



## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	2-EOI Appendix-3A SLC Injection	
JPM NUMBER:	613A	REVISION:	3	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-063-AL-03 Inject SLC in accordance with 2-EOI Appendix-3A			
K/A RATINGS:	RO 4.2 SRO 4.2			
K/A STATEMENT:	211000 A4.08 Ability to manually operate and/or monitor in the control room: System initiation			
RELATED PRA INFORMATION:	None			
SAFETY FUNCTION:	1			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: \_\_\_\_\_  
*Developer* *Date*  
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)  
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: \_\_\_\_\_  
*Validator* *Date*

Approved by: \_\_\_\_\_  
*Site Training Management* *Date*

Approved by: \_\_\_\_\_  
*Site Training Program Owner* *Date*

Rec'd  
1/7/15



## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

JPM Number: 613 A

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: Perform operations necessary to start SLC Pump and inject SLC solution into RPV as directed by 2-EOI Appendix-3A and start the alternate pump due to no flow indications.

Operator Fundamental evaluated: Controlling Plant Evolutions Precisely.

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure: 2-EOI Appendix-3A

VERIFICATION TIME: 10

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_ (Retain entire JPM for records)

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	28
Exam IC	105

Batch File or Pref file	restorepref NRC/jpm613A bat NRC/slccouple bat NRC/slcuncouple
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Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s):



## Job Performance Measure (JPM)

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

### INITIAL CONDITIONS:

You are an Operator on Unit 2.

- The Reactor has scrammed and control rods failed to insert.
- 2-EOI-1, RPV Control has been entered and followed to RC/Q-12.
- Reactor Power is >5%.

### INITIATING CUES:

The Unit Supervisor directs you to perform 2-EOI Appendix-3A, SLC Injection.



## Job Performance Measure (JPM)

### START TIME

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p>[1] <b>UNLOCK</b> and <b>PLACE</b> 2-HS-63-6A, SLC PUMP 2A/2B, control switch in START- A or START-B position.</p> <p><u>Standard:</u></p> <p>Places 2-HS-63-6A control switch in either START-A or START-B position.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>[2] <b>CHECK</b> SLC System for injection by observing the following:</p> <ul style="list-style-type: none"><li>• Selected pump starts, as indicated by red light illuminated above pump control switch</li><li>• Squib valves fire, as indicated by SQUIB VALVE A and B CONTINUITY blue lights extinguished</li><li>• SLC SQUIB VALVE CONTINUITY LOST Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 20)</li><li>• 2-PI-63-7A, SLC PUMP DISCH PRESS, indicates above RPV pressure</li><li>• System flow, as indicated by 2-IL-63-11, SLC FLOW, red light illuminated on Panel 9-5</li><li>• SLC INJECTION FLOW TO REACTOR Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 14).</li></ul> <p><u>Standard:</u></p> <p>Verifies there are NO discharge pressure and NO red flow light.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 3:</u></p> <p>[3] IF proper system operation CANNOT be verified, <b>THEN RETURN</b> to Step 1.0[1] and <b>START</b> other SLC pump.</p> <p><u>Standard:</u></p> <p>Returns to step 1.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 4:</u></p> <p>[1] <b>UNLOCK</b> and <b>PLACE</b> 2-HS-63-6A, SLC PUMP 2A/2B, control switch in START-A or START-B position.</p> <p><u>Standard:</u></p> <p>Places 2-HS-63-6A control switch in either Start A or Start B position, the opposite position that was attempted in performance step 1.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>[2] <b>CHECK</b> SLC System for injection by observing the following:</p> <ul style="list-style-type: none"><li>• Selected pump starts, as indicated by red light illuminated above pump control switch</li><li>• Squib valves fire, as indicated by SQUIB VALVE A and B CONTINUITY blue lights extinguished</li><li>• SLC SQUIB VALVE CONTINUITY LOST Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 20)</li><li>• 2-PI-63-7A, SLC PUMP DISCH PRESS, indicates above RPV pressure</li><li>• System flow, as indicated by 2-IL-63-11, SLC FLOW, red light illuminated on Panel 9-5</li><li>• SLC INJECTION FLOW TO REACTOR Annunciator in alarm on Panel 9-5 (2-XA-55-5B, Window 14).</li></ul> <p><u>Standard:</u></p> <p>Verifies the listed steps</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 6:</u></p> <p>[3] IF proper system operation CANNOT be verified, THEN RETURN to Step 1.0[1] and <b>START</b> other SLC pump.</p> <p><u>Standard:</u></p> <p>Verifies proper system operation</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 7:</u></p> <p>[4] <b>VERIFY</b> RWCU isolation by observing the following:</p> <ul style="list-style-type: none"><li>• RWCU Pumps 2A and 2B tripped</li><li>• 2-FCV-69-1, RWCU INBD SUCT ISOLATION VALVE closed</li><li>• 2-FCV-69-2, RWCU OUTBD SUCT ISOLATION VALVE closed</li><li>• 2-FCV-69-12, RWCU RETURN ISOLATION VALVE closed.</li></ul> <p><u>Standard:</u></p> <p>Verifies RWCU isolation</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 8:</u></p> <p>[5] <b>VERIFY</b> ADS inhibited.</p> <p><u>Standard:</u></p> <p>Inhibits ADS, places 2-XS-1-159A and 161A to Inhibit, and verifies alarms 2-9-3C window 18 and 31</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 9:</u></p> <p>[6] <b>MONITOR</b> reactor power for downward trend.</p> <p><u>Standard:</u></p> <p>Monitors reactor power</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<u>Step 10:</u>  [7] <b>MONITOR</b> 2-LI-63-1A, SLC STORAGE TANK LEVEL, and <b>CHECK</b> that level is dropping approximately 1% per minute.  <u>Standard:</u>  Monitors SLC Tank Level	<b>Critical Step</b>  ___ SAT  ___ UNSAT  ___ N/A
<u>CUE</u> Another Operator will secure SLC when required.	

STOP TIME \_\_\_\_\_

END OF TASK





## Job Performance Measure (JPM)

### Provide to Applicant

#### **INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- The Reactor has scrammed and control rods failed to insert.
- 2-EOI-1, RPV Control has been entered and followed to RC/Q-12.
- Reactor Power is >5%.

#### **INITIATING CUES:**

The Unit Supervisor directs you to perform 2-EOI Appendix-3A, SLC Injection.



## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	2-EOI Appendix-11C, HPCI in Pressure Control / Respond to HPCI Steam Leak U-2	
JPM NUMBER:	627A	REVISION:	0	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):		U-000-EM-55 / Lineup Alternate RPV Pressure Control Systems – HPCI Test Mode in Accordance with EOI Appendix 11C		
K/A RATINGS:	206000 A2.10 RO 4.0 SRO 4.1			
K/A STATEMENT:	Ability to predict the impacts of the following on the HPCI system and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: System Isolation			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	3			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by:	_____	_____
	<i>Developer</i>	<i>Date</i>
	(Ensure validator is briefed on exam security per NPG-SPP-17.8.1) (See JPM Validation Checklist in NPG-SPP-17.8.2)	
Validated by:	_____	_____
	<i>Validator</i>	<i>Date</i>
Approved by:	_____	_____
	<i>Site Training Management</i>	<i>Date</i>
Approved by:	_____	_____
	<i>Site Training Program Owner</i>	<i>Date</i>

Rec'd  
1/7/15



## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: Perform control room operations for RPV pressure control IAW 2-EOI Appendix-11C, and respond to incomplete isolation on HPCI Steam Leak.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-11C; 2-ARP-9-3F;  
2-AOI-64-2B

VALIDATION TIME: 15 Minutes

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_ (Retain entire JPM  
for records)

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	28
Exam IC	109

Batch File or Pref file	
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Malfunctions	Description	Event	Severity	Delay	Initial set
hp09		Active	N/A	N/A	N/A
hp08		1	98	0	N/A

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch/Pref File(s):

Panel Setup:



## Job Performance Measure (JPM)

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**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.  
\*\*\*\*\*

### INITIAL CONDITIONS:

You are an Operator on Unit 2. Unit 2 has Scrammed. Current conditions are as follows:

- RCIC is controlling RPV water level +2 in. to +51 in.
- Main Turbine Bypass valves have failed closed.
- EOI-1, RC/P has been followed to step RC/P-11.

### INITIATING CUE:

The Unit Supervisor has directed you to augment RPV pressure control using HPCI, Appendix 11C.



## Job Performance Measure (JPM)

START TIME \_\_\_\_\_

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p><b>2-EOI Appendix-11C,</b></p> <p style="text-align: center;"><b>CAUTION</b></p> <ul style="list-style-type: none"><li>• Operating HPCI Turbine below 2400 rpm may result in unstable system operation and equipment damage.</li><li>• Operating HPCI Turbine with suction temperatures above 140°F may result in equipment damage.</li></ul> <p>1. IF ..... Suppression Pool level drops below 12.75 ft, THEN ..... <b>TRIP</b> HPCI and <b>CONTROL</b> RPV pressure using other options.</p> <p><u>Standard:</u></p> <p>Verifies suppression pool water level &gt;12.75 ft and determines steps 1 is N/A.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>2. IF ..... Emergency RPV Depressurization is required, <b>OR</b> Steam Cooling is required, THEN ..... <b>EXECUTE</b> EOI Appendix 16C and 16D as necessary to bypass HPCI Low RPV pressure and Test Mode Isolation Interlocks.</p> <p><u>Standard:</u></p> <p>Determines step is N/A.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 3:</u></p> <p>3. IF ..... Suppression Pool level CANNOT be maintained below 5.25 in., THEN ..... <b>EXECUTE</b> EOI Appendix 16E concurrently with this procedure to bypass HPCI High Suppression Pool Level Suction Transfer Interlock.</p> <p><u>Standard:</u></p> <p>Verifies suppression pool water level is &gt;5.25 in and step is N/A.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 4:</u></p> <p>4. IF ..... HPCI Turbine is operating, THEN ..... <b>ALIGN</b> HPCI in test mode as follows:</p> <p>a. <b>OPEN</b> 2-FCV-73-35, HPCI PUMP CST TEST VLV. b. <b>OPEN</b> 2-FCV-73-36, HPCI/RCIC CST TEST VLV. c. <b>CLOSE</b> 2-FCV-73-44, HPCI PUMP INJECTION VALVE. d. <b>CONTINUE</b> in this procedure at Step 6..</p> <p><u>Standard:</u></p> <p>Determines that HPCI is not operating and step is N/A.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>5. IF ..... HPCI is in standby readiness, THEN ..... <b>START</b> HPCI as follows:</p> <p>a. <b>VERIFY</b> at least one SGTS Train in operation. b. <b>VERIFY</b> 2-FIC-73-33, HPCI SYSTEM FLOW/CONTROL, controller in AUTO and set for 5300 gpm.</p> <p><u>Standard:</u></p> <p>Verifies at least one SGTS train is in operation and that HPCI flow controller is in AUTO and set for 5300 gpm.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 6:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>HPCI Auxiliary Oil Pump will NOT start UNTIL 2-FCV-73-16, HPCI TURBINE STEAM SUPPLY VLV, starts to open.</p> <p>c. <b>PLACE</b> 2-HS-73-47A, HPCI AUXILIARY OIL PUMP handswitch in START.</p> <p><u>Standard:</u></p> <p>Places HPCI AUXILIARY OIL PUMP handswitch in START.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 7:</u></p> <p>d. <b>PLACE</b> 2-HS-73-10A, HPCI STEAM PACKING EXHAUSTER, in START.</p> <p><u>Standard:</u></p> <p>Places HPCI STEAM PACKING EXHAUSTER handswitch in START.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 8:</u></p> <p>e. <b>OPEN</b> the following valves:</p> <ul style="list-style-type: none"><li>• 2-FCV-73-36, HPCI/RCIC CST TEST VLV</li><li>• 2-FCV-73-35, HPCI PUMP CST TEST VLV</li><li>• 2-FCV-73-30, HPCI PUMP MIN FLOW VALVE.</li></ul> <p><u>Standard:</u></p> <p>Opens 2-FCV-73-36, 2-FCV-73-35, and 2-FCV-73.30.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 9:</u></p> <p>f. <b>OPEN</b> 2-FCV-73-16, HPCI TURBINE STEAM SUPPLY VLV, to start HPCI Turbine.</p> <p><u>Standard:</u></p> <p>Opens 2-FCV-73-16, HPCI TURBINE STEAM SUPPLY VLV.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 10:</u></p> <p>g. <b>VERIFY</b> HPCI Auxiliary Oil Pump starts and turbine accelerates above 2400 rpm.</p> <p><u>Standard:</u></p> <p>Verifies HPCI turbine speed accelerated above 2400 rpm.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>





## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 11:</u></p> <p>6. <b>VERIFY</b> proper HPCI minimum flow valve operation as follows:</p> <p>a. IF ..... HPCI flow is above 1200 gpm, THEN ..... <b>VERIFY CLOSED</b> 2-FCV-73-30, HPCI PUMP MIN FLOW VALVE.</p> <p>b IF ..... HPCI flow is below 600 gpm, THEN ..... <b>VERIFY OPEN</b> 2-FCV-73-30, HPCI PUMP MIN FLOW VALVE.</p> <p><u>Standard:</u></p> <p>Verifies that the HPCI minimum flow valve is closed.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>NRC:</b> In the following step, if HPCI pump discharge pressure rises to 1500 psig, this would constitute a failure.</p>	
<p><u>Step 12:</u></p> <p>7. <b>THROTTLE</b> 2-FCV-73-35, HPCI PUMP CST TEST VLV, to control HPCI pump discharge pressure at or below 1100 psig.</p> <p>8. <b>ADJUST</b> 2-FIC-73-33, HPCI SYSTEM FLOW/CONTROL, controller to Control RPV pressure</p> <p><u>Standard:</u></p> <p>Throttles and adjusts CST test valve and HPCI flow controller as necessary to maintain pump discharge pressure at or below 1100 psig and control RPV pressure.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>DRIVER:</b> At direction of NRC- Insert Pref Key F5 - to initiate steam leak into HPCI Room</p> <p><b>NRC:</b> The candidate may choose to respond IAW the ARP or the AOI. ARP step is step 14 and AOI Step16</p>	
<p><b>NOTE: NEXT STEP STARTS ALTERNATE PATH</b></p>	



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 13:</u></p> <p><b>2-ARP-9-3F (window 18), HPCI STEAM LINE FLOW EXCESSIVE 2-PDA-73-1</b></p> <p>Automatic Action:</p> <p>A. HPCI TURBINE STOP VALVE, 2-FCV-73-18, closes.</p> <p>B. HPCI PUMP MIN FLOW VALVE, 2-FCV-73-30, closes</p> <p>C. The following HPCI steam supply valves close:</p> <p>*HPCI STEAM LINE INBD ISOL VALVE, 2-FCV-73-2</p> <p>*HPCI STEAM LINE OUTBD ISOL VALVE, 2-FCV-73-3</p> <p>HPCI STEAM LINE WARM-UP VALVE, 2-FCV-73-81</p> <p>D. The following HPCI Suppression Pool suction valves close:</p> <p>HPCI SUPPR POOL INBD SUCT VLV, 2-FCV-73-26</p> <p>HPCI SUPPR POOL OUTBD SUCT VLV, 2-FCV-73-27</p> <p>E. The following amber lights indicating auto isolation seal-in will illuminate:</p> <p>HPCI AUTO ISOL LOGIC A, 2-IL-73-58A</p> <p>HPCI AUTO ISOL LOGIC B, 2-IL-73-58B</p> <p><u>Standard:</u></p> <p>Verifies Automatic Actions occur.</p> <p>*Determines 2-FCV-73-2 did not close. Closes 2-FCV-73-2.</p> <p>*Determines 2-FCV-73-3 did not close. Closes 2-FCV-73-3</p> <p>*Closes the 2-FCV-73-2 and 3 prior to reaching Max Safe Temperature in that Area.</p>	<p><b>*Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>CUE: Another Operator will continue from here.</b></p>	



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 14:</u></p> <p><b>2-ARP-9-3F (window 18), HPCI STEAM LINE FLOW EXCESSIVE 2-PDA-73-1</b></p> <p><b>OPERATOR ACTION:</b></p> <p>A. <b>IF</b> annunciation is valid, <b>THEN REFER TO</b> 2-AOI-64-2b.</p> <p>B. <b>REFER TO</b> Tech Spec 3.5.1, and 3.3.6.1</p> <p><u>Standard:</u></p> <p>Refers to 2-AOI-64-2b. Notifies US of TS 3.5.1 and 3.3.6.1.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 15:</u></p> <p><b>2-AOI-64-2B</b></p> <p><b>4.1 Immediate Actions</b></p> <p>[1] <b>VERIFY</b> automatic actions occur.</p> <p><u>Standard:</u></p> <p>Verifies Automatic Actions occur. TRIPS TURBINE, by depressing HPCI TRIP pushbutton *Determines 2-FCV-73-2 did not close. Closes 2-FCV-73-2. *Determines 2-FCV-73-3 did not close. Closes 2-FCV-73-3</p> <p>*Closes the 2-FCV-73-2 and 3 prior to reaching Max Safe Temperature in that Area.</p>	<p><b>*Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>CUE: Another Operator will continue from here.</b></p>	

STOP TIME \_\_\_\_\_

END OF TASK



## Job Performance Measure (JPM)

### Provide to Applicant

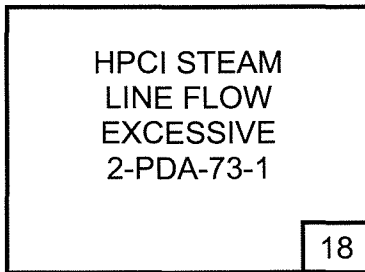
#### INITIAL CONDITIONS:

You are an Operator on Unit 2. Unit 2 has Scrammed. Current conditions are as follows:

- RFPs are controlling RPV water level +2 in. to +51 in.
- One Main Turbine Bypass valve is partially open
- EOI-1, RC/P has been followed to step RC/P 11

#### INITIATING CUE:

The Unit Supervisor has directed you to augment RPV pressure control using HPCI, Appendix 11C.



Sensor/Trip Point:

PDIS 73-1A

85 psid (~200%flow), 3-second time delay  
PDIS 73-1B

(Page 1 of 1)

<b>Sensor Location:</b>	PDIS-73-1A	PDIS-73-1B
	Unit 2 Aux Inst RM Panel 9-81	Unit 2 Aux Inst RM Panel 9-82
<b>Probable Cause:</b>	A. Large steam line break. B. Sensor malfunction. C. HPCI started with Aux Oil Pump previously running.	
<b>Automatic Action:</b>	A. HPCI TURBINE STOP VALVE, 2-FCV-73-18, closes. B. HPCI PUMP MIN FLOW VALVE, 2-FCV-73-30, closes. C. The following HPCI steam supply valves close: <ul style="list-style-type: none"><li>• HPCI STEAM LINE INBD ISOL VALVE, 2-FCV-73-2</li><li>• HPCI STEAM LINE OUTBD ISOL VALVE, 2-FCV-73-3</li><li>• HPCI STEAM LINE WARM-UP VALVE, 2-FCV-73-81.</li></ul> D. The following HPCI Suppression pool suction valves close: <ul style="list-style-type: none"><li>• HPCI SUPPR POOL INBD SUCT VLV, 2-FCV-73-26</li><li>• HPCI SUPPR POOL OUTBD SUCT VLV, 2-FCV-73-27</li></ul> E. The following amber lights, indicating auto isolation seal-in, will illuminate. <ul style="list-style-type: none"><li>• HPCI AUTO ISOL LOGIC A, 2-IL-73-58A</li><li>• HPCI AUTO ISOL LOGIC B, 2-IL-73-58B</li></ul>	
<b>Operator Action:</b>	A. IF annunciation is valid, <b>THEN</b> <b>REFER TO 2-AOI-64-2b.</b>	<input type="checkbox"/>
	B. <b>REFER TO</b> Tech Spec 3.5.1, and 3.3.6.1	<input type="checkbox"/>
<b>References:</b>	2-45E620-1 47W600-8	2-47E610-73-1 GE 730E928-4 Technical Specifications 3.5.1, and 3.3.6.1.



## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	Operate the RHR System in Shutdown Cooling in accordance with 2-EOI Appendix 17D U-2
JPM NUMBER:	628	REVISION:	0

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-000-EM-82 / Operate the RHR System in shutdown Cooling in accordance with EOI Appendix 17D			
K/A RATINGS:	205000 A2.10		K/A RATING: RO 2.9 SRO 2.9	
K/A STATEMENT:	Ability to (a) predict the impacts of the following on the SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE); and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Valve operation			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	4			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by:

\_\_\_\_\_  
*Developer* *Date*  
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)  
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

\_\_\_\_\_  
*Validator* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Management* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Program Owner* *Date*

Rec'd  
1/7/15



## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: Perform operations necessary to place RHR Loop I in Shutdown  
Cooling as directed by 2-EOI Appendix 17D

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix 17D

VALIDATION TIME: 40 minutes

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	
Exam IC	102

Batch File or Pref file	
-------------------------------	--

Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set
AN:XA553E32	RHR SYS I/II DISCH OR SD CLG HDR PRESS HIGH	Active	NA	NA	OFF

Batch / Pref File(s):

Panel Setup: Ops SI 3.4.9.1.1 (HUR) on one ICS Monitor





## Job Performance Measure (JPM)

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**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

### INITIAL CONDITIONS:

You are an Operator. Unit 2 reactor has scrammed and EOI-1 has been followed to RC/P-15. The Shift Manager has directed the unit be brought to cold shutdown. RHR Loop flushing is NOT directed. Another operator is performing the cooldown log, 2-SR-3.4.9.1(1).

### INITIATING CUE:

The Unit Supervisor directs you to initiate shutdown cooling on RHR Loop I in accordance with 2-EOI Appendix 17D, RHR System Operation Shutdown Cooling. RHR Loop flushing is NOT directed.



## Job Performance Measure (JPM)

START TIME \_\_\_\_\_

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p><b>2-EOI APPENDIX-17D, RHR SYSTEM OPERATION SHUTDOWN COOLING</b></p> <p style="text-align: center;"><b>NOTE</b></p> <p>Due to ALARA or other circumstances, including time constraints, it may be necessary to place RHR in Shutdown Cooling without flush as determined by the Unit SRO.</p> <p>[1] <b>VERIFY</b> the following:</p> <ul style="list-style-type: none"><li>• RPV pressure below 100 psig</li></ul> <p>AND</p> <ul style="list-style-type: none"><li>• RPV water level above +2 in.</li></ul> <p>AND</p> <ul style="list-style-type: none"><li>• Drywell pressure below 2.4 psig</li></ul> <p><u>Standard:</u></p> <p>Verifies RPV pressure below 100 psig, RPV water level above +2 in., and Drywell pressure below 2.4 psig.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>[2] <b>PERFORM</b> the following for RHR System desired for Shutdown Cooling:</p> <p>[2.1] <b>VERIFY</b> RHR Pumps 2A and 2C <u>NOT</u> running.</p> <p><u>Standard:</u></p> <p>Verifies RHR Pumps 2A and 2C NOT RUNNING by illuminated GREEN lights above handswitches.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 3:</u></p> <p>[2.2] <b>VERIFY CLOSED</b> the following spray and test valves:</p> <ul style="list-style-type: none"><li>• 2-FCV-74-57, RHR SYS I SUPPR CHBR/POOL ISOL VLV</li><li>• 2-FCV-74-59, RHR SYS I SUPPR POOL CLG/TEST VLV.</li></ul> <p><u>Standard:</u></p> <p>Verifies 2-FCV-74-57 and 2-FCV-74-59 closed.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 4:</u></p> <p>[2.3] <b>VERIFY CLOSED</b> the following spray valves:</p> <ul style="list-style-type: none"><li>• 2-FCV-74-61, RHR SYS I DW SPRAY INBD VLV</li><li>• 2-FCV-74-60, RHR SYS I DW SPRAY OUTBD VLV</li><li>• 2-FCV-74-58, RHR SYS I SUPPR CHBR SPRAY VALVE</li></ul> <p><u>Standard:</u></p> <p>Verifies 2-FCV-74-61, 2-FCV-74-60, and 2-FCV-74-58 CLOSED.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>[2.4] <b>VERIFY CLOSED</b> the following injection valves:</p> <ul style="list-style-type: none"><li>• 2-FCV-74-52, RHR SYS I LPCI OUTBD INJECT VALVE</li><li>• 2-FCV-74-53, RHR SYS I LPCI INBD INJECT VALVE</li></ul> <p><u>Standard:</u></p> <p>Closes 2-FCV-74-52 and verifies 2-FCV-74-53 closed.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 6:</u></p> <p>[3] IF Unit SRO directs RHR System flush, <b>THEN PERFORM</b> the following:</p> <p>[3.1] <b>PERFORM ONLY</b> Section 8.7 of 2-OI-74.</p> <p>[3.2] <b>WHEN</b> Section 8.7 of 2-OI-74 is complete, <b>THEN CONTINUE</b> in this procedure.</p> <p><u>Standard:</u></p> <p>N/A, given in the initial conditions.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 7:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>When placing RHR System II in shutdown cooling, <u>BOTH</u> selector switches must be placed in SHDN.</p> <p>[4] <b>DISPATCH</b> personnel to <b>PLACE</b> 2-HS-74-157 MODE SELECTOR SWITCH, in SHDN (480V RMOV Board 2A, Compartment 5B).</p> <p><u>Standard:</u></p> <p>Dispatches AUO to place 2-HS-74-157 in SHUTDOWN position.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b><u>Driver:</u> When requested, INSERT MRF RH18 SHUTDOWN Report to control room that 2-HS-74-157 has been placed in the Shutdown position.</b></p>	
<p><u>Step 8:</u></p> <p>[5] <b>CLOSE</b> the following valves:</p> <ul style="list-style-type: none"><li>• 2-FCV-74-1, RHR PMP 2A SUPPR POOL SUCT VLV</li><li>• 2-FCV-74-12, RHR PMP 2C SUPPR POOL SUCT VLV</li></ul> <p><u>Standard:</u></p> <p>Closes 2-FCV-74-1 and 2-FCV-74-12.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<u>Step 9:</u>  [6] <b>PLACE</b> 2-HS-74-148, RHR SYS I MIN FLOW INHIBIT, in INHIBIT.  <u>Standard:</u>  Places 2-HS-74-148 in the INHIBIT position.	<b>Critical Step</b>  ___ SAT  ___ UNSAT  ___ N/A
<b>NRC: The Operator is directed to align RHR Loop I if the operator disables RHR LPCI Mode by performing items in parenthesis (RHR Loop II) this would constitute a FAILURE.</b>	
<u>Step 10:</u>  [7] <b>VERIFY CLOSED</b> 2-FCV-74-7, RHR SYSTEM I MIN FLOW VALVE.  <u>Standard:</u>  Verifies 2-FCV-74-7 closed.	___ SAT  ___ UNSAT  ___ N/A
<u>Step 11:</u>  [8] <b>OPEN</b> at least <u>ONE</u> of the following valves to the desired RHR Pump:  • 2-FCV-74-2, RHR PUMP 2A SD COOLING SUCT VLV  • 2-FCV-74-13, RHR PUMP 2C SD COOLING SUCT VLV  <u>Standard:</u>  Opens either 2-FCV-74-2 or 2-FVC-74-13 OR BOTH.	<b>Critical Step</b>  ___ SAT  ___ UNSAT  ___ N/A
<u>Step 12:</u>  [9] <b>DISPATCH</b> personnel to <b>CLOSE</b> 250V breaker to 2-FCV-74-47, RHR SHUTDOWN COOLING SUCT OUTBD ISOL VLV (250V RMOV Board 2A, Compartment R1A).  <u>Standard:</u>  Dispatches AUO to close breaker for 2-FCV-74-47.	<b>Critical Step</b>  ___ SAT  ___ UNSAT  ___ N/A
<b>DRIVER: When dispatched <u>DOR YPOVFCV7447</u> and report power is restored to 2-FCV-74-47</b>	



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 13:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>Establishing RPV water level above 40 inches before proceeding beyond Step 1.0[9] will reduce likelihood of shutdown cooling isolation on low RPV water level.</p> <p>[10] OPEN the following Shutdown Cooling Isolation Valves:</p> <ul style="list-style-type: none"><li>• 2-FCV-74-47, RHR SHUTDOWN COOLING SUCT OUTBD ISOL VLV</li><li>• 2-FCV-74-48, RHR SHUTDOWN COOLING SUCT INBD ISOL VLV.</li></ul> <p><u>Standard:</u></p> <p>Opens 2-FCV-74-47 and 48.</p>	<p style="text-align: center;"><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 14:</u></p> <p>[11] <b>VERIFY</b> at least <u>ONE</u> RHRSW pump supplying each EECW header.</p> <p><u>Standard:</u></p> <p>Verifies A3 or C3 and B3 or D3 EECW pumps running.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 15:</u></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Failure to dilute RHRSW discharge flow from any in-service RHR Heat Exchanger through the companion RHR Heat Exchanger could result in exceeding the qualification temperature limit (150°F) on RHRSW piping and components downstream of the Heat Exchanger.</p> <p>[12] <b>VERIFY</b> a RHRSW Pump OPERATING to establish flow through the companion RHR Heat Exchanger NOT being used for Shutdown Cooling.</p> <p><u>Standard:</u></p> <p>Starts RHRSW Pump A1 or A2 or C1 or C2.</p>	<p style="text-align: center;"><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<b>CUE: As other UO, acknowledge start of service water pump</b>	



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 16:</u></p> <p>[13] <b>THROTTLE OPEN</b> companion RHR HX RHRSW outlet valve to obtain a flow of between 3,000 gpm to 4,000 gpm.</p> <p><u>Standard:</u></p> <p>Throttles OPEN the associated RHR HX RHRSW outlet valve to obtain 3000 to 4000 gpm flow through the RHR companion heat exchanger.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 17:</u></p> <p>[14] <b>START</b> RHRSW pump to supply desired RHR Heat Exchanger(s).</p> <p><u>Standard:</u></p> <p>Starts RHRSW Pump A1 or A2 or C1 or C2 (Whichever RHRSW Pump that was not started in Step 15).</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<b>CUE: As other UO, acknowledge direction to carry minimum flow for RHRSW</b>	
<p><u>Step 18:</u></p> <p>[15] <b>VERIFY</b> RHR System discharge pressure above 45 psig as indicated on 2-PI-74-51, RHR SYS I DISCH PRESS.</p> <p><u>Standard:</u></p> <p>Verifies RHR System I discharge pressure greater than 45 psig as indicated on 2-PI-74-51.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 19:</u></p> <p>[16] <b>VERIFY</b> Reactor Recirc Pump 2B stopped.</p> <p><u>Standard:</u></p> <p>Verifies Recirc Pump 2B not running.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 20:</u></p> <p>[17] <b>VERIFY CLOSED</b> 2-FCV-68-79, RECIRC PUMP 2B DISCHARGE VALVE.</p> <p><u>Standard:</u></p> <p>Verifies 2-FCV-68-79, Recirc Pump 2B Discharge valve closed.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 21:</u></p> <p>[18] <b>START</b> RHR Pump 2A or 2C to the desired RHR Heat Exchanger.</p> <p><u>Standard:</u></p> <p>Starts RHR Pump 2A or 2C.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 22:</u></p> <p>[19] <b>OPEN</b> 2-FCV-74-53, RHR SYS I LPCI INBD INJECT VALVE.</p> <p><u>Standard:</u></p> <p>Opens 2-FCV-74-53.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 23:</u></p> <p>[20] <b>THROTTLE OPEN</b> 2-FCV-74-52, RHR SYS I LPCI OUTBD INJECT VALVE, to maintain EITHER of the following as indicated on 2-FI-74-50, RHR SYS I FLOW:</p> <ul style="list-style-type: none"><li>• 7,000 to 10,000 gpm for one-pump operation</li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>• 14,000 to 20,000 gpm for two-pump operation</li></ul> <p><u>Standard:</u></p> <p>Places 2-HS-74-52 in the OPEN position and throttles OPEN 2-FCV-74-52 to obtain 7000 to 10000 gpm flow as indicated on 2-FI-74-50.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>





## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 24:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>RHRSW flow through another unit's associated heat exchanger may be necessary to prevent operating RHRSW pump below minimum flow of 1,350 gpm.</p> <p style="text-align: center;"><b>CAUTIONS</b></p> <ol style="list-style-type: none"><li>1) Failure to throttle RHR Heat Exchanger RHRSW Valves when little decay heat is present could result in excessive cooldown rates.</li><li>2) Exceeding 4,500 gpm RHRSW flow through ANY RHR Heat Exchanger may cause system damage.</li><li>3) Cooldown rates above 90°F/hr may exceed established RPV metal ductility limits.</li></ol> <p>[21] <b>SLOWLY THROTTLE OPEN</b> the following in-service RHRSW Outlet valves to obtain the desired cool down rate:</p> <ul style="list-style-type: none"><li>• 2-FCV-23-34, RHR HX 2A RHRSW OUTLET VLV</li><li>• 2-FCV-23-40, RHR HX 2C RHRSW OUTLET VLV</li></ul> <p><u>Standard:</u></p> <p>Throttles open 2-FCV-23-34 or 40 to greater than 1350 gpm as indicated on 2-FI-23-36. Less flow is acceptable if applicant arranged for another unit to set flow through their heat exchanger.</p>	<p style="text-align: center;"><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 25:</u></p> <p>22] <b>MAINTAIN</b> RHR HX A/C COM DISCH temperature less than 140°F (2-TR-74-80, Panel 9-21) by throttling the companion RHR Heat Exchanger RHRSW Outlet Valve.</p> <p><u>Standard:</u></p> <p>Throttles 2-FCV-23-40 or 34, RHR HX 2C or 2A RHRSW OUTLET VLV as necessary to maintain temperature less than 140°F on 2-TR-74-80.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



**END OF TASK**

13



## Job Performance Measure (JPM)

### Provide to Applicant

#### **INITIAL CONDITIONS:**

You are an Operator. Unit 2 reactor has scrammed and EOI-1 has been followed to RC/P-15. The Shift Manager has directed the unit be brought to cold shutdown. RHR Loop flushing is NOT directed. Another operator is performing the cooldown log, 2-SR-3.4.9.1(1).

#### **INITIATING CUE:**

The Unit Supervisor directs you to initiate shutdown cooling on RHR Loop I in accordance with 2-EOI Appendix 17D, RHR System Operation Shutdown Cooling. RHR Loop flushing is NOT directed.



## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	2-SR-3.3.2.1.2 - RWM Functional Test for Startup	
JPM NUMBER:	399	REVISION:	01	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-085-SU-02 Perform RWM Functional Test for Startup			
K/A RATINGS:	RO 3.5 SRO 3.4			
K/A STATEMENT:	201006 A3.02 Ability to monitor automatic operations of the RWM Sys including: Verification of proper functioning/ operability:			
RELATED PRA INFORMATION:	None			
SAFETY FUNCTION:	7			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by:

\_\_\_\_\_  
*Developer* *Date*  
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)  
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

\_\_\_\_\_  
*Validator* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Management* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Program Owner* *Date*



## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

JPM Number: 399 U2

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: Complete 2-SR-3.3.2.1.2 RWM Functional Test for Startup

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure 2-SR-3.3.2.1.2

VERIFICATION TIME: 15 minutes

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_ (Retain entire JPM  
for records)

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	
Exam IC	98

Batch File or Pref file	
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Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s):

Verify RWM alarms on the screen are all reset / acknowledged.



## Job Performance Measure (JPM)

\*\*\*\*\*

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

### INITIAL CONDITIONS:

You are an Operator on Unit 2. Unit 2 is making preparations for startup using the A2 Startup Sequence. The RWM is in operation per 2-OI-85. Reactor Engineering has performed 2-SR-3.3.2.1.7, RWM Program Verification.

2-SR-3.3.2.1.2 RWM Functional Test for Startup is complete through step 7.0 [7.2].

### INITIATING CUE:

The Unit Supervisor has directed you to complete 2-SR-3.3.2.1.2, RWM Functional Test for Startup, a Reactor Engineer is present and monitoring as needed.



## Job Performance Measure (JPM)

### START TIME

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p>[7.3] <b>REFER</b> to the Control Rod Movement Data Sheet from 2-SR-3.1.3.5(A) to identify a rod from RWM Group 02.</p> <p>[7.4] <b>RECORD</b> below the rod chosen:</p> <p>Rod Number: ____ - ____:</p> <p><u>Standard:</u></p> <p>Refers to 2-SR-3.1.3.5(A) and chooses a rod from Group 2, records identified rod (can be ANY control rod from RWM Group 2 (A2 Startup Sequence) – (02-31, 26-07, 58-23, 42-55, 10-39, 42-07, 58-39, 26-55, 10-23, 50-15, 50-47, 18-47, 18-15, 50-31, 34-47, 18-31, 34-15, 42-39, 26-39, 26-23, 42-23, or 34-31).</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>*[7.5] <b>SELECT</b> the rod recorded in Step 7.0[7.4].</p> <p>[7.6] <b>VERIFY</b> the SELECT ERROR status block on the RWM display is in alarm (red background).</p> <p><u>Standard:</u></p> <p>Selects the rod previously recorded and verifies select error in alarm</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 3:</u></p> <p>*[7.7] <b>NOTCH</b> the selected rod to position 02.</p> <p>[7.8] <b>VERIFY</b> that the rod moved to position 02 is identified as a withdraw error on the RWM display.</p> <p><u>Standard:</u></p> <p>Notches the rod to position 02 and verifies a withdraw error on the display.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>





## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 4:</u></p> <p>*[7.9] <b>PLACE</b> the CRD Control switch (2-HS-85-48) to ROD OUT NOTCH <b>AND VERIFY</b> the following:</p> <p>[7.9.1] The selected control rod does <b>NOT</b> withdraw.</p> <p>[7.9.2] The WITHDRAW BLOCK status block on the RWM display is in alarm (red background).</p> <p>[7.9.3] RWM ROD BLOCK (2-XA-55-5B, Window 35) is in ALARM.</p> <p><u>Standard:</u></p> <p>Places the CRD control switch to ROD OUT NOTCH and verifies rod does not withdraw. Verifies withdraw block status block on RWM display is in alarm as well as RWM Rod Block alarm 2-XA-55-5B, window 35.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>[7.10] <b>INSERT</b> the selected rod from position 02 to 00.</p> <p><u>Standard:</u></p> <p>Inserts the selected rod from position 02 to 00</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 6:</u></p> <p>[7.11] <b>REFER</b> to the Control Rod Movement Data Sheet from 2-SR-3.1.3.5(A) to identify a rod from RWM Group 01.</p> <p>[7.12] <b>RECORD</b> below the rod chosen:</p> <p>Rod Number: ____ - ____:</p> <p><u>Standard:</u></p> <p>Refers to 2-SR-3.1.3.5(A) and chooses a rod from Group 1, records identified rod (can be ANY control rod from RWM Group 1 (A2 Startup Sequence) – (58-31, 34-07, 02-23, 18-55, 50-39, 19-07, 02-39, 34-55, 50-23, 10-15, 10-47, 42-47, 42-15, 10-31, 26-47, 42-31, 26-15, 18-39, 34-39, 34-23, 18-23, or 26-31).</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 7:</u></p> <p>[7.13] <b>SELECT</b> the rod recorded in Step 7.0[7.12].</p> <p><u>Standard:</u></p> <p>Selects the rod recorded previously.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 8:</u></p> <p>[7.14] <b>VERIFY</b> the WITHDRAW BLOCK status block on the RWM display is <b>NOT</b> in alarm.</p> <p>[7.15] <b>VERIFY</b> RWM ROD BLOCK (2-XA-55-5B, Window 35) will RESET.</p> <p>[7.16] <b>VERIFY</b> that rod Group 01 is indicated as the latched group on the RWM Panel.</p> <p><u>Standard:</u></p> <p>Verifies the Withdraw Block status block on the RWM display is not in alarm and resets alarm window 35 on 2-XA-55-5B. Verifies that Group 1 is indicated as the latched Group on the RWM panel.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 9:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>RWM Rod Withdraw Block may be received whenever deselecting rod.</p> <p>*[7.17] <b>PLACE</b> the Control Rod Drive (CRD) Power switch (2- HS-85-46) momentarily to OFF <b>AND</b> next <b>SWITCH</b> to ON.</p> <p>[7.18] <b>VERIFY ALL</b> control rods are deselected on the rod select matrix.</p> <p><u>Standard:</u></p> <p>Places the CRD Power switch to OFF and then ON and verifies all control rods are deselected on the rod select matrix.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<u>Step 10:</u>	
[8] <b>NOTIFY</b> the UO that this SR test procedure is complete.	___ SAT
[9] <b>NOTIFY</b> the US that this SR test procedure is complete and obtain Acceptance Criteria Review on STS.	___ UNSAT
	___ N/A
<u>Standard:</u>	
Notifies personnel of completion and requests US review Acceptance Criteria from STS.	

STOP TIME \_\_\_\_\_

END OF TASK

Provide to Applicant

**INITIAL CONDITIONS:** You are an Operator on Unit 2. Unit 2 is making preparations for startup using the A2 Startup Sequence. The RWM is in operation per 2-OI-85. Reactor Engineering has performed 2-SR-3.3.2.1.7, RWM Program Verification.

2-SR-3.3.2.1.2 RWM Functional Test for Startup is complete through step 7.0 [7.2].

**INITIATING CUES:** The Unit Supervisor has directed you to complete 2-SR-3.3.2.1.2, RWM Functional Test for Startup, a Reactor Engineer is present and monitoring as needed



## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	2-EOI-Appendix 13 Emergency Venting Primary Containment U-2	
JPM NUMBER:	55A	REVISION:	0	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):		U-000-EM-63 / Emergency Vent Primary Containment in Accordance with EOI Appendix 13		
K/A RATINGS:	295024EA2.01		K/A RATING: RO 4.2 SRO 4.4	
K/A STATEMENT:	Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Drywell Pressure			
RELATED PRA INFORMATION:		N/A		
SAFETY FUNCTION:	5			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by:

\_\_\_\_\_  
*Developer* *Date*  
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)  
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

\_\_\_\_\_  
*Validator* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Management* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Program Owner* *Date*



## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

JPM Number: 55A

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: 2-EOI-Appendix-13 complete with Drywell Pressure restored and maintained below 55 psig.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-13

VALIDATION TIME: 15 minutes

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	
Exam IC	108

Batch File or Pref file	bat NRC/appendix13
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Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s):



## Job Performance Measure (JPM)

\*\*\*\*\*

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

### INITIAL CONDITIONS:

You are an operator. A large leak inside Primary Containment has developed on Unit 2. The Reactor has been scrammed and several control rods are not fully inserted. Primary containment pressure has exceeded the PSP curve (curve 6) and is approaching 55 psig and rising.

### INITIATING CUE:

The Unit Supervisor directs you to vent Primary Containment as directed by 2-EOI-Appendix-13, Emergency Venting Primary Containment, and then maintain containment pressure below 55 psig.





## Job Performance Measure (JPM)

START TIME \_\_\_\_\_

DRIVER: This JPM may require RHR injection for level control	
STEP / STANDARD	SAT / UNSAT
<u>Step 1:</u>	
1. <b>NOTIFY</b> Shift Manager / SED of the following: <ul style="list-style-type: none"><li>Emergency Venting of Primary Containment is in progress.</li><li>Off-Gas Release Rate Limits will be exceeded.</li></ul> <u>Standard:</u>  Operator notifies Shift Manager/SED.	___ SAT ___ UNSAT ___ N/A
<b>CUE: As Shift Manager/SED acknowledge report that Emergency Primary Containment Venting is in progress and Off-Gas release limits will be exceeded</b>	
<u>Step 2:</u>	
2. <b>VENT</b> the Suppression Chamber as follows (Panel 9-3):  a. IF EITHER of the following exists: <ul style="list-style-type: none"><li>Suppression Pool water level CANNOT be determined to be below 20 ft,</li></ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"><li>Suppression Chamber CANNOT be vented,</li></ul> <p>THEN <b>CONTINUE</b> in this procedure at Step 3.</p> <u>Standard:</u>  Operator verifies Suppression Pool level below 20 ft using 2-LI-64-159A and does NOT continue to step 3.	___ SAT ___ UNSAT ___ N/A



## Job Performance Measure (JPM)

<p><u>Step 3:</u></p> <p>b. <b>PLACE</b> keylock switch 2-HS-64-222B, HARDENED SUPPR CHBR VENT OUTBD PERMISSIVE, in PERM.</p> <p><u>Standard:</u></p> <p>Operator places 2-HS-64-222B in the PERM position.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 4:</u></p> <p>c. <b>CHECK</b> blue indicating light above 2-HS-64-222B, HARDENED SUPPR CHBR VENT OUTBD PERMISSIVE, illuminated.</p> <p><u>Standard:</u></p> <p>Operator verifies BLUE indicating lamp above 2-HS-64-222B Illuminated.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>d. <b>OPEN</b> 2-FCV-64-222, HARDENED SUPPR CHBR VENT OUTBD ISOL VLV.</p> <p><u>Standard:</u></p> <p>Operator places 2-HS-64-222A in the OPEN position and verifies 2-FCV-64-222 OPEN.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 6:</u></p> <p>e. <b>PLACE</b> keylock switch 2-HS-64-221B, HARDENED SUPPR CHBR VENT INBD PERMISSIVE, in PERM.</p> <p><u>Standard:</u></p> <p>Operator places 2-HS-64-221B in the PERM position.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

<p><u>Step 7:</u></p> <p>f. <b>CHECK</b> blue indicating light above 2-HS-64-221B, HARDENED SUPPR CHBR VENT INBD PERMISSIVE, illuminated.</p> <p><u>Standard:</u></p> <p>Operator verifies BLUE indicating lamp above 2-HS-64-221B illuminated.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>NOTE: Alternate path starts with Step 8.</b></p>	
<p><u>Step 8:</u></p> <p>g. <b>OPEN</b> 2-FCV-64-221, HARDENED SUPPR CHBR VENT INBD ISOL VLV.</p> <p><u>Standard:</u></p> <p>Operator places 2-HS-64-221 in the OPEN position and recognizes that the valve did NOT open. Reports that the suppression chamber cannot be vented and proceeds to Step 3.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>CUE: Acknowledge that the suppression chamber cannot be vented and that operator is continuing to Step 3.</b></p>	
<p><u>Step 9:</u></p> <p>3. IF Suppression Chamber vent path is NOT available, THEN <b>VENT</b> the Drywell as follows:</p> <p>a. <b>NOTIFY</b> Shift Manager / SED that Secondary Containment integrity failure is possible.</p> <p>b. <b>NOTIFY</b> Radiation Protection that Reactor Building is being evacuated due to imminent failure of Primary Containment vent ducts.</p> <p>c. <b>EVACUATE</b> ALL Reactor Buildings using P.A. System.</p> <p><u>Standard:</u></p> <p>Operator notifies the SM/SED that containment integrity failure is possible, notifies RP that the Reactor Building will be evacuated due to imminent failure of Primary Containment vent ducts, and makes P.A. announcement to evacuate Reactor Building.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

**CUE: As SM/SED acknowledge report of possible containment integrity failure, As RP acknowledge report of Reactor Building evacuation due to imminent failure of Primary Containment vent ducts.**

<p><u>Step 10:</u></p> <p>d.     <b>START</b> ALL available SGTS trains.</p> <p><u>Standard:</u></p> <p>Operator determines that all trains of SGTS are already in service by observing SGT OPERATING lights on 2-9-20.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 11:</u></p> <p>e.     <b>VERIFY CLOSED</b> 2-FCV-64-36, DW/SUPPR CHBR VENT TO SGT (Panel 9-3).</p> <p><u>Standard:</u></p> <p>Operator verifies 2-FCV-64-36 is closed on Panel 9-3.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 12:</u></p> <p>f.     <b>VERIFY OPEN</b> the following dampers (Panel 9-25):</p> <ul style="list-style-type: none"><li>•     2-FCO-64-40, REACTOR ZONE EXH TO SGTS</li><li>•     2-FCO-64-41, REACTOR ZONE EXH TO SGTS</li></ul> <p><u>Standard:</u></p> <p>Operator verifies dampers 2-FCO-64-40 and 2-FCO-64-41 are open on Panel 9-25.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 13:</u></p> <p>g.     <b>VERIFY CLOSED</b> 2-FCV-64-29, DRYWELL VENT INBD ISOL VALVE (Panel 9-3 or Panel 9-54).</p> <p><u>Standard:</u></p> <p>Operator verifies 2-FCV-64-29 is closed on Panel 9-3 or Panel 9-54.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

<p><u>Step 14:</u></p> <p>h. <b>DISPATCH</b> personnel to Unit 2 Auxiliary Instrument Room to perform the following:</p> <ol style="list-style-type: none"><li>1) <b>REFER TO</b> Attachment 1 and <b>OBTAIN</b> one 12-in. banana jack jumper from EOI Equipment Storage Box.</li><li>2) <b>LOCATE</b> terminal strip DD in Panel 9-43, Front.</li><li>3) <b>JUMPER</b> DD-76 to DD-77 (Panel 9-43).</li><li>4) <b>NOTIFY</b> Unit Operator that jumper for 2-FCV-64-30, DRYWELL VENT OUTBD ISOLATION VLV, is in place.</li></ol> <p><u>Standard:</u></p> <p>Operator contacts an AUO or an extra operator to perform step h.1) thru h.4).</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>DRIVER: When called to install jumper for 2-FCV-64-30, insert MRF PC04 BYPASS, then call operator and report that the jumper for 2-FCV-64-30 is in place.</b></p>	
<p><u>Step 15:</u></p> <p>i. <b>VERIFY OPEN</b> 2-FCV-64-30, DRYWELL VENT OUTBD ISOLATION VLV (Panel 9-3).</p> <p><u>Standard:</u></p> <p>Operator verifies open 2-FCV-64-30 on panel 9-3.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

<p><u>Step 16:</u></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>1. The following step will fail ductwork inside Secondary Containment and may fail Secondary Containment Integrity.</p> <p>2. Off-Gas Release Rate Limits will be exceeded.</p> <p>j. <b>PLACE</b> keylock switch 2-HS-84-36, SUPPR CHBR/DW VENT ISOL BYP SELECT, to DRYWELL (Panel 9-54).</p> <p><u>Standard:</u></p> <p>Operator places keylock switch 2-HS-84-36 to the DRYWELL position.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 17:</u></p> <p>k. <b>VERIFY OPEN</b> 2-FCV-64-29, DRYWELL VENT INBD ISOL VALVE (Panel 9-54).</p> <p><u>Standard:</u></p> <p>Operator verifies that 2-FCV-64-29 opens on Panel 9-54.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 18:</u></p> <p>l. <b>CHECK</b> Drywell and Suppression Chamber pressure lowering.</p> <p>m. <b>MAINTAIN</b> Primary Containment pressure below 55 psig using 2-FCV-64-29, DRYWELL VENT INBD ISOL VALVE, as directed by SRO.</p> <p><u>Standard:</u></p> <p>Operator checks that containment pressures are lowering and cycles FCV-64-29 as necessary to maintain less than 55 psig.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>NRC: When satisfied the operator is maintaining containment pressure</b></p> <p><b>CUE: Another operator will control Primary Containment pressure.</b></p>	



## Job Performance Measure (JPM)

**END OF TASK**

**STOP TIME: \_\_\_\_\_**



## Job Performance Measure (JPM)

### Provide to Applicant

#### **INITIAL CONDITIONS:**

You are an operator. A large leak inside Primary Containment has developed on Unit 2. The Reactor has been scrammed and several control rods are not fully inserted. Primary containment pressure has exceeded the PSP curve (curve 6) and is approaching 55 psig and rising.

#### **INITIATING CUE:**

The Unit Supervisor directs you to vent Primary Containment as directed by 2-EOI-Appendix-13, Emergency Venting Primary Containment, and then maintain containment pressure below 55 psig.





## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	Restore Offsite Power to 4KV shutdown board at PNL 9-23 U-2
JPM NUMBER:	631	REVISION:	0

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-082-NO-09 / Restore Offsite Power to 4KV shutdown board at PNL 9-23			
K/A RATINGS:	RO 3.5 SRO 3.6			
K/A STATEMENT:	264000 A2.01 Ability to (a) predict the impacts of the following on the EMERGENCY GENERATORS (DIESEL/JET); and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Parallel operation of emergency generator			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	6			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by:	_____ <i>Developer</i> (Ensure validator is briefed on exam security per NPG-SPP-17.8.1) (See JPM Validation Checklist in NPG-SPP-17.8.2)		_____ <i>Date</i>
Validated by:	_____ <i>Validator</i>		_____ <i>Date</i>
Approved by:	_____ <i>Site Training Management</i>		_____ <i>Date</i>
Approved by:	_____ <i>Site Training Program Owner</i>		_____ <i>Date</i>

Rec'd  
1/7/15



## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

JPM Number: 631

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: Perform operations necessary to restore offsite power to 4KV SD BD  
A from 4KV SD BUS 1.

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure 0-OI-82

VERIFICATION TIME: 15 Min

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_ (Retain entire JPM  
for records)

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	
Exam IC	103

Batch File or Pref file	
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Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s):



## Job Performance Measure (JPM)

\*\*\*\*\*

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

### INITIAL CONDITIONS:

You are an Operator on Unit 2.

- No Inclement weather currently exists in the area
- One hour ago, 4 KV Shutdown Board A was separated from Offsite Power in accordance with 0-OI-82, Standby Diesel Generator System.

### INITIATING CUE:

The Unit Supervisor has directed you to restore offsite power to 4KV Shutdown Board A using the normal feeder breaker and remove DG A from parallel operation in accordance with 0-OI-82, Section 8.3, Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23.



## Job Performance Measure (JPM)

### START TIME

STEP / STANDARD	SAT / UNSAT															
<p><u>Step 1:</u></p> <p><b>0-OI-82 Standby Diesel Generator System</b></p> <p><b>Section 8.3 Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23</b></p> <p><b>NOTE</b> The following list of 4-kV shutdown board normal and alternate feeder breakers may be useful when performing this section:</p> <table border="1"><thead><tr><th>Shutdown Board</th><th>A</th><th>B</th><th>C</th><th>D</th></tr></thead><tbody><tr><td>Norm Feed Bkr</td><td>1614</td><td>1616</td><td>1718</td><td>1724</td></tr><tr><td>Alt Feed Bkr</td><td>1716</td><td>1714</td><td>1624</td><td>1618</td></tr></tbody></table> <p>[1] <b>VERIFY</b> 4-kV Shutdown Board A is being supplied power by its respective Diesel Generator as the only source of power.</p> <p><u>Standard:</u></p> <p>Verifies 4-kV Shutdown Board A is being supplied by DG A.</p>	Shutdown Board	A	B	C	D	Norm Feed Bkr	1614	1616	1718	1724	Alt Feed Bkr	1716	1714	1624	1618	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
Shutdown Board	A	B	C	D												
Norm Feed Bkr	1614	1616	1718	1724												
Alt Feed Bkr	1716	1714	1624	1618												
<p><u>Step 2:</u></p> <p>[2] <b>VERIFY</b> the associated 4kV shutdown board auto transfer lockout relay is tripped to MANUAL.</p> <table border="1"><thead><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr></thead><tbody><tr><td>A</td><td>4KV SD BD A AUTO/LOCKOUT RESET</td><td>0-211-3EA</td><td>0-9-23-7</td></tr></tbody></table> <p><u>Standard:</u></p> <p>Verifies 4KV SD BD A AUTO/LOCKOUT RESET, HS-0-211-A, is tripped to manual.</p>	Diesel	Handswitch Name	Handswitch No.	Panel	A	4KV SD BD A AUTO/LOCKOUT RESET	0-211-3EA	0-9-23-7	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>							
Diesel	Handswitch Name	Handswitch No.	Panel													
A	4KV SD BD A AUTO/LOCKOUT RESET	0-211-3EA	0-9-23-7													



## Job Performance Measure (JPM)

STEP / STANDARD				SAT / UNSAT
<u>Step 3:</u>				
[3] <b>PLACE</b> the synchroscope switch for the 4-kV shutdown board feeder breaker that is to be paralleled with the Diesel Generator in ON.				<b>Critical Step</b>
<u>Standard:</u>				___ SAT
Places Synchroscope switch for 4-kV Shutdown Board A normal feeder breaker 1614 to ON.				___ UNSAT
				___ N/A
<u>Step 4:</u>				
[4] <b>VERIFY</b> 4-kV Shutdown Bus 1(2) voltage is between 3950 Volts and 4400 Volts and <b>NOT</b> undergoing abnormal voltage transients.				___ SAT
<u>Standard:</u>				___ UNSAT
Verifies 4-kV Shutdown Bus 1 voltage is between 3950 Volts and 4400 Volts and <b>NOT</b> undergoing abnormal voltage transients.				___ N/A
<u>Step 5:</u>				
[5] <b>VERIFY</b> associated incoming frequency is between 59 Hertz and 61 Hertz and <b>NOT</b> undergoing abnormal frequency transients.				
Shutdown Bd	Instrument Name	Instrument No.	Panel	
A or B	GEN SYNC FREQUENCY	0-SI-82-0AB	0-9-23-7	___ SAT
C or D	GEN SYNC FREQUENCY	0-SI-82-0CD	0-9-23-8	___ UNSAT
				___ N/A
<u>Standard:</u>				
Verifies incoming frequency is between 59 Hertz and 61 Hertz and NOT undergoing abnormal frequency transients using GEN SYNC FREQUENCY, 0-SI-82-AB .				



## Job Performance Measure (JPM)

STEP / STANDARD				SAT / UNSAT								
<p><u>Step 6:</u></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>DO NOT parallel the Diesel Generators with an unstable offsite source or during inclement weather (e.g., lightning, heavy winds).</p> <p>[6] IF 4-kV Shutdown Bus 1 (2) is experiencing abnormal voltage or frequency conditions, <b>THEN PERFORM</b> the following:</p> <p><u>Standard:</u></p> <p style="text-align: center;">N/A</p>				<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>								
<p><u>Step 7:</u></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Only one Unit 1 and 2 Diesel Generator at a time is allowed to be operated in parallel with system.</p> <p>[7] <b>PULL and PLACE</b> the associated Diesel Generator mode selector switch in PARALLELED WITH SYSTEM.</p> <table border="1"><thead><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr></thead><tbody><tr><td>A</td><td>DG A MODE SELECT</td><td>0-HS-82-A/5A</td><td>0-9-23-7</td></tr></tbody></table> <p><u>Standard:</u></p> <p>Pulls DG A MODE SELECT switch 0-HS-82-A/5A and places it in PARALLELED WITH SYSTEM.</p>				Diesel	Handswitch Name	Handswitch No.	Panel	A	DG A MODE SELECT	0-HS-82-A/5A	0-9-23-7	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
Diesel	Handswitch Name	Handswitch No.	Panel									
A	DG A MODE SELECT	0-HS-82-A/5A	0-9-23-7									



## Job Performance Measure (JPM)

STEP / STANDARD				SAT / UNSAT								
<p><u>Step 8:</u></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Failure of the PARALLELED WITH SYSTEM light to illuminate in the following step could indicate that the DG is still in SINGLE UNIT operation and result in overload when the DG output breaker is closed.</p> <p>[8]     <b>RELEASE</b> the Diesel Generator mode selector switch and <b>OBSERVE</b> PARALLELED WITH SYSTEM light illuminated.</p> <p><u>Standard:</u></p> <p>Releases the Diesel Generator A mode selector switch, 0-HS-82-A/5A and observes PARALLELED WITH SYSTEM light is illuminated.</p>				<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>								
<p><u>Step 9:</u></p> <p>[9]     <b>ADJUST</b> Diesel Generator frequency using the associated Diesel Generator governor control switch to obtain a synchroscope needle rotation of one revolution every 15 to 20 seconds in the SLOW direction.</p> <table border="1"><thead><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr></thead><tbody><tr><td>A</td><td>DG A GOVERNOR CONTROL</td><td>0-HS-82-A/3A</td><td>0-9-23-7</td></tr></tbody></table> <p><u>Standard:</u></p> <p>Adjusts Diesel Generator A frequency using Diesel Generator governor control switch, 3-HS-82-A/3A, (in lower direction) to obtain a synchroscope needle rotation of one revolution every 15 to 20 seconds in the SLOW direction.</p>				Diesel	Handswitch Name	Handswitch No.	Panel	A	DG A GOVERNOR CONTROL	0-HS-82-A/3A	0-9-23-7	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
Diesel	Handswitch Name	Handswitch No.	Panel									
A	DG A GOVERNOR CONTROL	0-HS-82-A/3A	0-9-23-7									





## Job Performance Measure (JPM)

STEP / STANDARD				SAT / UNSAT											
<u>Step 10:</u>															
[10]	<b>USE</b> the associated Diesel Generator voltage regulator control switch to match Diesel Generator and System voltages.														
	<table><tr><th>Diesel</th><th>Instrument Name</th><th>Inst No.</th><th>Panel</th></tr><tr><td rowspan="3">A</td><td>DG A VOLT REGULATOR CONT</td><td>0-HS-82-A/2A</td><td rowspan="3">0-9-23-7</td></tr><tr><td>GEN SYNC REF VOLTAGE</td><td>0-EI-82-AB</td></tr><tr><td>SYSTEM SYNC REF VOLTAGE</td><td>0-EI-211-0AB</td></tr></table>	Diesel	Instrument Name	Inst No.	Panel	A	DG A VOLT REGULATOR CONT	0-HS-82-A/2A	0-9-23-7	GEN SYNC REF VOLTAGE	0-EI-82-AB	SYSTEM SYNC REF VOLTAGE	0-EI-211-0AB		<div>___ SAT</div> <div>___ UNSAT</div> <div>___ N/A</div>
Diesel	Instrument Name	Inst No.	Panel												
A	DG A VOLT REGULATOR CONT	0-HS-82-A/2A	0-9-23-7												
	GEN SYNC REF VOLTAGE	0-EI-82-AB													
	SYSTEM SYNC REF VOLTAGE	0-EI-211-0AB													
<u>Standard:</u>															
Matches DG A voltage with system voltage using DG A VOLT REGULATOR CONT switch 0-HS-82-A/2A.															
<u>Step 11:</u>															
[11]	<b>WHEN</b> the synchroscope needle is approximately 2 minutes on the right hand side of the 12 o'clock position, <b>THEN</b> <b>CLOSE</b> the 4-kV shutdown board feeder breaker that is to be paralleled with the Diesel Generator.			<b>Critical Step</b>											
	<u>Standard:</u>			<div>___ SAT</div> <div>___ UNSAT</div> <div>___ N/A</div>											
Closes the 4-kV shutdown board feeder breaker 1614 when the synchroscope needle is approximately 2 minutes on the right hand side of the 12 o'clock position.															
<u>Step 12:</u>															
[12]	<b>PLACE</b> the synchroscope switch for the 4-kV shutdown board feeder breaker that was paralleled with the Diesel Generator in OFF.			<div>___ SAT</div> <div>___ UNSAT</div> <div>___ N/A</div>											
	<u>Standard:</u>														
Places the synchroscope switch for BKR 1614 in OFF.															

STEP / STANDARD	SAT / UNSAT										
<p><u>Step 13:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>If diesel operates greater than 4 hours at less than 50% load, the diesel should be loaded to full load for at least 30 minutes prior to engine shutdown. This will allow the engine to clean out any oil accumulations from the exhaust manifolds.</p> <p>[13] IF DG has been operating at a low-load condition (<math>\leq 50\%</math>) for an extended period of time (<math>\geq 4</math> hours) <b>THEN</b> <b>PERFORM</b> the following (Otherwise N/A):</p> <p><u>Standard:</u></p> <p>N/A, given in initial conditions.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>										
<p><u>Step 14:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>Lagging VARs should be maintained when adjusting kW load (rising or lowering). This may require kW load adjustment to be stopped periodically to allow for adjusting kVAR load. Once desired kW load is achieved, Illustration 1 should be referred to for determination of kVAR loading required to obtain a power factor (pf) of 0.8 lagging. Diesel generator kVAR load should then be adjusted to obtain a 0.8 pf lagging. IF system conditions will <b>NOT</b> permit the kVAR loading required to obtain a 0.8 pf lagging, kVAR load should be adjusted to the maximum kVAR lagging the system will allow.</p> <p>[14] <b>USE</b> the associated Diesel Generator's governor control switch and voltage regulator control switch to obtain desired kW and kVAR load.</p> <table><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr><tr><td rowspan="2">A</td><td>DG A GOVERNOR CONTROL</td><td>0-HS-82-A/3A</td><td rowspan="2">0-9-23-7</td></tr><tr><td>DG A VOLT REGULATOR CONT</td><td>0-HS-82-A/2A</td></tr></table> <p><u>Standard:</u></p> <p>Obtains desired kW and kVAR load using DG A Governor Control switch, 0-HS-82-A/3A and DG Volt Regulator Cont switch, 0-HS-82-A/2A.</p>	Diesel	Handswitch Name	Handswitch No.	Panel	A	DG A GOVERNOR CONTROL	0-HS-82-A/3A	0-9-23-7	DG A VOLT REGULATOR CONT	0-HS-82-A/2A	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
Diesel	Handswitch Name	Handswitch No.	Panel								
A	DG A GOVERNOR CONTROL	0-HS-82-A/3A	0-9-23-7								
	DG A VOLT REGULATOR CONT	0-HS-82-A/2A									



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT														
<p><u>Step 15:</u></p> <p>[15] <b>MONITOR</b> the offsite source that is paralleled with the Diesel Generator.</p> <p>[16] <b>IF</b> abnormal voltage or frequency transients are experienced, <b>THEN</b></p> <p><u>Standard:</u></p> <p>Step is N/A</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>														
<p><u>Step 16:</u></p> <p>[17] <b>WHEN</b> Parallel with System operation is no longer desired, <b>THEN UNLOAD</b> the Diesel Generator as follows:</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>When unloading the Diesel Generator, failure to slowly approach the 300 kW/250 kVAR limit may result in a reverse power trip of the Diesel Generator output breaker.</p> <p>[17.1] <b>USE</b> the associated Diesel Generator's governor control switch and voltage regulator control switch to reduce generator load to approximately 300 kW and 250 kVAR:</p> <table border="1"><thead><tr><th>Diesel</th><th>Instrument Name</th><th>Inst No.</th><th>Panel</th></tr></thead><tbody><tr><td rowspan="4">A</td><td>DG A GOVERNOR CONTROL</td><td>0-HS-82-A/3A</td><td rowspan="4">0-9-23-7</td></tr><tr><td>DG A VOLTAGE REGULATOR CONTROL</td><td>0-HS-82-A/2A</td></tr><tr><td>DG A KILOWATTS</td><td>0-JI-82-A/A</td></tr><tr><td>DG A KILOVARS</td><td>0-VAR-82-A/A</td></tr></tbody></table> <p><u>Standard:</u></p> <p>Unloads the DG to approximately 300 KW and 250 kVAR.</p>	Diesel	Instrument Name	Inst No.	Panel	A	DG A GOVERNOR CONTROL	0-HS-82-A/3A	0-9-23-7	DG A VOLTAGE REGULATOR CONTROL	0-HS-82-A/2A	DG A KILOWATTS	0-JI-82-A/A	DG A KILOVARS	0-VAR-82-A/A	<p><i>AK 2/15/15</i></p> <p><del>Critical Step</del></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
Diesel	Instrument Name	Inst No.	Panel												
A	DG A GOVERNOR CONTROL	0-HS-82-A/3A	0-9-23-7												
	DG A VOLTAGE REGULATOR CONTROL	0-HS-82-A/2A													
	DG A KILOWATTS	0-JI-82-A/A													
	DG A KILOVARS	0-VAR-82-A/A													



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT								
<p><u>Step 17</u></p> <p>[17.2] <b>PLACE</b> the associated Diesel Generator breaker control switch in TRIP</p> <table border="1"><thead><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr></thead><tbody><tr><td>A</td><td>DG A BKR 1818</td><td>0-HS-211-A/22A</td><td>0-9-23-7</td></tr></tbody></table> <p><u>Standard:</u></p> <p>Trips Diesel Generator breaker 1818.</p>	Diesel	Handswitch Name	Handswitch No.	Panel	A	DG A BKR 1818	0-HS-211-A/22A	0-9-23-7	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
Diesel	Handswitch Name	Handswitch No.	Panel						
A	DG A BKR 1818	0-HS-211-A/22A	0-9-23-7						
<p><u>Step 18:</u></p> <p>[17.3] <b>PULL and PLACE</b> the associated Diesel Generator mode selector switch in SINGLE UNIT.</p> <table border="1"><thead><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr></thead><tbody><tr><td>A</td><td>DG A MODE SELECT</td><td>0-HS-211-A/5A</td><td>0-9-23-7</td></tr></tbody></table> <p><u>Standard:</u></p> <p>Pulls and places 0-HS-211-A/5A to Single Unit.</p>	Diesel	Handswitch Name	Handswitch No.	Panel	A	DG A MODE SELECT	0-HS-211-A/5A	0-9-23-7	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
Diesel	Handswitch Name	Handswitch No.	Panel						
A	DG A MODE SELECT	0-HS-211-A/5A	0-9-23-7						
<p><u>Step 20:</u></p> <p>[17.4] <b>RELEASE</b> the Diesel Generator mode selector switch and <b>OBSERVE</b> the SINGLE UNIT light illuminated.</p> <p><u>Standard:</u></p> <p>Verifies Single Unit light illuminated.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>								
<p><b>CUE: ANOTHER OPERATOR WILL CONTINUE FROM HERE</b></p>									

STOP TIME \_\_\_\_\_

END OF TASK



## Job Performance Measure (JPM)

### Provide to Applicant

#### **INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- No Inclement weather currently exists in the area
- One hour ago, 4 KV Shutdown Board A was separated from Offsite Power in accordance with 0-OI-82, Standby Diesel Generator System.

#### **INITIATING CUE:**

The Unit Supervisor has directed you to restore offsite power to 4KV Shutdown Board A using the normal feeder breaker and remove DG A from parallel operation in accordance with 0-OI-82, Section 8.3, Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23.



## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	Restore Fuel Pool Level with RHRSW U-2
JPM NUMBER:	632	REVISION:	0

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-078-AB-01 / Respond to Fuel Pool Cleanup Failure			
K/A RATINGS:	233000 A2.02		K/A RATING: RO 3.1 SRO 3.3	
K/A STATEMENT:	Ability to (a) predict the impacts of the following on the FUEL POOL AND CLEANUP; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low pool level			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	9			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by:

\_\_\_\_\_  
*Developer* *Date*  
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)  
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

\_\_\_\_\_  
*Validator* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Management* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Program Owner* *Date*



## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

JPM Number: 632

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: Restore Fuel Pool Level with RHRSW Pumps D1 and D2 in  
accordance with 2-AOI-78-1

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-AOI-78-1

VALIDATION TIME: 15 minutes

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	
Exam IC	107

Batch File or Pref file	NRC/1404auditg F3
-------------------------------	----------------------

Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s): NRC/1404auditg





## Job Performance Measure (JPM)

\*\*\*\*\*

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

### **INITIAL CONDITIONS:**

You are an Unit Operator. Fuel Pool Level is lowering. The crew has entered 2-AOI-78-1, Fuel Pool Cleanup System Failure. All attempts to restore and maintain Fuel Pool Level have been unsuccessful thus far. RHR Pump 2A and 2C breakers have been racked out. There is an AUO on the Refuel Floor to monitor Fuel Pool Level.

### **INITIATING CUES:**

The US directs you to align RHRSW to the Fuel Pools in accordance with 2-AOI-78-1 subsequent action step 4.2 [2.9.3].



## Job Performance Measure (JPM)

START TIME \_\_\_\_\_

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p>[2.9.3] <b>PLACE</b> RHR SYSTEM I MIN FLOW INHIBIT Switch 2-HS-74-148 in INHIBIT and <b>VERIFY CLOSED</b> SYSTEM I MIN FLOW VALVE 3-FCV-74-7.</p> <p><u>Standard:</u></p> <p>*Operator places 2-HS-74-148 in INHIBIT and Verifies 2-FCV-74-7 closed.</p>	<p><b>*Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>[2.9.4] <b>NOTIFY</b> Chemistry that RHRSW is being placed in service and aligned through Loop I RHR piping for makeup water supply to Fuel Pool.</p> <p><u>Standard:</u></p> <p>Notifies Chemistry.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<b>DRIVER: As Chemistry, acknowledge notification</b>	



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 3:</u></p> <p>[2.9.5] <b>VERIFY CLOSED</b> the following:</p> <ul style="list-style-type: none"><li>• 2-SHV-074-0801, RHR SYS FILL FROM PSC HEAD TANK. (RX Bldg, EL. 621')</li><li>• 2-BYV-074-0704, CNDS FILL TO HEAD SPRAY BYPASS. (RX Bldg, EL. 621')</li><li>• 2-FCV-74-61, RHR SYS I DW SPRAY INBD VLV.</li><li>• 2-FCV-74-60, RHR SYS I DW SPRAY OUTBD VLV.</li><li>• 2-FCV-74-59, RHR SYS I SUPPR POOL CLG/TEST VLV.</li><li>• 2-FCV-74-58, RHR SYS I SUPPR CHBR SPRAY VALVE.</li><li>• 2-FCV-74-57, RHR SYS I SUPPR CHBR/POOL ISOL VLV.</li><li>• 2-FCV-23-52 RHR HEAT EXCHANGER D COOL WATER OUTLET VLV.</li></ul> <p><u>Standard:</u></p> <p>Verifies the above listed valves are closed, and dispatches and operator to verify the first two valves on the list.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<b>DRIVER: When dispatched, inform the operator that 2-SHV-074-0801 and 2-BYV-074-0704 are closed</b>	
<p><u>Step 4:</u></p> <p>[2.9.6] <b>DIRECT</b> Unit 1 Operator to <b>VERIFY CLOSED</b> 1-FCV-23-52 RHR HEAT EXCHANGER D COOL WATER OUTLET VLV.</p> <p>[2.9.7] <b>DIRECT</b> Unit 3 Operator to <b>VERIFY CLOSED</b> 3-FCV-23-52 RHR HEAT EXCHANGER D COOL WATER OUTLET VLV.</p> <p><u>Standard:</u></p> <p>Directs Unit 1 and 3 operators to verify FCV-23-52 closed.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<b>DRIVER: As Unit 1 and 3 operators, report respective FCV-23-52 valves closed</b>	



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 5:</u></p> <p>[2.9.8] <b>CLOSE</b> 2-FCV-74-52 RHR SYS I LPCI OUTBD INJECT VALVE.</p> <p><u>Standard:</u></p> <p>Operator closes 2-FCV-74-52.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 6:</u></p> <p>[2.9.9] <b>OPEN</b> 2-FCV-78-62, POOL MAKEUP FROM RHR OUTBOARD VLV locally.</p> <p><u>Standard:</u></p> <p>Operator dispatches an operator to OPEN 2-FCV-78-62.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>DRIVER: When called, insert preference key F6 to open FCV-78-62 (mrf sw17 manual), then call operator and report 2-FCV-78-62 open.</b></p>	
<p><u>Step 7:</u></p> <p>[2.9.10] At 480V RMOV BD 1B, Compartment 19A, <b>PLACE</b> 2-BKR-074-0100, RHR HEAT EXCHANGER DISCHARGE CROSSTIE VALVE XTIE FCV-74-100 in ON.</p> <p><u>Standard:</u></p> <p>Operator dispatches an operator to energize breaker for FCV-74-100.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><b>DRIVER: When called, insert preference key F7 to energize FCV-74-100, then call operator and report breaker for 74-100 is ON.</b></p>	



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 8:</u></p> <p style="text-align: center;"><b>NOTE</b></p> <p>To satisfy Appendix R requirements, Breaker for 2-FCV-074-0100 shall remain OFF, except for testing or until compensatory measures are in place.</p> <p style="text-align: center;">[2.9.11] OPEN 2-FCV-74-100, RHR SYS I U-1 DISCH XTIE</p> <p><u>Standard:</u></p> <p>Operator opens 2-FCV-74-100.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 9:</u></p> <p style="text-align: center;">[2.9.12] <b>START</b> RHR SW Pumps D1 and/or D2.</p> <p><u>Standard:</u></p> <p>Operator starts RHR SW Pumps D1 and/or D2.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<b>NOTE: The following step is optional whether it is performed at this time</b>	
<p><u>Step 10:</u></p> <p style="text-align: center;">[2.9.13] <b>WHEN</b> time permits after RHR SW Pump is started, <b>THEN</b> <b>VERIFY</b> RHR SW Pump Breaker charging spring recharged by <b>OBSERVING</b> amber breaker spring charged light is ILLUMINATED and closing spring target indicates CHARGED.</p> <p><u>Standard:</u></p> <p>When time permits dispatches operator to verify charging springs recharged.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<b>DRIVER: When dispatched, inform the operator that charging springs are charged.</b>	
<p><u>Step 11:</u></p> <p style="text-align: center;">[2.9.14] OPEN 1-FCV-23-57, STANDBY COOLANT VALVE FROM RHR SW.</p> <p><u>Standard:</u></p> <p>Operator directs Unit 1 to open 1-FCV-23-57.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<b>DRIVER: When called, insert preference key F8 to open FCV-23-57 (mrf sw09 open) and report 1-FCV-23-57 is open</b>	
<b>NOTE: In the following step, flow will be indicated on Supplemental Fuel Pool Cooling Flow, 2-FI-74-76</b>	
<u>Step 12:</u>  [2.9.15] <b>THROTTLE</b> 2-FCV-78-61, POOL MAKEUP FROM RHR INBOARD VLV, as required to restore and maintain Fuel Pool level.  <u>Standard:</u>  Operator OPENS 2-FCV-78-61 to restore and maintain Fuel Pool Level. Flow is indicated on Supplemental Fuel Pool Cooling Flow, 2-FI-74-76.	<b>Critical Step</b>  __ SAT  __ UNSAT  __ N/A
<b>CUE: As AUO monitoring Fuel Pool level, report Fuel Pool level is rising</b>	

**END OF TASK**

**STOP TIME: \_\_\_\_\_**



## Job Performance Measure (JPM)

### Provide to Applicant

#### **INITIAL CONDITIONS:**

You are an Unit Operator. Fuel Pool Level is lowering. The crew has entered 2-AOI-78-1, Fuel Pool Cleanup System Failure. All attempts to restore and maintain Fuel Pool Level have been unsuccessful thus far. RHR Pump 2A and 2C breakers have been racked out. There is an AUO on the Refuel Floor to monitor Fuel Pool Level.

#### **INITIATING CUES:**

The US directs you to align RHRSW to the Fuel Pools in accordance with 2-AOI-78-1 subsequent action step 4.2 [2.9.3].



## Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	2-EOI Appendix-5C, Injection System Lineup - RCIC U-2	
JPM NUMBER:	18 A	REVISION:	0	

TASK APPLICABILITY:	<input checked="" type="checkbox"/> SRO	<input type="checkbox"/> STA	<input checked="" type="checkbox"/> UO	<input type="checkbox"/> NAUO
TASK NUMBER / TASK TITLE(S):	U-000-EM-31 - Lineup Injection Systems – RCIC In Accordance with EOI Appendix 5C			
K/A RATINGS:	RO 3.6 SRO 3.6			
K/A STATEMENT:	217000 A4.04			
RELATED PRA INFORMATION:	N/A			
SAFETY FUNCTION:	2			

EVALUATION LOCATION:	<input type="checkbox"/> In-Plant	<input checked="" type="checkbox"/> Simulator	<input type="checkbox"/> Control Room	<input type="checkbox"/> Lab
	<input type="checkbox"/> Other - List			

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by:

\_\_\_\_\_  
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)

(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by:

\_\_\_\_\_  
*Validator* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Management* *Date*

Approved by:

\_\_\_\_\_  
*Site Training Program Owner* *Date*

Rec'd  
1/7/15





## Job Performance Measure (JPM)

OPERATOR: \_\_\_\_\_

JPM Number: 18 A

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

TASK STANDARD: Manipulate controls required to inject water to the RPV using the  
Reactor Core Isolation Cooling (RCIC) System and maintain level as  
required

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-5C

VALIDATION TIME: 5 Minutes

PERFORMANCE TIME: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_ (Retain entire JPM  
for records)

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER



## Job Performance Measure (JPM)

### SIMULATOR SETUP

IC	
Exam IC	110

Batch File or Pref file	
-------------------------------	--

Malfunctions	Description	Event	Severity	Delay	Initial set
rc04	Flow controller failure	1	0		

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s):

\*\*\*\*\*  
**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.  
\*\*\*\*\*

**INITIAL CONDITIONS:**

You are the Unit 2 Operator. A reactor scram was initiated due to a loss of feedwater. HPCI is currently inoperable.

**INITIATING CUE:**

The US is operating in EOI-1 and has directed you to restore RPV water level +2 to +51 inches using the Reactor Core Isolation Cooling (RCIC) System as directed by 2-EOI Appendix 5C, INJECTION SYSTEM LINEUP - RCIC.



## Job Performance Measure (JPM)

START TIME \_\_\_\_\_

STEP / STANDARD	SAT / UNSAT
<p><u>Step 1:</u></p> <p><b>2-EOI Appendix-5C</b></p> <p>1. IF ..... BOTH of the following exist:</p> <ul style="list-style-type: none"><li>• RPV Pressure is at or below 50 psig,</li></ul> <p style="text-align: center;"><b>AND</b></p> <ul style="list-style-type: none"><li>• Bypass of RCIC low RPV pressure isolation interlocks is necessary,</li></ul> <p>THEN ..... <b>EXECUTE</b> EOI Appendix 16A concurrently with this procedure.</p> <p><u>Standard:</u></p> <p>Determines RPV Pressure &gt;50 psig</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 2:</u></p> <p>2. IF ..... BOTH of the following exist:</p> <ul style="list-style-type: none"><li>• High temperature exists in the RCIC area,</li></ul> <p style="text-align: center;"><b>AND</b></p> <ul style="list-style-type: none"><li>• SRO directs bypass of RCIC High Temperature Isolation interlocks,</li></ul> <p>THEN ..... <b>PERFORM</b> the following:</p> <ol style="list-style-type: none"><li>a. <b>EXECUTE</b> EOI Appendix 16K concurrently with this procedure.</li><li>b. <b>RESET</b> auto isolation logic using 2-XS-71-51A(B), RCIC AUTO-ISOL LOGIC A(B) RESET pushbuttons.</li></ol> <p><u>Standard:</u></p> <p>Determines that high temperature condition does not exist in the RCIC area.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 3:</u></p> <p style="text-align: center;"><b>CAUTION</b></p> <ul style="list-style-type: none"><li>• Operating RCIC turbine below 2100 rpm may result in unstable system operation and equipment damage.</li><li>• High Suppression Chamber pressure may trip RCIC.</li><li>• Operating RCIC Turbine with suction temperatures above 140°F may result in equipment damage.</li></ul> <p>3. <b>VERIFY RESET</b> and <b>OPEN</b> 2-FCV-71-9, RCIC TURB TRIP/THROT VLV.</p> <p><u>Standard:</u></p> <p>Operator takes handswitch for FCV-71-9 to CLOSE to relatch the valve disc then reopens the valve.</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 4:</u></p> <p>4. <b>VERIFY</b> 2-FIC-71-36A, RCIC SYSTEM FLOW/CONTROL, controller in AUTO with setpoint at 620 gpm.</p> <p><u>Standard:</u></p> <p>Verifies 2-FIC-71-36A, RCIC system flow controller is in AUTO with the setpoint set at 620 gpm.</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
<p><u>Step 5:</u></p> <p>5. <b>OPEN the following valves:</b></p> <ul style="list-style-type: none"><li>• 2-FCV-71-39, RCIC PUMP INJECTION VALVE</li><li>• 2-FCV-71-34, RCIC PUMP MIN FLOW VALVE</li><li>• 2-FCV-71-25, RCIC LUBE OIL COOLING WTR VL</li></ul> <p><u>Standard:</u></p> <p>Opens 2-FCV-71-39, 2-FCV-71-34, and 2-FCV-71-25</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<u>Step 6:</u>  6. <b>PLACE</b> 2-HS-71-31A, RCIC VACUUM PUMP, handswitch in START.  <u>Standard:</u>  Places 2-HS-71-31A, RCIC Vacuum Pump, handswitch in start.	___ SAT  ___ UNSAT  ___ N/A
<b>NRC:</b> After the 71-8 is opened, in the following step, the flow controller will fail to control in automatic on examiner cue.	
<b>DRIVER:</b> Insert imf rc04 0, to failure RCIC flow controller to zero, on examiner cue	
<u>Step 7:</u>  7. <b>OPEN</b> 2-FCV-71-8, RCIC TURBINE STEAM SUPPLY VLV, to start RCIC Turbine.  <u>Standard:</u>  Opens 2-FCV-71-8	<b>Critical Step</b>  ___ SAT  ___ UNSAT  ___ N/A
<u>Step 8:</u>  8. <b>CHECK</b> proper RCIC operation by observing the following: a. RCIC Turbine speed accelerates above 2100 rpm. b. RCIC flow to RPV stabilizes and is controlled automatically at 620 gpm. c. 2-FCV-71-40, RCIC TESTABLE CHECK VLV, opens by observing 2-ZI-71-40A, DISC POSITION, red light illuminated. d. 2-FCV-71-34, RCIC PUMP MIN FLOW VALVE, closes as flow rises above 120 gpm.  <u>Standard:</u>  Verifies proper RCIC operation by observing speed > 2100 rpm, flow controlling automatically at 620 gpm, testable check valve open, and minimum flow valve closed.	___ SAT  ___ UNSAT  ___ N/A



## Job Performance Measure (JPM)

STEP / STANDARD	SAT / UNSAT
<p><u>Step 9:</u></p> <p>9. IF ..... BOTH of the following exist:</p> <ul style="list-style-type: none"><li>• RCIC Initiation signal is NOT present,</li></ul> <p style="text-align: center;"><b>AND</b></p> <ul style="list-style-type: none"><li>• RCIC flow is below 60 gpm,</li></ul> <p>THEN ..... <b>VERIFY OPEN</b> 2-FCV-71-34, RCIC PUMP MIN FLOW VALVE.</p> <p><u>Standard:</u></p> <p>Verifies RCIC initiation signal is NOT present and RCIC flow is greater than 60 gpm. Verifies 2-FCV-71-34 is closed</p>	<p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
If RCIC flow controller has already failed, RCIC flow would be less than 60 gpm and the minimum flow valve would be open as indicated by a red light.	
<p><u>Step 10:</u></p> <p>10. <b>ADJUST</b> 2-FIC-71-36A, RCIC SYSTEM FLOW/CONTROL, controller as necessary to control injection.</p> <p><u>Standard:</u></p> <p>Determines that the automatic flow controller has failed and takes manual control of RCIC. Adjust 2-FIC-71-36A as necessary to obtain approximately 600 gpm flow</p>	<p><b>Critical Step</b></p> <p>___ SAT</p> <p>___ UNSAT</p> <p>___ N/A</p>
It will not be necessary for the operator to obtain RPV water level greater than +2 inches. A rising RPV water level is satisfactory.	

STOP TIME \_\_\_\_\_

END OF TASK



## Job Performance Measure (JPM)

### Provide to Applicant

#### **INITIAL CONDITIONS:**

You are the Unit 2 Operator. A reactor scram was initiated due to a loss of feedwater. HPCI is currently inoperable.

#### **INITIATING CUE:**

The US is operating in EOI-1 and has directed you to restore RPV water level +2 to +51 inches using the Reactor Core Isolation Cooling (RCIC) System as directed by 2-EOI Appendix 5C, INJECTION SYSTEM LINEUP - RCIC.



OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: i

TASK NUMBER: U-000-EM-20

TASK TITLE: 2-EOI Appendix-1B Vent and Repressurize the SCRAM Pilot Air Header

K/A NUMBER: 295015 AA1.01 K/A RATING: RO 3.8 SRO 3.9

TASK STANDARD: Simulate component manipulations required to vent and subsequently repressurize the scram pilot air header as directed by 2-EOI Appendix 1B

LOCATION OF PERFORMANCE: Plant

PRA:

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-1B

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
1/7/15

**INITIAL CONDITIONS:**

You are an Operator. The Unit 2 reactor has scrammed and all control rods failed to insert. EOI-1 has been entered and followed to RC/Q-20.

**INITIATING CUE:**

The Unit Supervisor has directed you to perform 2-EOI Appendix 1B, Venting and Repressurizing the SCRAM Pilot Air Header.

**CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!**

\*\*\*\*\*

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or "That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

### **INITIAL CONDITIONS:**

You are an Operator. The Unit 2 reactor has scrammed and all control rods failed to insert. EOI-1 has been entered and followed to RC/Q-20.

### **INITIATING CUE:**

The Unit Supervisor has directed you to perform 2-EOI Appendix 1B, Venting and Repressurizing the SCRAM Pilot Air Header.

**CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!**

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:Critical Not Critical X[1] **NOTIFY** Unit Operator and **CONTINUE** in this procedure.**NOTE**

A ladder may be required to perform the following step. **REFER** to Tools and Equipment, Attachment 1.

Standard:

Simulates notifying Unit 2 Operator by phone or radio that procedure is being performed.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 2:Critical X Not Critical

[2] **CLOSE** 2-SHV-085-0331, CONT AIR SPLY HDR SOV (RB North wall, near Scram Air Header Pressure Regulators).

Standard:

Locates and simulates closing 2-SHV-085-0331.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:**

Handwheel is turning, the stem is moving inward.

*Pause*

Handwheel is Snug, Stem has stopped moving

\*\*\*\*\*

Performance Step 3:Critical X Not Critical[3] **OPEN** the following instrument drain valves (located on Panel 2-25-18, east end):

- 2-DRIV-085-0038A (2-PS-085-0038, CRD SCRAM VALVE PILOT AIR HEADER PRESS)
- 2-DRIV-085-0038B (2-PI-085-0038, CRD SCRAM VALVE PILOT AIR HEADER PRESS)

Standard:

Locates and simulates opening 2-DRIV-085-0038A and 2-DRIV-085-0038B.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:** Handwheel is turning, the stem is moving outward.*Pause*

Handwheel is Snug, Stem has stopped moving

\*\*\*\*\*

Performance Step 4:Critical Not Critical X[4] **WHEN** 2-PI-085-0038, CRD SCRAM VALVE PILOT AIR HEADER PRESS, indicates 0 psig, **THEN NOTIFY** Unit 2 Operator.Standard:

Simulate notifying the Unit 2 Operator by phone or radio that 2-PI-085-0038 indicates 0 psig.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** 2-PI-085-0038 pressure is lowering, 2-PI-085-0038 indicates 0 psig**Cue:** The Unit Supervisor directs you to re-pressurize the SCRAM pilot air header

\*\*\*\*\*

Performance Step 5:Critical X Not Critical

[5] **WHEN** Unit Supervisor directs re-pressurizing Scram Pilot Air Header, **THEN** **REPRESSURIZE** the Scram Pilot Air Header as follows:

[5.1] **CLOSE** the following instrument drain valves:

- 2-DRIV-085-0038A, (2-PS-085-0038, CRD SCRAM VALVE PILOT AIR HEADER PRESS)
- 2-DRIV-085-0038B, (2-PI-085-0038, CRD SCRAM VALVE PILOT AIR HEADER PRESS)

Standard:

Simulates closing 2-DRIV-085-0038A and 2-DRIV-085-0038B.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:** Handwheel is turning, the stem is moving inward.  
*Pause*  
 Handwheel is Snug, Stem has stopped moving

\*\*\*\*\*

Performance Step 6:Critical X Not Critical

[5.2] **SLOWLY OPEN** 2-SHV-085-0331, CONT AIR SPLY HDR SOV.

Standard:

Simulates opening 2-SHV-085-0031.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:** **Cue:** Handwheel is turning, the stem is moving outward.  
*Pause*  
 Handwheel is Snug, Stem has stopped moving  
 2-PI-085-0038 is reading as indicated or 73 psig

\*\*\*\*\*

Performance Step 7:Critical Not Critical X[6] **WHEN** Scram Pilot Air Header is re-pressurized, **THEN NOTIFY** Unit 2 Operator.Standard:

Simulate notifying the Unit 2 Operator by phone or radio that the SCRAM pilot air header is repressurized.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

<b>CUE:</b>	Acknowledge notification
-------------	--------------------------

END OF TASK

STOP TIME \_\_\_\_\_

JPM j

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: j

TASK NUMBER: U-001-AL-06

TASK TITLE: Field actions for stuck open SRV

K/A NUMBER: 239002 A2.03 K/A RATING: RO 4.1 SRO 4.2

TASK STANDARD: Stuck Open SRV is closed when power is removed from the SRV by opening the breakers

LOCATION OF PERFORMANCE: Plant

REFERENCES/PROCEDURES NEEDED: 3-AOI-1-1

VALIDATION TIME: 25 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
1/7/15



**INITIAL CONDITIONS:**

You are an Operator, the Unit Supervisor has entered 3-AOI-1-1 Relief Valve Stuck Open. Control Room actions to close SRV 3-PCV-1-22 have been unsuccessful. Reactor Power is 85%.

**INITIATING CUE:**

The Unit Supervisor directs you to attempt to close SRV 3-PCV-1-22 from outside the Control Room in accordance with 3-AOI-1-1 step 4.2.3[2].

**CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!**

\*\*\*\*\*

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or "That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

#### **INITIAL CONDITIONS:**

You are an Operator, the Unit Supervisor has entered 3-AOI-1-1 Relief Valve Stuck Open. Control Room actions to close SRV 3-PCV-1-22 have been unsuccessful. Reactor Power is 85%.

#### **INITIATING CUE:**

The Unit Supervisor directs you to attempt to close SRV 3-PCV-1-22 from outside the Control Room in accordance with 3-AOI-1-1 step 4.2.3[2].

**CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!**

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:Critical X Not Critical**NOTES**

- 1) 3-PCV-1-22 is an ADS Valve
- 2) 3-PCV-1-22 has two power supplies, it will auto transfer on loss of power and is Normal Seeking.
- 3) Attachment 1 may be addressed for fuse and breaker information.

[2] **IF** 3-PCV-1-22 is NOT closed, **THEN PERFORM** the following:

[2.1] On Panel 3-25-32 **PLACE** the associated transfer switch MAIN STM LINE B RELIEF VALVE XFR, 3-XS-1-22 in EMERG position.

Standard:

Simulates placing 3-XS-1-22 in emergency.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUES:**

**When 3-XS-1-22 is simulated in EMERG,  
3-XS-1-22 IS IN EMERG**

**When Control Room is called to check on SRV status,  
SRV 1-22 STILL INDICATES OPEN**

**When Reactor Pressure is checked on 25-32, indicate that reactor pressure is STABLE  
OR if Control Room is asked:  
REACTOR PRESSURE IS STABLE**

\*\*\*\*\*

Performance Step 2:Critical Not Critical X

[2.2] **IF** the SRV does **NOT** close, **THEN PERFORM** the following while **OBSERVING** the indications for the 3-PCV-1-22 on the Acoustic Monitor:

- **CYCLE** the MAIN STM LINE B RELIEF VALVE, 3-HS-1-22C to the following positions several times.

CLOSE/AUTO to OPEN to CLOSE/AUTO

Standard:

Simulates cycling 3-HS-1-22C from CLOSE/AUTO to OPEN to CLOSE/AUTO.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**NOTE: OPERATOR MAY STAY IN CONTACT WITH THE CONTROL ROOM DURING SRV HANDSWITCH CYCLING.**

**CUES:**

**When 3-HS-1-22 is cycled CLOSE/AUTO to OPEN  
3-HS-1-22C IS IN OPEN, IN CLOSE/AUTO**

**Repeat as necessary.**

**When Control Room is called to check on SRV status,  
SRV 1-22 STILL INDICATES OPEN**

**When Reactor Pressure is checked on 25-32, indicate that reactor pressure is STABLE  
OR if Control Room is asked:  
REACTOR PRESSURE IS STABLE**

\*\*\*\*\*

Performance Step 3:\*Critical X Not Critical[2.3] IF the SRV does **NOT** close, **THEN PERFORM** the following:

- A. **VERIFY** the MAIN STM LINE B RELIEF VALVE, 3-HS-1-22C, in the CLOSE/AUTO position.
- \*B. **PLACE** the associated transfer switch MAIN STM LINE B RELIEF VALVE XFR, 3-XS-1-22 in NORM position.

Standard:

Simulates verifying 3-HS-1-22C is in Close/Auto and simulates placing 3-XS-1-22 in Norm.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUES:**

When 3-HS-1-22C is simulated in CLOSE/AUTO

**3-HS-1-22C IS IN CLOSE/AUTO**

When 3-XS-1-22 is simulated NORM.

**3-XS-1-22 IS IN NORM**

When control room is called

**USE THE PREFERRED METHOD TO REMOVE POWER FROM SRV 3-PCV-1-22.**

\*\*\*\*\*

Performance Step 4:Critical X Not Critical

[2.4] **IF** the SRV does **NOT** close, **THEN REMOVE** the power from 3-PCV-1-22 by performing one of the following: (Opening breakers are the preferred method)

A. **OPEN** the following breakers: (Preferred method)

- 3A 250V RMOV, Compartment 11C2
- 3B 250V RMOV, Compartment 1C1

OR

B. In Panel 3-25-32 (Bay 3)

**PULL** the following fuses as necessary:

- Fuse 3-FU1-001-0022A (Block EE, F2)
- Fuse 3-FU1-001-0022B (Block EE, F7)
- Fuse 3-FU1-001-0022C (Block EE, F12)
- Fuse 3-FU1-001-0022D (Block EE, F15)

Standard:

Simulates opening breaker at 3A 250V RMOV Bd., compartment 11C2 AND simulates opening breaker at 3B 250V RMOV Bd., compartment 1C1. OR simulates opening Bay 3 door on the rear of 3-25-32 and simulates pulling fuses 22A-D in Block EE.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUES:**

**When 11C2 at 3A 250V RMOV is simulated open**  
**BREAKER IS OPEN**

**When 1C1 at 3B 250V RMOV is simulated open**  
**BREAKER IS OPEN**

**When Bay 3 door on 25-32 is simulated open**  
**THE DOOR IS OPEN**

**Give picture to operator and have them indicate where fuses are located**

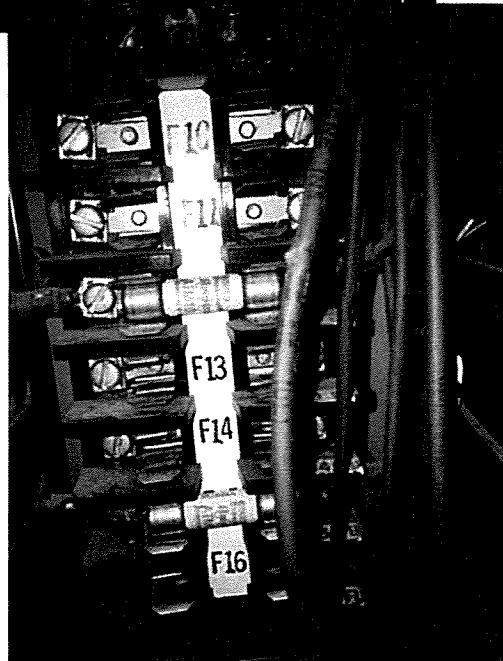
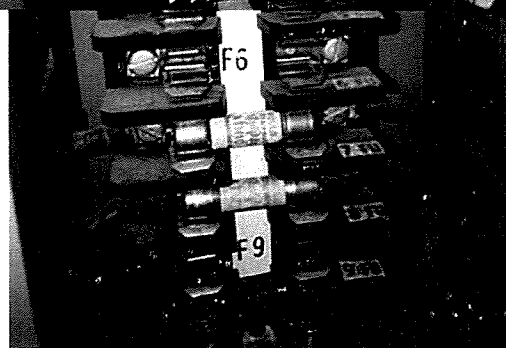
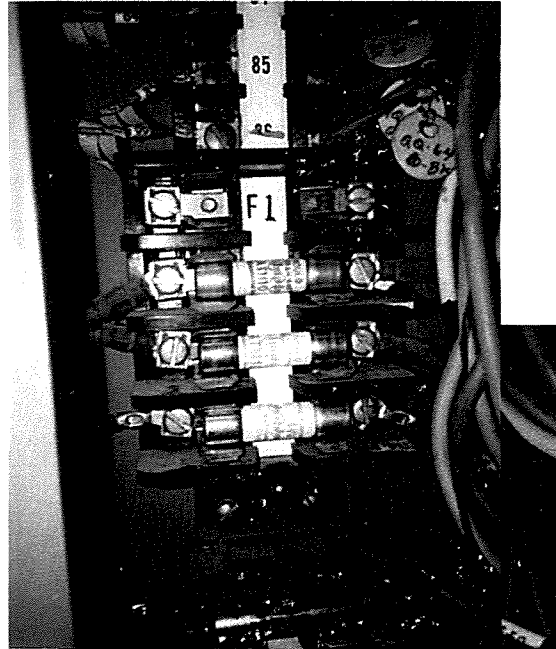
**When Control Room called**  
**SRV 1-22 IS CLOSED**

**If breakers are reclosed or fuses reinstalled**  
**SRV 1-22 IS OPEN (This constitutes a jpm failure)**

END OF TASK

STOP TIME: \_\_\_\_\_

3-LPNL-925-0032  
EE BLOCK



JPM k

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: k

TASK NUMBER: U-032-AL-03

TASK TITLE: Reset Excess Flow Check Valve on Unit 1 Dryer

K/A NUMBER: 295019 AA1.02 K/A RATING: RO 3.3 SRO 3.1

TASK STANDARD: Simulate component manipulations required to Reset Excess Flow Check Valve on Unit 1 Dryer in accordance with 0-OI-32

LOCATION OF PERFORMANCE: Plant

PRA:

REFERENCES/PROCEDURES NEEDED: 0-OI-32

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
1/7/15



**INITIAL CONDITIONS:**

You are an Operator. A large air leak occurred on Unit 2. The Unit 1 Excess Flow Check Valve is currently closed and needs to be reset.

**INITIATING CUE:**

The Unit Supervisor has directed you to reset the UNIT ONE EXCESS FLOW CK VLV, 1-ECKV-032-3745 in accordance with 0-OI-32 section 8.12, Resetting an Excess Flow Check Valve.

**CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!**

\*\*\*\*\*

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or "That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

\*\*\*\*\*

#### **INITIAL CONDITIONS:**

You are an Operator. A large air leak occurred on Unit 2. The Unit 1 Excess Flow Check Valve is currently closed and needs to be reset.

#### **INITIATING CUE:**

The Unit Supervisor has directed you to reset the UNIT ONE EXCESS FLOW CK VLV, 1-ECKV-032-3745 in accordance with 0-OI-32 section 8.12, Resetting an Excess Flow Check Valve.

**CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!**

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:Critical ☒ Not Critical**0-OI-32      Control Air System****8.12    Resetting an Excess Flow Check Valve****NOTE**

Excess Flow Check Valves have a valve position indicator located under the bottom of the valve body in the center of the valve body. When the check valve is open the position indicator will be flush or slightly recessed into the valve body. When the check valve is closed the position indicator will extend approximately 1/8 inch from the valve body.

[2]    **RESET UNIT ONE EXCESS FLOW CK VLV, 1-ECKV-032-3745 as follows:**

[2.1]    **CLOSE U-1 DRYER SOV, 1-SHV-032-2373.**

Standard:

Simulates closing 1-SHV-032-2373.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUES:**

**When located and IF the position indicator on 1-ECKV-032-3745 is checked**

**THE POSITION INDICATOR IS EXTENDED BELOW THE VALVE BODY 1/8 OF AN INCH.**

**If the operator goes to the wrong dryer**

**THE POSITION INDICATOR IS FLUSH WITH THE VALVE BODY**

**When 1-SHV-032-2373 is simulated closed.**

**1-SHV-032-2373 IS CLOSED**

\*\*\*\*\*

Performance Step 2:Critical X Not Critical

- [2.2] **OPEN** CONTROL AIR BLEED OFF VALVE FOR 1-ECKV-032-3745,  
1-BOV-032-3745.

Standard:

Simulates opening 1-BOV-032-3745.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUES:**

**When 1-BOV-032-3745 is simulated open.**

**1-BOV-032-3745 IS OPEN. THE SOUND OF AIR IS HEARD**

\*\*\*\*\*

Performance Step 3:Critical X Not Critical

- [2.3] **WHEN** UNIT ONE EXCESS FLOW CK VLV, 1-ECKV-032-3745 opens,  
  
**THEN CLOSE** CONTROL AIR BLEED OFF VALVE FOR 1-ECKV-032-3745,  
1-BOV-032-3745.

Standard:

Operator checks Unit 1 Excess Flow Check Valve and when it is confirmed to be open, the operator simulates closing 1-BOV-032-3745.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUES:**

**YOU HEAR A CLICK**

**If operator checks valve position indicator**

**THE POSITION INDICATOR IS FLUSH WITH THE VALVE BODY**

**When 1-BOV-032-3745 is simulated closed**

**1-BOV-032-3745 IS CLOSED**

\*\*\*\*\*

Performance Step 4:

Critical X Not Critical

[2.4] **SLOWLY OPEN** U-1 DRYER SOV, 1-SHV-032-2373.

Standard:

Simulates opening 1-SHV-032-2373.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

END OF TASK

**STOP TIME** \_\_\_\_