips. ATC monitors RC&amp;IS for accumulator faults and rod drifts while UO starts the standby CRD Pump.</p>		
<p><b>Event 4</b> When directed by lead examiner.</p>	<p>t2, Inserts malfunction <b>CRD001A</b>, Trip of CRD Pump P1A.</p>	<p>UO: ARP-P601-22A-A01, CRD PUMP A OR B AUTO TRIP</p> <p>Start standby oil pump (P601).</p> <p>Place CRD Flow Controller to MANUAL (P601).</p> <p>Close CRD Flow Control Valve (P601).</p> <p>Start Standby CRD Pump (P601).</p> <p>Reopen CRD Flow Control Valve (P601).</p> <p>Place CRD Flow Controller to AUTO (P601).</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
--------------	--------------	--------------------------

<p><b>Event 5 Description:</b>  APRM F flow reference signal fails downscale. This results in a half-scam. After determining the cause of the APRM F Upscale trip, the half-scam can be reset after bypassing APRM F.</p>		
<p><b>Event 5</b>  When directed by lead examiner.</p>	<p><b>t3</b>, Inserts malfunction <b>NMS015F</b>, APRM F flow reference signal failure downscale</p>	<p>ATC:      Diagnose/Recognize Flow channel downscale (<i>P680</i>)  Refers to ARP-P680-06A-A03  When directed by CRS, bypass APRM F (<i>P680</i>).  When directed by CRS, reset half-scam (<i>P680</i>).</p>

Event Number	MFS/OR #/CAE	Expected Operator Action
	<b>ROLE PLAY:</b> <b>As I &amp;C Maintenance/WMC,</b> <b>acknowledge request to investigate failure</b> <b>of APRM F flow unit.</b>	CRS:        Consults Tech Spec Section 3.3.1.1, RPS Instrumentation

**Event 6 Description:**

A tube failure in E5A feedwater heater causes isolation of the A LP feedwater heater string. The 25% bypass isolation valve MOV136 opens as the LP heater string isolates. Crew must enter AOP-0007, Loss of Feedwater Heater and evaluate feedwater temperature change to determine if use of AOP-0007 Single Loop Map is required. The AOP-0007 Power-to-Flow map would have plant in the Restricted Region (cannot raise flow in single operating recirc loop any further).

ATC may be directed by CRS to insert control rods per SHUTDOWN Control Rod Movement Sequence anticipating entry into Restricted Zone of power-to-flow map in AOP-0007.

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 6</b></p> <p>When directed by lead examiner.</p>	<p><b>t4</b>, Inserts malfunction <b>FWS011</b>, E5A Feedwater Heater tube leak and <b>RPS001A</b> Hydraulic ATWS.</p>	<p>ATC:      AOP-0007, Loss of Feedwater Heating</p> <p>Monitor feedwater temperatures (P680).</p> <p>Confirm/monitor turbine runback to &lt; 70% load (P680).</p> <p>Confirm turbine load within limits (P680).</p> <p>Verifies LP FW Heater String isolation and bypass (P680).</p> <p>If directed by CRS, Reduce power with Control Rods using SHUTDOWN Control Rod Movement Sequence.</p>

**Event 7 Description:**

A Main Generator Trip causes a Turbine Trip. None of the control rods insert on the automatic scram and ARI fails to insert any control rods. CRS enters EOP-1, RPV Control and transitions to EOP-1A, RPV Control – ATWS.

**Critical Tasks:**

1. Inhibit ADS
2. Terminate and prevent HPCS injection into the RPV

Event Number	MFS/OR #/CAE	Expected Operator Action
<p><b>Event 7</b></p> <p>When directed by lead examiner.</p>	<p><b>t5, Inserts MGEN001 Main Generator Trip</b></p>	<p>ATC: Recognize failure of control rods to insert and initiates ARI.</p> <p>Reports ATWS conditions to CRS.</p> <p>Completes applicable immediate and subsequent operator actions for AOP-0001 and AOP-0002</p> <p>When directed, lowers RPV level by terminating feedwater flow.</p> <p>Stabilizes RPV level at CRS direction.</p>
	<p><b>ROLE PLAY: Acknowledge requests for EOP Enclosure installation.</b></p> <p><b>Install EOP Enclosures with Remote Functions as necessary.</b></p> <p><b>Report EOP Enclosure installation completed based on appropriate time intervals.</b></p>	<p>CRS: Enters EOP-1, transitions to EOP-1A and directs implementation of EOP-2</p> <p>UO: Inhibits ADS, terminates and prevents HPCS injection</p> <p>When directed, maximizes CRD drive pressure to drift rods in</p> <p>When directed, initiates SLC injection</p> <p>When directed, controls RPV pressure with manual SRV operation</p> <p>When directed, installs EOP Enclosure 16.</p> <p>When directed, places RHR in Suppression Pool cooling.</p>
<p><b>Event 8 Description:</b></p> <p>SLC Pump started for ATWS trips after it starts. UO should monitoring system to verify proper operation, recognize trip and start alternate SLC Pump.</p> <p><b>Critical Tasks:</b> 1. Place alternate SLC Pump in service injecting to RPV.</p>		

Event Number	MFS/OR #/CAE	Expected Operator Action
<b>Event 8</b>	<b>t6</b> , Inserts <b>Overrides</b> for SLC Pump C41-P1A trip  <b>t7</b> , Inserts <b>Overrides</b> for SLC Pump C41-P1B trip	UO: Recognizes SLC Pump A trip and reports to CRS  Start alternate SLC Pump  Verifies proper operation
Termination Criteria are met and concurrence of the Lead Examiner	<b>FREEZE</b>	CRS: Determines Emergency Classification as Site Area Emergency per EIP-2-001, EAL 7 (if not previously declared during scenario)

**VI. TERMINATION CRITERIA:**

1. Reactor power below APRM downscals and lowering.
2. RPV pressure and level stable.
3. SLC injection in progress.

**IX. QUANTITATIVE SUMMARY**

Total Malfunctions	<u>6</u>	FWREG valve failure, CRD Pump Trip, Feedwater heater tube leak, Generator trip, Hydraulic ATWS, SLC Pump trip
Malfunctions after EOP entry	<u>1</u>	SLC pump trip
Abnormal Events	<u>2</u>	FWLC problem (AOP-0006), Loss of Feedwater Heater (AOP-0007)
Major Transients	<u>1</u>	Turbine Trip ATWS
EOPs entered	<u>2</u>	EOP-1A, EOP-2
EOP Contingencies used	<u>1</u>	EOP-1A Level/Power Control
Simulator Run Time	<u>60</u>	Minutes
EOP Run Time	<u>30</u>	Minutes
Critical Tasks	<u>3</u>	
Tech Specs Exercised	<u>Yes</u>	3.3.1.1, RPS Instrumentation

## **VII. REFERENCES**

### **A. Plant Procedures**

1. GOP-0004, Single Loop Operation
2. SOP-0140, Suppression Pool Cleanup
3. ARP-P601-22A-A01
4. AOP-0001, Reactor Scram
5. AOP-0002, Main Turbine and Generator Trips
6. AOP-0003, Automatic Isolations
7. AOP-0006, Condensate/Feedwater Failures
8. AOP-0007, Loss of Feedwater Heater
9. AOP-0024, Thermal Hydraulic Stability Controls
10. EOP-1, RPV Control
11. EOP-1A, RPV Control – ATWS
12. EOP-2, Primary Containment Control
13. EIP-2-001, Classification of Emergencies
14. Technical Specifications





