



# JOB PERFORMANCE MEASURE

**JPM TITLE:** Respond to Quadrant Power Tilt in Excess of Technical Specifications

**JPM NUMBER:** PBN JPM P015.008.COT **REV. 4**

**TASK NUMBER(S) / TASK TITLE(S):** P015.008.COT / Respond to Quadrant Power Tilt in Excess of Technical Specifications

**K/A NUMBERS:** 015 K5.12 **K/A VALUE:** 3.2 / 3.6  
2.1.7 4.4 / 4.7

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:

Simulator:  Other:

Lab:

Time for Completion: 20 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

<b>Developed by:</b> <u>Andrew Zommers</u>	_____	_____
	Instructor/Developer	Date
<b>Reviewed by:</b> _____	_____	_____
	Instructor (Instructional Review)	Date
<b>Validated by:</b> _____	_____	_____
	SME (Technical Review)	Date
<b>Approved by:</b> _____	_____	_____
	Training Supervision	Date
<b>Approved by:</b> _____	_____	_____
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

<b>REVIEW STATEMENTS</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



## **SIMULATOR SET-UP:**

### **SIMULATOR SETUP INSTRUCTIONS:**

- Load IC-2 or any IC where conditions support 100%.
- Insert malfunction.
- Let PPCS Stabilize.
- Update ROD 14 channel calibration currents.
- Drop control rod D-10 and stabilize Tave using turbine manual. (MAL1CRF002-D10)
- Ensure annunciator POWER RANGE CHANNEL DEVIATION (1C04 1A 3-3) is lit.
- Freeze Simulator.
- Walk down the control boards to ensure plant conditions accurately reflect the JPM's initial conditions.
- Save to an IC for multiple uses.

### **SIMULATOR MALFUNCTIONS:**

Insert **MAL1CRF002-D-10**

### **SIMULATOR OVERRIDES:**

N/A

### **SIMULATOR REMOTE FUNCTIONS:**

N/A

**Required Materials:** AOP-6H, Quadrant Power Tilt marked up thru Step 4  
PBF 2512, Quadrant Power Tilt Manual Calculation  
PBF 2512, Quadrant Power Tilt Manual Calculation with Column 1 pre-filled  
in for calculations  
Reactor Operating Data (ROD) Book, ROD 14, Power Range Detector  
Calibration Currents at 100% Power (attached)  
Calculator

**General References:** AOP-6H, Quadrant Power Tilt  
CP 312, PPCS Operability Determination  
PBF 2512, Quadrant Power Tilt Manual Calculation  
Reactor Operating Data (ROD) Book, ROD 14, Power Range Detector  
Calibration Currents at 100% Power

**Task Standards:** The Examinee determines a Quadrant Power Tilt Ratio in accordance with  
PBF-2512, Quadrant Power Tilt Manual Calculation

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- Unit 1 is operating at 91% and stable following a dropped rod.
- The PPCS Excore Tilt calculations were declared inoperable in accordance with CP 312, PPCS Operability Determination, due to PPCS being out of service.
- Annunciator POWER RANGE CHANNEL DEVIATION (1C04 1A 3-3) is LIT.
- The crew has completed the first four steps of AOP 6H, Quadrant Power Tilt.

**INITIATING CUES:**

- The SRO directs you to perform PBF-2512, Quadrant Power Tilt Manual Calculation, in accordance with AOP-6H, Quadrant Power Tilt, Step 5.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



**JPM PERFORMANCE INFORMATION**

Start Time: \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**NOTE:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<b>Performance Step: 1 Critical Y</b>	Column 1 Record Power Range meter readings from the 0-500 microamp scale. (Check range set at 0.5 milliamps)
<b>Standard:</b>	Examinee records the power range meter readings from the 0-500 microamp scale (Channels 41A, 42A, 43A, 41B, 42B, 43B, and 44B) into the DATA blocks for Column 1.
<b>Evaluator Note:</b>	<b>Tolerance <math>\pm</math> 2.5 milli-amps of actual readings on NI drawers.</b>
<b>Evaluator Cue:</b>	<p><b>When examinee has completed obtaining NI drawer readings, obtain their PBF-2512 and hand them the PBF-2512 with column 1 pre-filled out with NI drawer readings.</b></p> <p><b>This still tests the examinees ability to read the NI drawers and complete the manual calculations removing meter uncertainties.</b></p>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



<b>Performance Step: 2 Critical Y</b>	Column 2 Transfer channel calibration current from ROD 14.
<b>Standard:</b>	The Examinee transfers the channel calibration current from ROD 14 (Channels 41A, 42A, 43A, 41B, 42B, 43B, and 44B) into the DATA blocks for Column 2.
<b>Evaluator Note:</b>	<b>The Evaluator ensures ROD 14 data is entered and available for use.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 3 Critical Y</b>	Column 3 Calculate power for each channel (Column 1 ÷ Column 2).
<b>Standard:</b>	<ul style="list-style-type: none"> <li>The Examinee calculates power for each channel (Channels 41A, 42A, 43A, 41B, 42B, 43B, and 44B) by dividing the Power Range meter reading values recorded in Column 1 by the channel calibration currents from ROD 14 recorded in Column 2 and</li> <li>Enters the calculated power for each channel into the DATA blocks for Column 3. <b>Tolerance noted on attached KEY.</b></li> </ul>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



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<b>Performance Step: 4 Critical Y</b>	Column 4 Calculate average power [(sum of Column 3) ÷ 4]
<b>Standard:</b>	<ul style="list-style-type: none"> <li>The Examinee calculates average power (Upper and Lower) by totaling the values recorded in Column 3 and then dividing by the number 4 and</li> <li>Enters the calculated average power values into the DATA blocks for Column 4. <b>Tolerance noted on attached KEY.</b></li> </ul>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 5 Critical Y</b>	QPTR Calculate upper and lower tilt ratio (Column 3 ÷ Column 4)
<b>Standard:</b>	<ul style="list-style-type: none"> <li>The Examinee calculates upper and lower tilt ratio by dividing the calculated power for each channel value recorded in Column 3 by the calculated average power recorded in Column 4 and</li> <li>Enters the calculated upper and lower tilt ratio values into the DATA blocks for QPTR. <b>Tolerance noted on attached KEY.</b></li> </ul>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	





<b>Performance Step: 6 Critical N</b>	PPCS NTILT <sub>x</sub> U for N41A through N44A, NTILT <sub>x</sub> L for N41B through N44B.
<b>Standard:</b>	The Examinee may: <ul style="list-style-type: none"> <li>• Leave the PPCS Column blank, or</li> <li>• N/A the PPCS Column and add remarks annotating that PPCS excore tilt calculations were declared inoperable.</li> </ul>
<b>Evaluator Note:</b>	<b>PPCS Excore Tilt calculations were declared inoperable in accordance with CP 312, PPCS Operability Determination, is one of the initial conditions.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 7 Critical N</b>	Complete the Date/Time and Performed By
<b>Standard:</b>	The Examinee signifies completion of the Quadrant Power Tilt Manual Calculation By: <ul style="list-style-type: none"> <li>• Ensuring the Unit designator is filled in,</li> <li>• Completes the Date/Time and Performed By blocks and</li> <li>• Returns the completed form to the Evaluator</li> </ul>
<b>Evaluator Cue:</b>	<b>Upon completion of PBF-2512 provide the following cue:  The OS directs you to continue with AOP 6H, Quadrant Power Tilt, Step 5.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



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<b>Performance Step: 8 Critical Y</b>	Check Quadrant Power Tilt – Greater than 1.02
<b>Standard:</b>	The Examinee determines that Quadrant Power Tilt is greater than 1.02 and proceeds to Step 6 to reduce thermal power.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

**Terminating Cues:**      The JPM is complete

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_



**ANSWER KEY QUADRANT POWER TILT MANUAL CALCULATION**

Detector Channel		1	2	3	4	QPTR	PPCS
Upper	41A	245	226	1.084	0.959 ±.001	1.131±.001	OOS
	42A	195	282	0.691		0.721±.001	OOS
	43A	289	281	1.028		1.073±.001	OOS
	44A	305	296	1.030		1.075±.001	OOS
Lower	41B	259	250	1.036	0.910 ±.001	1.138±.001	OOS
	42B	188	279	0.674		0.740±.001	OOS
	43B	280	289	0.969		1.064±.001	OOS
	44B	285	296	0.963		1.058±.001	OOS

/

---

Date / Time

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Performed By

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IV

**NOTE:** Highlighted column 1 numbers are to be filled out in a PBF-2512 to be handed out to examinee after they read the NI drawers and fill in column 1.

POWER RANGE DETECTORS

POINT BEACH NUCLEAR PLANT  
 U1C38  
 POWER RANGE DETECTOR CALIBRATION CURRENTS  
 AT 100% POWER

UNIT 1

100% CALIBRATION CURRENTS ( $\mu$ A)								DATE	INITIALS
NE-41		NE-42		NE-43		NE-44			
A	B	A	B	A	B	A	B		
223	245	281	277	280	288	290	283	2 weeks ago	DDD
222	242	282	278	281	290	295	280	1 week ago	AKZ
226	250	282	279	281	289	296	296	y-day	RCB

**TURNOVER SHEET**

- Unit 1 is operating at 91% and stable following a dropped rod.
- The PPCS Excore Tilt calculations were declared inoperable in accordance with CP 312, PPCS Operability Determination, due to PPCS being out of service.
- Annunciator POWER RANGE CHANNEL DEVIATION (1C04 1A 3-3) is LIT.
- The crew has completed the first four steps of AOP 6H, Quadrant Power Tilt.

**INITIATING CUES:**

- The SRO directs you to perform PBF-2512, Quadrant Power Tilt Manual Calculation, in accordance with AOP-6H, Quadrant Power Tilt, Step 5.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



# JOB PERFORMANCE MEASURE

**JPM TITLE:** Perform a Pressurizer Heater Group Input Test Calculation

**JPM NUMBER:** PBN JPM P010.004.COT REV. 2

**TASK NUMBER(S) / TASK TITLE(S):** P010.004.COT / Monitor the pressurizer pressure control system for proper operation

**K/A NUMBERS:** 2.1.25 **K/A VALUE:** 2.9 / 3.9

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:   
Simulator:  Other:   
Lab:

Time for Completion: 15 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

<b>Developed by:</b>	<u>Andrew Zommers</u>	
	Instructor/Developer	Date
<b>Reviewed by:</b>	_____	
	Instructor (Instructional Review)	Date
<b>Validated by:</b>	_____	
	SME (Technical Review)	Date
<b>Approved by:</b>	_____	
	Training Supervision	Date
<b>Approved by:</b>	_____	
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

<b>REVIEW STATEMENTS</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}





**SIMULATOR SET-UP:**

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

**Required Materials:** Partial TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test filled out to the point where calculations are needed.  
Calculator

**General References:** TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test

**Task Standards:** Properly calculate and record pressurizer heater inputs per TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- You are the Unit 1 CO.
- Unit 1 is currently in Mode 2 with a reactor startup in progress.
- Pressurizer Heater Group 1T-1C failed on the previous shift.
- Engineering has determined that a potential common mode failure exists (applicable only to Unit 1), and has recommended that TS 43, Pressurizer Heater Group Energy Input Test, be performed on Unit 1 Pressurizer Heater Group 1T-1D in order to verify its operability.
- The test is in progress, voltage and current readings have been taken by maintenance, and the procedure is complete up to and including step 5.1.13.

**INITIATING CUES:**

- You are to complete TS-43, 1T-1D Pressurizer Heater Group Test, beginning at step 5.1.14.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



**JPM PERFORMANCE INFORMATION**

**Start Time:** \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**NOTE:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<b>Performance Step: 1</b> <b>Critical <u>N</u></b>	<b>CALCULATE</b> the average Voltage and Average current for each breaker. ( <b>RECORD</b> on table above)
<b>Standard:</b>	Average voltage and average current is calculated and recorded in Table PP-13 1T-1D. (see attached table for correct values)
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 2</b> <b>Critical <u>N</u></b>	<b>CALCULATE</b> the Power for each Breaker per the following formula. Power= 1.732 x Average Voltage x Average Current x 1/1000. ( <b>RECORD</b> on table PP-13 1T-1D above)												
<b>Standard:</b>	Power for each breaker is calculated and recorded in Table PP-13 1T-1D. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Breaker</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Power in KW</td> <td>20.7</td> <td>19.8</td> <td>20.4</td> <td>20.4</td> <td>20.7</td> </tr> </table>	Breaker	1	2	3	4	5	Power in KW	20.7	19.8	20.4	20.4	20.7
Breaker	1	2	3	4	5								
Power in KW	20.7	19.8	20.4	20.4	20.7								
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____												
<b>Comments:</b>													



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Input Test Calculation, Rev. 2**

<b>Performance Step: 3</b> <b>Critical <u>Y</u></b>	Sum the Total power as follows: $\text{BKR\#} \quad \frac{\quad}{1} + \frac{\quad}{2} + \frac{\quad}{3} + \frac{\quad}{4} + \frac{\quad}{5} = \frac{\quad}{\text{TOTAL}} \text{ in KW}$
<b>Standard:</b>	Power of each breaker is added together to determine total power of Pressurizer Heater Group 1T-1D.
<b>Evaluator Note:</b>	<b>Total power should be 102 ±1 KW</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 4</b> <b>Critical <u>Y</u></b>	Multiply by uncertainty factor of 0.9335 as follows. Total Power in KW _____ x 0.9335 = _____ KW and record result in section 6.0 Acceptance Criteria
<b>Standard:</b>	The total power of the heater Group obtained in the previous step is multiplied by 0.9335 and recorded in section 6.0.
<b>Evaluator Note:</b>	<b>Final value is 95.2 ± 1.0 kW.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 5</b> <b>Critical <u>N</u></b>	Independently Review the calculations for steps 5.1.14, 5.1.15, 5.1.16, and 5.1.17 to verify accuracy.
<b>Standard:</b>	Examinee asks for an Independent Verification of calculation
<b>Evaluator Cue:</b>	<b>Sign the step to indicate that an Independent Verification as performed</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



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<b>Performance Step: 6 Critical <u>N</u></b>	<b><u>IF</u></b> using TS-43(Unit 1).xls Spreadsheet to calculate data, <b><u>THEN</u></b> <b>RECORD</b> corrected power for 1T-1D in Section 6.0, Acceptance Criteria.
<b>Standard:</b>	This step should be marked N/A
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 7 Critical <u>Y</u></b>	Step 6.0 Acceptance Criteria: The total power of Pressurizer Heater Group 1T-1D is compared with the Technical Specification Acceptance Criteria.
<b>Standard:</b>	Total power of Pressurizer Heater Group 1T-1D is determined to <b><u>NOT</u></b> meet Technical Specification requirements of $\geq 100$ kW.
<b>Evaluator Cue:</b>	<b>Inform examinee the Third License will work on writing an AR.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

**Terminating Cues:**      The JPM is complete

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_

Fill in the table in TS 43 section 5.1 as follows:

<b>PP-13 1T-1D</b>					
BREAKER	1	2	3	4	5
VOLTAGE					
A-B	486.5	486.5	486.5	486.4	486.4
A-C	486.2	486.4	486.3	486.3	486.3
B-C	488.8	488.8	488.7	488.7	488.6
AVERAGE	<b>*487.2±.1</b>	<b>*487.2±.1</b>	<b>*487.2±.1</b>	<b>*487.1±.1</b>	<b>*487.1±.1</b>
CURRENT					
A	24.2	23.6	23.8	24.2	25.0
B	24.8	23.9	24.5	24.2	24.1
C	24.4	23.1	24.2	24.1	24.5
AVERAGE	<b>*24.5±.1</b>	<b>*23.5±.1</b>	<b>*24.2±.1</b>	<b>*24.2±.1</b>	<b>*24.5±.1</b>
POWER in KW	<b>*20.6-20.7</b>	<b>*19.8-19.9</b>	<b>*20.4-20.5</b>	<b>*20.4-20.5</b>	<b>*20.6-20.7</b>

**\*DO NOT** record these values on the paper work submitted to the candidate, they will calculate these values.

- 5.1.8 Record Test Instruments used.  
 ID No. MCCP-12 Cal. date Today  
 ID No. MCMM-37 Cal. date Today





**TURNOVER SHEET****INITIAL CONDITIONS:**

- You are the Unit 1 CO.
- Unit 1 is currently in Mode 2 with a reactor startup in progress.
- Pressurizer Heater Group 1T-1C failed on the previous shift.
- Engineering has determined that a potential common mode failure exists (applicable only to Unit 1), and has recommended that TS 43, Pressurizer Heater Group Energy Input Test, be performed on Unit 1 Pressurizer Heater Group 1T-1D in order to verify its operability.
- The test is in progress, voltage and current readings have been taken by maintenance, and the procedure is complete up to and including step 5.1.13.

**INITIATING CUES:**

- You are to complete TS-43, 1T-1D Pressurizer Heater Group Test, beginning at step 5.1.14.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



# JOB PERFORMANCE MEASURE

**JPM**  
Page 1 of 10

**JPM TITLE:** PERFORM AUXILIARY FEEDWATER LINEUP

**JPM NUMBER:** PBN JPM P061.006.COT **REV. 0**

**TASK NUMBER(S) / TASK TITLE(S):** P061.006.COT / Perform AFW Pump/Valve inservice test

**K/A NUMBERS:** 2.2.15 **K/A VALUE:** 3.9 / 4.3

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:

Simulator:  Other:

Lab:

Time for Completion: 15 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

<b>Developed by:</b> <u>Andrew Zommers</u>	_____	_____
	Instructor/Developer	Date
<b>Reviewed by:</b> _____	_____	_____
	Instructor (Instructional Review)	Date
<b>Validated by:</b> _____	_____	_____
	SME (Technical Review)	Date
<b>Approved by:</b> _____	_____	_____
	Training Supervision	Date
<b>Approved by:</b> _____	_____	_____
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

<b>REVIEW STATEMENTS</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**SIMULATOR SET-UP:**

**SIMULATOR SETUP INSTRUCTIONS:**

1. Snap into any full power IC for Unit 1
2. Place 1AF-4000, 1P-29 AFP Disch SG B Inlet MOV to **SHUT**
3. Place 1AF-4006, 1P-29 TDAFW SW Supply MOV to **OPEN/Auto**
4. Fail 1AF-4073A, 1P-53 MDAFW Pump Mini Recirc **OPEN**
5. Set 1FIC-4074B, 1P-53 MDAFW Pump to 1HX-1B Flow Control to **175 gpm**
6. SAVE these conditions in an IC for multiple use.

**SIMULATOR MALFUNCTIONS:**

<b>MALFUNCTION No.</b>	<b>MALFUNCTION TITLE</b>	<b>DELAY</b>	<b>RAMP</b>	<b>ET</b>	<b>DELETE IN</b>	<b>INITIAL VALUE</b>	<b>FINAL VALUE</b>	<b>NOTES</b>
VLV1AFW042	1AF-4073A Recirc Valve	-	-	-	-	-	Open	PRELOAD

**SIMULATOR OVERRIDES:**

N/A

**SIMULATOR REMOTE FUNCTIONS:**

N/A

**Required Materials:** 0-TS-AFW-002, Auxiliary Feedwater System Valve and Lock Checklist (Monthly)

**General References:** 0-TS-AFW-002, Auxiliary Feedwater System Valve and Lock Checklist (Monthly)

**Task Standards:** Perform unit 1 control board portion 0-TS-AFW-002, Auxiliary Feedwater System Valve and Lock Checklist (Monthly) and identify all discrepancies.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- You are CO3
- Unit 1 is operating at 100% power
- Unit 2 is in Mode 5
- A regularly scheduled call-up is due for 0-TS-AFW-002, Auxiliary Feedwater System Valve and Lock Checklist (Monthly)

**INITIATING CUES:**

- OS1 directs you to perform the Unit 1 control board portions of 0-TS-AFW-002, Auxiliary Feedwater System Valve and Lock Checklist (Monthly)

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



**JPM PERFORMANCE INFORMATION**

Start Time: \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**NOTE:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<b>Performance Step: 1</b> <b>Critical <u>Y</u></b>	<b>ENSURE</b> that listed components are in their required position (Throttled)
<b>Standard:</b>	Examinee will find 1AF-4000, 1P-29 AFP Disch SG B Inlet MOV <b>SHUT</b> .
<b>Evaluator Note:</b>	<b>When examinee discovers a component not in its required position, acknowledge the report, do not have the examinee reposition any equipment and have them continue. Cue the Shift Manager will investigate why this component is out of position.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 2</b> <b>Critical <u>Y</u></b>	<b>ENSURE</b> that listed components are in their required position (Shut/Auto)
<b>Standard:</b>	Examinee will find 1AF-4006, 1P-29 TDAFW SW Supply MOV <b>OPEN/AUTO</b> .
<b>Evaluator Note:</b>	<b>When examinee discovers a component not in its required position, acknowledge the report, do not have the examinee reposition any equipment and have them continue. Cue the Shift Manager will investigate why this component is out of position.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



**PBN JPM P061.006.COT, Perform AFW Pump/Valve Inservice Test, Rev. 0**

**JPM**  
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<b>Performance Step: 3 Critical <u>Y</u></b>	<b>ENSURE</b> that listed components are in their required position (Shut)
<b>Standard:</b>	Examinee will find 1AF-4073A, 1P-53 MDAFW Pump Mini Recirc <b>OPEN</b> .
<b>Evaluator Note:</b>	<b>When examinee discovers a component not in its required position, acknowledge the report, do not have the examinee reposition any equipment and have them continue. Cue the Shift Manager will investigate why this component is out of position.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 4 Critical <u>Y</u></b>	<b>ENSURE</b> that listed components are in their required position (set at 145)
<b>Standard:</b>	Examinee will find 1FIC-4074B, 1P-53 MDAFW Pump to 1HX-1B Flow Control set at <b>175 gpm</b> .
<b>Evaluator Note:</b>	<b>When examinee discovers a component not in its required position, acknowledge the report, do not have the examinee reposition any equipment and have them continue. Cue the Shift Manager will investigate why this component is out of position.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	





**PBN JPM P061.006.COT, Perform AFW Pump/Valve Inservice Test, Rev. 0**

**JPM**  
Page 8 of 10

<b>Performance Step: 5 Critical N</b>	Examinee documents the equipment discrepancies and informs shift management
<b>Standard:</b>	Examinee informs shift management of checklist discrepancies.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

**Terminating Cues:**      The JPM is complete

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_



## TURNOVER SHEET

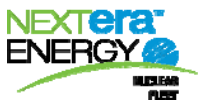
### INITIAL CONDITIONS:

- You are CO3
- Unit 1 is operating at 100% power
- Unit 2 is in Mode 5
- A regularly scheduled call-up is due for 0-TS-AFW-002, Auxiliary Feedwater System Valve and Lock Checklist (Monthly)

### INITIATING CUES:

- OS1 directs you to perform the Unit 1 control board portions of 0-TS-AFW-002, Auxiliary Feedwater System Valve and Lock Checklist (Monthly)

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



# JOB PERFORMANCE MEASURE

**JPM TITLE:** DETERMINE A STAY TIME FOR A HIGH RADIATION AREA

**JPM NUMBER:** PBN JPM P162.006a.AOT **REV. 4**

**TASK NUMBER(S) / TASK TITLE(S):** PBN P162.006.AOT, COMPLY WITH RADIATION WORK PERMOTS

**K/A NUMBERS:** **GENERIC 2.3.7** **K/A VALUE:** **3.5/3.6**  
**GENERIC 2.3.12** **3.2/3.7**

**Justification (FOR K/A VALUES <3.0):**

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

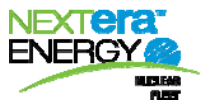
**EVALUATION LOCATION:** In-Plant:  Control Room:   
Simulator:  Other:   
Lab:

Time for Completion: 10 Minutes Time Critical: No

Alternate Path [NRC]: \_\_\_\_\_

Alternate Path [INPO]: \_\_\_\_\_

<b>Developed by:</b> <u>Andrew Zommers</u>	Instructor/Developer	Date
<b>Reviewed by:</b> _____	Instructor (Instructional Review)	Date
<b>Validated by:</b> _____	SME (Technical Review)	Date
<b>Approved by:</b> _____	Training Supervision	Date
<b>Approved by:</b> _____	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**PBN JPM P162.006a.AOT, Determine a Stay Time for a High Radiation Area, Rev. 4**

**UPDATE LOG:** Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	Developed for the ILT 2009 audit exam (PBN JPM 162.009a.AOT) from a non-issued JPM developed for the 2003 ILT NRC Exam. Changed JPM number to P162.006a.AOT to reflect correct task and revised JPM Initiating Cues to include amplifying information on what distance the tag for 1CV-371 was hung.				
Rev. 1	Updated for AOC Segment 14D				
Rev. 2	Updated for 2015 NRC ILT Exam				
Rev. 3	Updated for Segment 16C AOC.				
Rev. 4	Updated for ILT 2019 NRC Exam				

**SIMULATOR SET-UP:**

**SIMULATOR SETUP INSTRUCTIONS:**

- N/A

**SIMULATOR MALFUNCTIONS:**

- N/A

**SIMULATOR OVERRIDES:**

- N/A

**SIMULATOR REMOTE FUNCTIONS:**

- N/A

**Required Materials:** Survey Map of NRHX Cubicle  
Calculator

**General References:** HP 3.1, Radiological Surveys and Records  
PBF-4021

**Task Standards:** The maximum additional time that can be spent hanging danger tags in the General Area is determined to be 30 minutes.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- Reference the attached radiological survey map.
- A tag series is required to be hung in the Unit 1 Non-Regenerative Heat Exchanger Room which is posted as a High Radiation Area (HRA).
- The first valve on the tag series is 1CV-371, Letdown Line Containment Isolation valve.
- The remaining valves are indicated on the survey map.
- Radiation Protection (RP) has placed a dose limit of 50mR for you to perform the entire tag series.
- RP request you stay as far away from 1CV-371 as possible to minimize the dose.

**INITIATING CUES:**

- It took you 5 minutes to hang the tag on 1CV-371 (you were able to hang the tag from arm's length). Arms length = 30 cm.
- Determine the **MAXIMUM** time (in minutes) that can be spent tagging **ALL OTHER** valves indicated on the survey map without exceeding the dose limit for this task.
- Assume the time for access and egress of the room is negligible.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator upon completion of the JPM.**



**JPM PERFORMANCE INFORMATION**

Start Time: \_\_\_\_\_

**NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).**

**NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.**

<b>Performance Step: 1 Critical Y</b>	Determine total dose received closing the valve in the HRA (360mR/hr field).
<b>Standard:</b>	The total dose received to close the first valve is determined to be 30mR.  $(360\text{mR/hr} \times 5 \text{ min}) \div 60 \text{ min/hr} = 30 \text{ mR}$
<b>Performance:</b>	<b>SATISFACTORY</b> ____ <b>UNSATISFACTORY</b> ____
<b>Comments:</b>	_____

<b>Performance Step: 2 Critical Y</b>	Available dose for hanging tags in the General Areas is determined.
<b>Standard:</b>	Dose available for hanging tags in the General Areas is determined to be 20mR.  $50 \text{ mR} - 30 \text{ mR} = 20 \text{ mR}$
<b>Performance:</b>	<b>SATISFACTORY</b> ____ <b>UNSATISFACTORY</b> ____
<b>Comments:</b>	_____

<b>Performance Step: 3</b> <b>Critical Y</b>	Determine maximum time to hang tags in the General Area.
<b>Standard:</b>	Maximum time to be spent in the General Area is determined to be 30 minutes.  (20 mR ÷ 40 mR/hr) X 60 min/hr = 30 min
<b>Performance:</b>	<b>SATISFACTORY</b> ____ <b>UNSATISFACTORY</b> ____
<b>Comments:</b>	_____

**Terminating Cues:** The Task is complete.

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_



**TURNOVER SHEET**

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- Reference the attached radiological survey map.
- A tag series is required to be hung in the Unit 1 Non-Regenerative Heat Exchanger Room which is posted as a High Radiation Area (HRA).
- The first valve on the tag series is 1CV-371, Letdown Line Containment Isolation valve.
- The remaining valves are indicated on the survey map.
- Radiation Protection (RP) has placed a dose limit of 50mR for you to perform the entire tag series.
- RP request you stay as far away from 1CV-371 as possible to minimize the dose.

**INITIATING CUES:**

- It took you 5 minutes to hang the tag on 1CV-371 (you were able to hang the tag from arm's length). Arms length = 30 cm.
- Determine the **MAXIMUM** time (in minutes) that can be spent tagging **ALL OTHER** valves indicated on the survey map without exceeding the dose limit for this task.
- Assume the time for access and egress of the room is negligible.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator upon completion of the JPM.**





# JOB PERFORMANCE MEASURE

**JPM**  
Page 1 of 15

**JPM TITLE:** REVIEW QUADRANT POWER TILT MANUAL CALCULATION

**JPM NUMBER:** PBN JPM P119.223b.SRO REV. 1

**TASK NUMBER(S) / TASK TITLE(S):** P119.223.SRO/Review Completed Procedures

**K/A NUMBERS:** 2.1.37 **K/A VALUE:** 4.3 / 4.6

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:   
Simulator:  Other:   
Lab:

Time for Completion: 20 Minutes Time Critical: NO

Alternate Path [NRC]: YES

Alternate Path [INPO]: YES

<b>Developed by:</b> <u>Andrew Zommers</u>	_____	_____
	Instructor/Developer	Date
<b>Reviewed by:</b>	_____	_____
	Instructor (Instructional Review)	Date
<b>Validated by:</b>	_____	_____
	SME (Technical Review)	Date
<b>Approved by:</b>	_____	_____
	Training Supervision	Date
<b>Approved by:</b>	_____	_____
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}





**SIMULATOR SET-UP:**

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

**Required Materials:** PBF 2512, "Quadrant Power Tilt Manual Calculation" (attached)  
Reactor Operating Data (ROD) Book, ROD 14, "Power Range Detector  
Calibration Currents at 100% Power" (attached)  
Calculator

**General References:** AOP-6H, "Quadrant Power Tilt"  
CP 312, "PPCS Operability Determination"  
PBF 2512, "Quadrant Power Tilt Manual Calculation"  
Reactor Operating Data (ROD) Book, ROD 14, "Power Range Detector  
Calibration Currents at 100% Power"

**Task Standards:** The Examinee determines there are errors with PBF-2512, "Quadrant Power  
Tilt Manual Calculation" and determine required power reduction.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- Unit 1 is operating at 92% and stable following a dropped rod.
- The PPCS Excore Tilt calculations were declared inoperable in accordance with CP 312, "PPCS Operability Determination", due to PPCS being out of service.
- Annunciator POWER RANGE CHANNEL DEVIATION (1C04 1A 3-3) is LIT.
- The crew has completed the first four steps of AOP 6H, Quadrant Power Tilt.
- The 4<sup>th</sup> License has completed PBF-2512, "Quadrant Power Tilt Manual Calculation", in accordance with AOP-6H, "Quadrant Power Tilt", Step 5.

**INITIATING CUES:**

- The Shift Manager directs you, OS2, to perform an independent review of the completed PBF-2512, "Quadrant Power Tilt Manual Calculation" and determine any required actions.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**

### JPM PERFORMANCE INFORMATION

Start Time: \_\_\_\_\_

**NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).**

**NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.**

<b>Performance Step: 1 Critical <u>N</u></b>	Verify column 1 Record Power Range meter readings from the 0-500 microamp scale.
<b>Standard:</b>	Examinee verifies recorded power range meter readings from the 0-500 microamp scale (Channels 41A, 42A, 43A, 41B, 42B, 43B, and 44B) into the DATA blocks for Column 1.
<b>Evaluator Cue:</b>	If asked, inform the examinee the RO correctly filled in data for Column 1.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 2 Critical <u>Y</u></b>	Verify column 2 channel calibration current data transferred from ROD 14.
<b>Standard:</b>	The Examinee verifies transferred channel calibration current from ROD 14 (Channels 41A, 42A, 43A, 41B, 42B, 43B, and 44B) into the DATA blocks for Column 2.
<b>Evaluator Note:</b>	Data was transferred incorrectly for 44B.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 3 Critical N</b>	Verify column 3 calculate power for each channel (Column 1 ÷ Column 2).
<b>Standard:</b>	<ul style="list-style-type: none"> <li>The Examinee calculates power for each channel (Channels 41A, 42A, 43A, 41B, 42B, 43B, and 44B) by dividing the Power Range meter reading values recorded in Column 1 by the channel calibration currents from ROD 14 recorded in Column 2 and</li> <li>Verifies the calculated power for each channel for Column 3.</li> </ul>
<b>Evaluator Note:</b>	Calculation for channel 44B incorrect from wrong data recorded in column 2.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 4 Critical N</b>	Verify column 4 calculate average power [(sum of Column 3) ÷ 4]
<b>Standard:</b>	<ul style="list-style-type: none"> <li>The Examinee calculates average power (Upper and Lower) by totaling the values recorded in Column 3 and then dividing by the number 4 and</li> <li>Verifies the calculated average power values in column 4.</li> </ul>
<b>Evaluator Note:</b>	Lower average power incorrect due to previous incorrect data being recorded.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	



<b>Performance Step: 5 Critical Y</b>	Verify QPTR Calculate upper and lower tilt ratio (Column 3 ÷ Column 4)
<b>Standard:</b>	<ul style="list-style-type: none"> <li>The Examinee calculates upper and lower tilt ratio by dividing the calculated power for each channel value recorded in Column 3 by the calculated average power recorded in Column 4 and</li> <li>Verifies the calculated upper and lower tilt ratio values for QPTR.</li> </ul>
<b>Evaluator Note:</b>	All lower QPTR values incorrect and 41A upper recorded incorrectly.
<b>Evaluator Cue:</b>	If examinee reports there are errors associated with the completed QPTR calculation acknowledge the report.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 6 Critical N</b>	PPCS NTILT <sub>x</sub> U for N41A through N44A, NTILT <sub>x</sub> L for N41B through N44B.
<b>Standard:</b>	<p>The Examinee may:</p> <ul style="list-style-type: none"> <li>Leave the PPCS Column blank, or</li> <li>N/A the PPCS Column and add remarks annotating that PPCS excore tilt calculations were declared inoperable.</li> </ul>
<b>Evaluator Note:</b>	PPCS Excore Tilt calculations were declared inoperable per initial conditions.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	



<b>Performance Step: 7 Critical N</b>	Verify the Date/Time and Performed By/IV and sign for Shift Management Review
<b>Standard:</b>	The Examinee signifies completion of the Quadrant Power Tilt Manual Calculation By: <ul style="list-style-type: none"> <li>• Verifying the Unit designator is filled in,</li> <li>• Verifying the Date/Time and Performed By blocks and</li> <li>• Returning the completed form to the Evaluator</li> </ul>
<b>Evaluator Cue:</b>	Upon completion of PBF-2512 review the examinee may report errors associated with the calculations and not sign the PBF.  Acknowledge the report and inform the examinee the SM directs you to continue with AOP 6H, Quadrant Power Tilt, Step 5 using the corrected calculations.
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 8 Critical Y</b>	Check Quadrant Power Tilt – Greater than 1.02
<b>Standard:</b>	The Examinee determines that Quadrant Power Tilt is greater than 1.02 (12%) and proceeds to Step 6 to reduce thermal power.
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



<b>Performance Step: 9 Critical Y</b>	Reduce Thermal Power at least 3% from Rated Thermal Power for every 1% Indicated Power Tilt.
<b>Standard:</b>	The Examinee determines that Reactor Thermal Power needs to be reduces 36% from RTP which means an additional 28% minimum load reduction is needed based on initial conditions. (down to 64% RTP)
<b>Evaluator Cue:</b>	Ask examinee what the final required power level is.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

**Terminating Cues:**      The JPM is complete

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_





# ANSWER KEY DO NOT HAND OUT

Detector Channel		1	2	3	4	QPTR	PPCS
Upper	41A	237	226	1.049	0.943	1.112± .001	
	42A	226	282	0.801		0.849± .001	
	43A	270	281	0.961		1.018± .001	
	44A	285	296	0.963		1.021± .001	
Lower	41B	242	250	0.968	0.905	1.069± .001	
	42B	230	279	0.824		0.911± .001	
	43B	264	289	0.913		1.009± .001	
	44B	271	296	0.916		1.011± .001	

/

---

Date / Time

---

Performed By

---

IV

HIGHLITED AREAS ARE WHERE ERRORS WERE INSERTED

Detector Channel		1	2	3	4	QPTR	PPCS
Upper	41A	237	226	1.049	0.943	1.049	
	42A	226	282	0.801		0.849	
	43A	270	281	0.961		1.018	
	44A	285	296	0.963		1.021	
Lower	41B	242	250	0.968	0.918	1.054	
	42B	230	279	0.824		0.898	
	43B	264	289	0.913		0.995	
	44B	271	280	0.968		1.054	

Today/20 min ago

---

Date / Time

---

Performed By

---

IV

**TURNOVER SHEET**

**INITIAL CONDITIONS:**

- Unit 1 is operating at 92% and stable following a dropped rod.
- The PPCS Excore Tilt calculations were declared inoperable in accordance with CP 312, “PPCS Operability Determination”, due to PPCS being out of service.
- Annunciator POWER RANGE CHANNEL DEVIATION (1C04 1A 3-3) is LIT.
- The crew has completed the first four steps of AOP 6H, Quadrant Power Tilt.
- The 4<sup>th</sup> License has completed PBF-2512, “Quadrant Power Tilt Manual Calculation”, in accordance with AOP-6H, “Quadrant Power Tilt”, Step 5.

**INITIATING CUES:**

- The Shift Manager directs you, OS2, to perform an independent review of the completed PBF-2512, “Quadrant Power Tilt Manual Calculation” and determine any required actions.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**

POWER RANGE DETECTORS

---

POINT BEACH NUCLEAR PLANT  
 U1C38  
 POWER RANGE DETECTOR CALIBRATION CURRENTS  
 AT 100% POWER

UNIT 1

100% CALIBRATION CURRENTS ( $\mu$ A)								DATE	INITIALS
NE-41		NE-42		NE-43		NE-44			
A	B	A	B	A	B	A	B		
223	245	281	277	280	288	290	283	2 weeks ago	DDD
222	242	282	278	281	290	295	280	1 week ago	AKZ
226	250	282	279	281	289	296	296	y-day	RCB

Point Beach Nuclear Plant  
**QUADRANT POWER TILT MANUAL CALCULATION**

Unit 1 Shift Management Review \_\_\_\_\_

**NOTE:** If available, then PPCS data should be recorded.  
 The calculation should be carried out to the nearest 1000th and should be independently checked.  
 Care should be used to accurately transfer meter readings and data from ROD 14.

Detector Channel	1	2	3	4	QPTR	PPCS
Upper	41A	237	226	1.049	0.943	1.049
	42A	226	282	0.801		0.849
	43A	270	281	0.961		1.018
	44A	285	296	0.963		1.021
Lower	41B	242	250	0.968	0.918	1.054
	42B	230	279	0.824		0.898
	43B	264	289	0.913		0.995
	44B	271	280	0.968		1.054

Today/20 min ago  
 Date / Time

AKZ

Performed By

IV

Detector Channel	1	2	3	4	QPTR	PPCS
Upper	41A					
	42A					
	43A					
	44A					
Lower	41B					
	42B					
	43B					
	44B					

/

Date / Time

Performed By

IV

Detector Channel	1	2	3	4	QPTR	PPCS
Upper	41A					
	42A					
	43A					
	44A					
Lower	41B					
	42B					
	43B					
	44B					

/

Date / Time

Performed By

IV

**NOTE:** This is a SOMS form and SOMS must also be revised when this form is revised.

**Column**

**Instruction/Source**

- Record Power Range meter readings from the 0-500 microamp scale (check range set at 0.5 milliamps), OR obtain readings from NI drawer test points. MTE# N/A Cal due date N/A
- Transfer channel calibration current from ROD 14.
- Calculate power for each channel (column 1 ÷ column 2)

**NOTE:** With input from one Power Range channel **INOPERABLE AND** Thermal Power  $\leq 75\%$  RTP, the remaining three channels can be used for calculating QPTR in column 4 as [(sum of column 3) ÷ 3]

- Calculate average power [(sum of column 3) ÷ 4]
- QPTR Calculate upper and lower tilt ratio (column 3 ÷ column 4)  
 PPCS NTILT<sub>xU</sub> for N41A through N44A, NTILT<sub>xL</sub> for N41B through N44B



# JOB PERFORMANCE MEASURE

**JPM**  
Page 1 of 11

**JPM TITLE:** Review a Pressurizer Heater Group Input Test Calculation

**JPM NUMBER:** PBN JPM P119.223f.SRO **REV. 0**

**TASK NUMBER(S) / TASK TITLE(S):** P119.223.SRO/Review completed procedures

**K/A NUMBERS:** 2.1.7 **K/A VALUE:** 4.4 / 4.7

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:   
Simulator:  Other:   
Lab:

Time for Completion: 15 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

<b>Developed by:</b> <u>Andrew Zommers</u>	_____	_____
	Instructor/Developer	Date
<b>Reviewed by:</b> _____	_____	_____
	Instructor (Instructional Review)	Date
<b>Validated by:</b> _____	_____	_____
	SME (Technical Review)	Date
<b>Approved by:</b> _____	_____	_____
	Training Supervision	Date
<b>Approved by:</b> _____	_____	_____
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

<b>REVIEW STATEMENTS</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**SIMULATOR SET-UP:**

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

**Required Materials:** Completed TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test filled out with pre-selected errors.  
Calculator

**General References:** TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test

**Task Standards:** Properly review the completed TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test identifying errors and any required actions.



I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- You are the Unit 1 OS.
- Unit 1 is currently in Mode 2 with a reactor startup in progress.
- TS 43, 1T-1D Unit 1 Pressurizer Heater Group Energy Input Test, was performed the previous shift.

**INITIATING CUES:**

- The Shift Manger has tasked you with reviewing the completed TS-43, 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test.
- Identify any required actions.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**

### JPM PERFORMANCE INFORMATION

Start Time: \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**NOTE:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<b>Performance Step: 1</b> <b>Critical <u>Y</u></b>	<b>VERIFY</b> the average Voltage and Average current for each breaker.
<b>Standard:</b>	Verify the average voltage and average current was calculated and recorded in Table PP-13 1T-1D correctly.
<b>Evaluator Note:</b>	<b>Breaker 3 average current is calculated wrong, should be 24.6±.1. (Error caused by transposition of 25.7 to 27.5)</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 2</b> <b>Critical <u>Y</u></b>	<b>VERIFY</b> the Power for each Breaker per the following formula. Power= 1.732 x Average Voltage x Average Current x 1/1000.
<b>Standard:</b>	Verify the power for each breaker was calculated and recorded in Table PP-13 1T-1D.
<b>Evaluator Note:</b>	<b>Average power is wrong for breakers 1, should be 20.7±.1 (Error cause by input of 24.5 into wrong block)</b>  <b>Average power is wrong for breakers 3, should be 20.8±.1 (Error carried forward from transposition error in current average)</b>  <b>Average power is wrong for breakers 5, should be 19.6±.1 (Error cause by transposition of average voltage from 468.1 to 486.1)</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



**PBN JPM P119.223f.SRO, Review a Pressurizer Heater Group  
Input Test Calculation, Rev. 0**

**JPM**  
Page 7 of 11

<b>Performance Step: 3 Critical <u>Y</u></b>	<b>VERIFY</b> the sum the Total power as follows:
<b>Standard:</b>	Verify the power of each breaker is added together to determine total power of Pressurizer Heater Group 1T-1D.
<b>Evaluator Note:</b>	<b>Total power is wrong, should be 102.7±.1 (Error carried forward from Power in KW for breaker 1, 3, and 5)</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 4 Critical <u>Y</u></b>	Multiply by uncertainty factor of 0.9335 as follows. Total Power in KW _____ x 0.9335 = _____ KW and record result in section 6.0 Acceptance Criteria
<b>Standard:</b>	The total power of the heater Group obtained in the previous step is multiplied by 0.9335 and recorded in section 6.0.
<b>Evaluator Note:</b>	<b>Corrected total power is wrong, should be 95.9±.1 KW (Error carried forward from Total Power)</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



**PBN JPM P119.223f.SRO, Review a Pressurizer Heater Group  
Input Test Calculation, Rev. 0**

**JPM**  
Page 8 of 11

<b>Performance Step: 5 Critical Y</b>	<b>VERIFY</b> the total power of Pressurizer Heater Group 1T-1D is compared with the Technical Specification Acceptance Criteria.
<b>Standard:</b>	Verify the total power of Pressurizer Heater Group 1T-1D is determined to <u>NOT</u> meet Technical Specification requirements of $\geq 100$ kW and corrects the TS-43 informing the Shift Manager.
<b>Evaluator Cue:</b>	<b>Acknowledge and reports of the incorrect procedure performance.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 6 Critical N</b>	Examinee determines Pressurizer Heater Group D acceptance criteria is UNSAT and declares the heater group INOPERABLE per TS-43 note.
<b>Standard:</b>	Examinee declares Pressurizer Heater Group D TS-43 acceptance criteria as UNSAT and the heater group as INOPERABLE.
<b>Evaluator Cue:</b>	<b>If asked, 1T-1C Pressurizer Heater Group is OPERABLE.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

**Terminating Cues:**      The JPM is complete

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_

Fill in the table in TS 43 section 5.1 as follows:

<b>PP-13 1T-1D</b>					
BREAKER	1	2	3	4	5
VOLTAGE					
A-B	486.5	486.5	486.5	486.4	468.4
A-C	486.2	486.4	486.3	486.3	468.2
B-C	488.8	488.8	488.7	488.7	467.8
AVERAGE	<b>487.2</b>	<b>487.2</b>	<b>487.2</b>	<b>487.1</b>	<b>468.1</b>
CURRENT					
A	24.2	25.1	23.8	24.2	24.1
B	24.8	25.3	25.7	24.2	24.3
C	24.4	25.2	24.2	24.1	24.2
AVERAGE (correct #)	<b>24.5</b>	<b>25.2</b>	<b>25.2</b> <b>(24.6±.1)</b>	<b>24.2</b>	<b>24.2</b>
POWER in KW (correct #)	<b>24.5</b> <b>(20.7±.1)</b>	<b>21.26</b>	<b>21.3</b> <b>(20.8±.1)</b>	<b>20.42</b>	<b>20.4</b> <b>(19.6±.1)</b>

**Record these values on the paper work submitted to the candidate, they will validate these values. Errors are highlighted in BLUE, and correct values are in YELLOW.**

5.1.8 Record Test Instruments used.  
 ID No. MCCP-12 Cal. date Today  
 ID No. MCMM-37 Cal. date Today

5.1.16 fill in total KW to be power from above table equals **107.8** **(102.7±.1)**  
 5.1.17 fill in total KW to be 107.27 and adjusted KW to be **100.6** **(95.9±.1)**



**TURNOVER SHEET****INITIAL CONDITIONS:**

- You are the Unit 1 OS.
- Unit 1 is currently in Mode 2 with a reactor startup in progress.
- TS 43, 1T-1D Unit 1 Pressurizer Heater Group Energy Input Test, was performed the previous shift.

**INITIATING CUES:**

- The Shift Manger has tasked you with reviewing the completed TS-43, 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test.
- Identify any required actions.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



# JOB PERFORMANCE MEASURE

**JPM TITLE:** APPROVE A CLEARANCE ORDER

**JPM NUMBER:** PBN JPM NUC TAG 104a.SRO **REV. 2**

**TASK NUMBER(S) / TASK TITLE(S):** NUC TAG 104, Clearance Authorizer

**K/A NUMBERS:** 2.2.13 **K/A VALUE:** 4.1 / 4.3

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**  
 RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:   
 Simulator:  Other:   
 Lab:

Time for Completion: 20 Minutes Time Critical: NO

Alternate Path [NRC]: YES

Alternate Path [INPO]: YES

<b>Developed by:</b> <u>Andrew Zommers</u>	_____	_____
	Instructor/Developer	Date
<b>Reviewed by:</b> _____	_____	_____
	Instructor (Instructional Review)	Date
<b>Validated by:</b> _____	_____	_____
	SME (Technical Review)	Date
<b>Approved by:</b> _____	_____	_____
	Training Supervision	Date
<b>Approved by:</b> _____	_____	_____
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**UPDATE LOG:** Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1000) made to the material after initial approval.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 1	This JPM being revised to the new template, new fleet task numbering, changed to 1P-2C and new tagging software eSOMS to be used for the ILT 2011 NRC License Exam.				
Rev. 2	Updated to new JPM template and new procedure references.				

**SIMULATOR SET-UP:**

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

**Required Materials:** 1P-2C Charging Pump Clearance as provided from eSOMS  
OP-AA-101-1000 Clearance and Tagging  
OP-AA-101-1000-FO1, Clearance Development and Implementation Checklist, signed off thru preparer  
OI-50, Charging Pump Isolation  
P & ID 684J741 Sh. 2 Unit 1 CVCS  
Master Data Books  
WEST 499B466 Sh. 316A 1P-2C Charging Pump

**General References:** OP-AA-101-1000 Clearance and Tagging  
OP-AA-101-1000-FO1, Clearance Development and Implementation Checklist  
  
OI-50, Charging Pump Isolation  
P & ID 684J741 Sh. 2 Unit 1 CVCS  
Master Data Books  
WEST 499B466 Sh. 316A 1P-2C Charging Pump

**Task Standards:** Clearance is reviewed and the three errors noted in this JPM are identified.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- You are the relief crew SRO assigned to the Work Control Center. 1P-2C, Unit 1 Charging Pump, needs to be isolated per OI-50, Charging Pump Isolation and danger tagged for maintenance activities.

**INITIATING CUES:**

- You are to review the Clearance Order provided for adequacy.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**

### JPM PERFORMANCE INFORMATION

Start Time: \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**NOTE:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<b>Performance Step: 1 Critical <u>N</u></b>	Obtain and review references as needed to determine tag series adequacy.
<b>Standard:</b>	References (as indicated on clearance order coversheet) are obtained and reviewed as needed.
<b>Evaluator Note:</b>	The examiner should keep the examinee focused on the tag series review using available references (i.e. plant walk-down, review of requesting individual documentation and review of specific tags is not necessary, etc.)
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step: 2 Critical <u>Y</u></b>	Determine if specified tag series boundaries are adequate for worker safety and scope of work.
<b>Standard:</b>	Disconnect for 1P-2C determined to be incorrect, disconnect should be 1B29-P-2C.
<b>Evaluator Note:</b>	Disconnect listed on tag series, (1B29-P-2A) is for charging pump 1P-2A.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step: 3</b> <b>Critical <u>Y</u></b>	Determine if specified clearance order boundaries are adequate for worker safety and scope of work.
<b>Standard:</b>	CV-399, P-2C Charging Pump Suction has the wrong unit designator. 2CV-399 is selected vice 1CV-399.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step: 4</b> <b>Critical <u>Y</u></b>	Determine if clearance order boundaries are adequate for worker safety and scope of work.
<b>Standard:</b>	Drain valve 1CV-262C, 2P-2C Chg Pump Discharge Header Drain First Off Isol, is identified as being SHUT on the clearance order checklist. 1CV-262C should be listed as OPEN.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

**Terminating Cues:** When examinee indicates that all deficiencies have been identified OR indicates the Clearance Order is adequate, the JPM may be terminated.

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_



*Clearance Coversheet*

*Point Beach Nuclear Plant*

*Clearance Folder: ONLINE*

*Clearance: 1 CV P-2C MM*

*03*

*4/23/2019 10:18:10*

**Component to be Worked:**

1P-2C

CHARGING PUMP

8/PAB/U1 CHG PUMP RM

**WORK SCOPE**

Isolate 1P-2C per OI 50 to perform the following:

Electrically and hydraulically isolate 1P-2C to perform the following:

- 1) Replace pump seals per RMP 9003-2A.
- 2) Obtain oil sample from pump and change gear case oil.
- 3) Repair oil leak on pump fitting.

**ISOLATION NOTES**

Drawings and References:

684J741, Sh. 2 (Rev. 82); 499B466, Sh. 316A (Rev. 13); OI 50 (Rev. 18); CL 5A UNIT 1 (Rev. 31); TRM 3.5.1 (Rev. 11)

Additional References:

30001060C, Sheets 1 - 7; 30001061C, Sheets 1 - 2; 30001078C, Sh. 1

1P-2C will be OOS. Verify 1P-2A and 1P-2B are OPERABLE.

Perform isolation in parallel with the performance of OI 50 Charging Pump Isolation.

Reference TRM 3.5.1 and OM 3.27 for applicability.

LCO tracking required per NP 10.1.1 and the eSOMS Action Tracking module.

Condition: One required charging pump inoperable in Modes 1, 2, 3, or 4.

Action: Restore charging pump to OPERABLE status within 72 hours.

If two required Charging pumps are inoperable, the Unit shall be placed in Mode 3 in 7 hours and Mode 5 in 37 hours.

Prior to hanging tags, conduct a brief using PBF-2527 'Tagging Pre-Job Discussion Sheet'.

**HAZARDS:**

Stored Energy Release Tests (SERT):

Craft shall verify 1P-2C is hydraulically isolated, vented and drained.

Craft shall verify 1P-2C is electrically isolated.

Monitor the P-tubing off the 1P-2C drain lines (1CV-262C, 1CV-262F and 1CV-231C).

- If excessive flow is observed, notify the WCC.

Reference OP-AA-101-1000 'Clearance and Tagging' procedure, Attachment 2, as required, for stored energy release verification methods.

**CAUTION: SINGLE VALVE ISOLATION!**

Reference OP-AA-101-1000 'Clearance and Tagging' procedure, Attachment 4, sections 8.1.8 - 8.1.12 (pages 94 - 95) for specific requirements associated with clearances having only single valve isolation.

Operations Shift Manager / Operations Manager shall AUTHORIZE any clearance that utilizes single valve isolation.

\*\*\*SM / OM authorization SHALL BE DOCUMENTED per section 8.1.12\*\*\*

**CAUTION: HIGH PRESSURE FLUID!**

Isolated portion of CVCS systems contains high pressure fluid.

Review PRECAUTIONS and LIMITATIONS of OI 50.



*Clearance Coversheet*  
*Clearance Folder: ONLINE*  
*Clearance: 1 CV P-2C MM*

*Point Beach Nuclear Plant*

*03*

*4/23/2019 10:18:10*

**CAUTION: HAZARDOUS CHEMICAL (BORIC ACID)!**

Ensure personnel review or are briefed on the safety precautions contained in the MSDS documents prior to commencing work.

**CAUTION: RADIOLOGICAL HAZARD!**

Ensure appropriate radiological controls precautions and requirements are observed as directed by RP personnel and the RWP.

**RESTORATION**

Valve restoration positions will be the same as the placement configurations (TAG REMOVED).  
Retoration shall be performed per OI 50.

When restoring 1P-2C to service, ensure the pump is valved in slowly to avoid excessive RCP labyrinth seal differential pressure fluctuations.

Also, notify the Control Room that a small VCT level decrease is expected when the charging pump is restored.

**Clearance Attributes:**

Attribute Description	Attribute Value
Tech Specs	NONE
TRM	YES - see Isolation Notes
ODAM/ODCM/RECM	N
FP Impairment/App R	N
Single Valve Isolation	YES
WM-AA-1000 Risk Assessment	MEDIUM
PRA Equipment Affected	Y
Stored Energy Release Test (Mech)	YES - see Isolation Notes
Stored Energy Release Test (Elec)	YES - see Isolation Notes
Drained Instrument	N
Shiftly Holder Signoff Required	YES
Temp Mod	N
Affected Train	B
Affected Annunciators	N
Exception Clearance	NO
Containment Integrity Affected	NO
Switchyard Tagging Involved	NO
Operating Permit Used	NO
Attachment 12 Holder Tracking	NO
Work Week	1921

**Work Order Task List:**

**Clearance Verification:**

Status	Description	Name	Verification Date
Prepared	Prepared	Dunphy, Pat	4/23/2019 10:12:06
Reviewed	Reviewed		
Authorized	Authorized		



*Clearance Coversheet*

*Point Beach Nuclear Plant*

*Clearance Folder: ONLINE*

*Clearance: 1 CV P-2C MM*

*03*

*4/23/2019 10:18:10*

Status	Description	Name	Verification Date
Hung	Hung		
Removal Prepared	Removal Prepared		
Removal Reviewed	Removal Reviewed		
Removal Authorized	Removal Authorized		
Removed	Removed		

Clearance Tag List  
 Clearance Folder: ONLINE  
 03  
 -- FOR REFERENCE / WALKDOWN ONLY --  
 BOUNDARY SHEET -  
 4/23/2019 10:18:20

Tag Type	Equipment	Equipment Description	Equipment Location	Plac. Seq	Plac. Configuration	Notes	Place. 1st Verif. Date/Time	Place. 2nd Verif. Date/Time	Rest/Seq	Rest/Config. (If Diff.)	Rest. 1st Verif. Date/Time	Rest. 2nd Verif. Date/Time
Non-Tag	1P-2C-CS	1P-2C CHARGING PUMP CONTROL SWITCH	44/CB/CR 1C-04	1	PULLOUT							
Danger	1B29-P-2A	1P-2A Charging Pump Disconnect		2	OFF							
Comment	COMMENT STEP		8/PAB/U1 CHG PUMP AREA	3	Isolate 1P-2C per OI 50 Charging Pump Isolation.							
Danger	1CV-279C	1P-2C CHARGING PUMP SUCTION 1T-4 VCT RETURN	8/PAB/U1 CHG PUMP RM	4	SHUT							
Danger	2CV-399	2P-2C CHARGING PUMP SUCTION	8/PAB/U1 CHG PUMP RM	4	SHUT							
Danger	1CV-290	1P-2C CHARGING PUMP DISCHARGE	8/PAB/U1 CHG PUMP RM	4	SHUT							
Danger	1CV-291	1P-2C CHG PUMP DISCH 1F-39A/B SEAL INJ FLTR INLET	8/PAB/U1 CHG PUMP RM	4	SHUT							
Danger	1CV-262C	1P-2C CHG PUMP DISCHARGE HEADR DRAIN FIRST OFF ISOL	8/PAB/U1 CHG PUMP RM	4	SHUT							

-- FOR REFERENCE / WALKDOWN ONLY --

Clearance Tag List  
 Clearance Folder: ONLINE  
 Clearance: 1 CV P-2C MM  
 03  
 -- FOR REFERENCE / WALKDOWN ONLY --  
 BOUNDARY SHEET -  
 -- FOR REFERENCE / WALKDOWN ONLY --

Tag Type	Equipment	Seq	Plac	Date	Date	Rest	Rest	Date	Date
Serial No.	Description	Configuration	1st Verif	2nd Verif	Seq	Config.	1st Verif	2nd Verif	
	Location	Notes	Date/Time	Date/Time	* As Left (if Diff.)	Date/Time	Date/Time		
Danger	1CV-262F	5	OPEN						
	* 1P-2C CHG PUMP DISCHARGE HEADER DRAIN SECOND OFF ISOL								
	* 8/PAB/UI CHG PUMP RM								
Danger	1CV-274C	5	OPEN						
	* 1P-2C CHARGING PUMP CASING VENT								
	* 8/PAB/UI CHG PUMP RM								
Danger	1CV-231C	5	OPEN						
	* 1P-2C CHARGING PUMP SUCTION DRAIN								
	* 8/PAB/UI CHG PUMP RM								
Component Note No. 123 IF SUCTION MANIFOLD MAINTENANCE IS BEING PERFORMED, THEN NON-TAG THIS VALVE.									
ICV-231C									
ICV-231C									
ICV-262C									
ICV-262F									
ICV-274C									
ICV-279C									
ICV-290									
ICV-291									
1P-2C-CS									
ZCV-399									
Annotations ICV-290 *PACKING SIZE: 7/8" ID X 1-3/8" OD X 1/4 SQUARE ICV-291 *PACKING SIZE: 7/8" ID X 1-3/8" OD X 1/4 SQUARE 1P-2C-CS CR NUMBER N064GREEN, WHITE AND RED INDICATING LIGHTS.									

-- FOR REFERENCE / WALKDOWN ONLY --

**TURNOVER SHEET****INITIAL CONDITIONS:**

- You are the relief crew SRO assigned to the Work Control Center. 1P-2C, Unit 1 Charging Pump, needs to be isolated per OI-50, Charging Pump Isolation and danger tagged for maintenance activities.

**INITIATING CUES:**

- You are to review the Clearance Order provided for adequacy.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



# JOB PERFORMANCE MEASURE

**JPM TITLE:** Remove an RMS Channel from Service

**JPM NUMBER:** PBN JPM P119.903d.SRO **REV. 0**

**TASK NUMBER(S) / TASK TITLE(S):** P119.903 SRO Evaluate RMS abnormalities

**K/A NUMBERS:** 2.3.13 **K/A VALUE:** 3.4 / 3.8

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:   
Simulator:  Other:   
Lab:

Time for Completion: 30 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

<b>Developed by:</b> <u>Andrew Zommers</u>	_____	_____
	Instructor/Developer	Date
<b>Reviewed by:</b> _____	_____	_____
	Instructor (Instructional Review)	Date
<b>Validated by:</b> _____	_____	_____
	SME (Technical Review)	Date
<b>Approved by:</b> _____	_____	_____
	Training Supervision	Date
<b>Approved by:</b> _____	_____	_____
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

<b>REVIEW STATEMENTS</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}





## **SIMULATOR SET-UP:**

### **SIMULATOR SETUP INSTRUCTIONS:**

N/A

### **SIMULATOR MALFUNCTIONS:**

N/A

### **SIMULATOR OVERRIDES:**

N/A

### **SIMULATOR REMOTE FUNCTIONS:**

N/A

### **Required Materials:**

PBF-2068g DAM 8 RE-230/230B Waste Water Effluent, RE-223/223B Waste Distillate Tank Liquid, RE-135 SFP High Range, RE-110 SI Pump Low Range, RE-111 C-59 Panel, RE-113 –El. 19' PAB Central, RE-112 El. 8' PAB Central (modified for JPM performance – applicable section of remarks removed)

Offsite Dose Calculation Manual (ODCM)

EPMP 9.0 Equipment Important to Emergency Preparedness

RMSASRB's

- RMSASRB CI RE-223, Waste Distillate Tank Overboard Monitor
- RMSASRB CI RE-223B, RE-223 Background Monitor
- RMSASRB CI RE-230, Waste Water Effluent Monitor
- RMSASRB CI RE-230B, RE-230 Background Monitor
- RMSASRB CI RE-135, SFP Area High Range Monitor

Technical Requirements Manual (TRM)

### **General References:**

PBF-2068g DAM 8 RE-230/230B Waste Water Effluent, RE-223/223B Waste Distillate Tank Liquid, RE-135 SFP High Range, RE-110 SI Pump Low Range, RE-111 C-59 Panel, RE-113 –El. 19' PAB Central, RE-112 El. 8' PAB Central

RMSASRB's

Offsite Dose Calculation Manual (ODCM)

EPMP 9.0 Equipment Important to Emergency Preparedness

Technical Requirements Manual (TRM)

### **Task Standards:**

Identify compensatory actions required with DAM 8 removed from service per PBF-2068g DAM 8 RE-230/230B Waste Water Effluent, RE-223/223B Waste Distillate Tank Liquid, and RE-135 SFP High Range.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- You are the Unit 1 OS with both plants operating in Mode 1.
- A discharge of the Wastewell is in progress through F-235 and F-236 Waste Water Effluent Filters per OI 165, Operation of Waste Water Effluent Filters.
- A discharge of the T-104B Waste Distillate Tank is in progress through RE-223 Waste Distillate Tank Liquid per OI 140B, Standard Radioactive Batch Liquid Release – Waste Distillate Tanks.
- The 3<sup>rd</sup> RO just reported that DAM 8 has failed.

**INITIATING CUES:**

- OS2 has been directed to take actions for channels RE-110 SI Pump Low Range, RE-111 C-59 Panel, RE-113 –El. 19' PAB Central, RE-112 El. 8' PAB Central, and will update the applicable portions of the form.
- The Shift Manager has directed you to remove DAM 8 from service per PBF-2068g DAM 8 for RE-230/230B Waste Water Effluent, RE-223/223B Waste Distillate Tank Liquid, and RE-135 SFP High Range.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



**JPM PERFORMANCE INFORMATION**

Start Time: \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**NOTE:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<b>Performance Step: 1</b> <b>Critical N</b>	Determine Channel Number.
<b>Standard:</b>	Verify correct channel number on PBF-2068g. [DAM-8]
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 2</b> <b>Critical N</b>	Determine Channel Name/Location.
<b>Standard:</b>	Verify correct Channel Name/Location on PBF-2068g. DAM 8 RE-230/230B Waste Water Effluent, RE-223/223B Waste Distillate Tank Liquid, RE-135 SFP High Range, RE-110 SI Pump Low Range, RE-111 C-59 Panel, RE-113 –El. 19’ PAB Central, RE-112 El. 8’ PAB Central
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	



<b>Performance Step: 3 Critical N</b>	Determine if TS, ODCM, or E-Plan applicable.
<b>Standard:</b>	Verify ODCM, TRM and E-Plan is applicable for DAM-8.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 4 Critical N</b>	Determine applicable sections of TS, ODCM or E-Plan.
<b>Standard:</b>	Verify listed references on PBF-2068g DAM-8.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

<b>Performance Step: 5 Critical Y</b>	Determine redundant channel or compensatory action required. If required, then list below (otherwise mark N/A)
<b>Standard:</b>	Determine compensatory measures are required and document on the form for RE-230/230B.
<b>Evaluator Note:</b>	<p><b>EPMP 9.0 Attachment A perform 12-hour grab samples to ensure &lt; RU 1.2 threshold can be identified.</b></p> <p><b>Acknowledge as Chem/RP if contacted for grab samples. This is a critical portion of this step, and is also tracked in JPM Step 9 if done later.</b></p> <p><b>ODCM Note 5 table 6-2 requires 12-hour grab samples, if the discharge is to continue.</b></p>
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	



<b>Performance Step: 6</b> <b>Critical <u>Y</u></b>	Determine redundant channel or compensatory action required. If required, then list below (otherwise mark N/A)
<b>Standard:</b>	Determine compensatory measures are required and document on the form for RE-223/223B.
<b>Evaluator Note:</b>	<p><b>EPMP 9.0 Attachment A, lists 1(2)RE-229 as backup monitors. This is not critical for this JPM.</b></p> <p><b>ODCM Note 1 table 6-2 requires securing the T-104B discharge. This is the critical determination.</b></p> <p><b>TRM 3.3.1 Instrumentation Action conditions A and B should be entered per Table 3.3.1-1. Action Condition B secures the T-104B discharge immediately. This is the critical determination.</b></p>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 7</b> <b>Critical <u>N</u></b>	Determine redundant channel or compensatory action required. If required, then list below (otherwise mark N/A)
<b>Standard:</b>	Determine compensatory measures are required and document on the form for RE-135.
<b>Evaluator Note:</b>	<p><b>EPMP 9.0 Attachment A RE-105 to ensure &lt; RU 2.1, RU 2.2, RA 2.1, and RA 3.2 thresholds monitored or establish a portable monitor with remote indication to trigger an alarm.</b></p> <p><b>ODCM – No actions.</b></p>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



<b>Performance Step: 8 Critical N</b>	Determine time channel may be out of service.
<b>Standard:</b>	Verify 30 days is the most time limiting requirement for taking RE-223 and RE-230 OOS per the ODCM step 13.3.2.
<b>Evaluator Note:</b>	<b>ODCM step 13.3.2: If fewer than the minimum number of radioactive effluent monitoring channels are functional, the action statement listed in Table 6-2 shall be taken. Best effort shall be made to return an non-functional channel to operable status within 30 days.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 9 Critical Y</b>	Name(s) of Chem and/or RP supervision contacted.
<b>Standard:</b>	Notified personnel from RP and Chemistry to initiate grab samples.
<b>Evaluator Note:</b>	<b>The critical portion of this step is to contact Chemistry if not already done previously.</b>
<b>Evaluator Cue:</b>	<b>Shift Chemistry Technician has been notified. Shift RP Technician has been notified.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



<b>Performance Step: 10 Critical N</b>	If required, notify Regulatory Affairs of potential Reportability requirements.
<b>Standard:</b>	List name of Regulatory Affairs person notified.
<b>Evaluator Note:</b>	<b>Regulatory Affairs is not required until the 30 day notification is sent out.</b>
<b>Evaluator Cue:</b>	<b>If asked, the on call Regulatory Affairs person has been contacted.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 11 Critical N</b>	Name(s) of Emergency Plan staff contacted (at earliest convenience):
<b>Standard:</b>	List names of contacted personnel from E-Plan.
<b>Evaluator Cue:</b>	<b>The on call Emergency Plan staff person has been notified.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	



<b>Performance Step: 12 Critical N</b>	SM authorization to remove the channel from service or acknowledgment that the channel has failed:
<b>Standard:</b>	Have Shift Manager acknowledge that DAM 8 RE-230/230B Waste Water Effluent, RE-223/223B Waste Distillate Tank Liquid, RE-135 SFP High Range, RE-110 SI Pump Low Range, RE-111 C-59 Panel, RE-113 –El. 19’ PAB Central, RE-112 El. 8’ PAB Central has failed.
<b>Evaluator Note:</b>	<b>The examinee may request the SM initials to be filled out. Initial the block as the SM in order to complete the JPM.</b>
<b>Evaluator Cue:</b>	<b>Shift Manager acknowledges your report.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	

<b>Performance Step: 13 Critical N</b>	Channel placed into Maintenance or other mode:
<b>Standard:</b>	DAM may or may not be placed in maintenance.
<b>Evaluator Cue:</b>	<b>If asked to, the RO will place DAM 8 in maintenance.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	





<b>Performance Step: 14 Critical N</b>	Reason the channel was removed from service (circle one):
<b>Standard:</b>	DAM 8 failure circled.
<b>Performance:</b>	<b>SATISFACTORY</b> _____ <b>UNSATISFACTORY</b> _____
<b>Comments:</b>	

**Terminating Cues:**      The JPM is complete

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:** \_\_\_\_\_



**TURNOVER SHEET****INITIAL CONDITIONS:**

- You are the Unit 1 OS with both plants operating in Mode 1.
- A discharge of the Wastewell is in progress through F-235 and F-236 Waste Water Effluent Filters per OI 165, Operation of Waste Water Effluent Filters.
- A discharge of the T-104B Waste Distillate Tank is in progress through RE-223 Waste Distillate Tank Liquid per OI 140B, Standard Radioactive Batch Liquid Release – Waste Distillate Tanks.
- The 3<sup>rd</sup> RO just reported that DAM 8 has failed.

**INITIATING CUES:**

- OS2 has been directed to take actions for channels RE-110 SI Pump Low Range, RE-111 C-59 Panel, RE-113 –El. 19' PAB Central, RE-112 El. 8' PAB Central, and will update the applicable portions of the form.
- The Shift Manager has directed you to remove DAM 8 from service per PBF-2068g DAM 8 for RE-230/230B Waste Water Effluent, RE-223/223B Waste Distillate Tank Liquid, and RE-135 SFP High Range.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**



**JOB PERFORMANCE MEASURE**

**JPM**

**This JPM has been excluded from Public Disclosure due to  
Proprietary/Security Content**



# JOB PERFORMANCE MEASURE Substituted for Lohse-RO; Admin 2

**JPM TITLE:** Determination of Maximum Venting Time Attachment B

**JPM NUMBER:** PBN JPM P000.002f.COT **REV. 1**

**TASK NUMBER(S) / TASK TITLE(S):** P000.002.COT / Vent Reactor Vessel Head Following an Accident

**K/A NUMBERS:** 2.1.25 **K/A VALUE:** 3.9/4.2

**Justification (FOR K/A VALUES <3.0):** N/A

**TASK APPLICABILITY:**

RO  SRO  STA  Non-Lic  SRO CERT  OTHER: \_\_\_\_\_

**APPLICABLE METHOD OF TESTING:** Simulate/Walkthrough:  Perform:

**EVALUATION LOCATION:** In-Plant:  Control Room:   
 Simulator:  Other:   
 Lab:

Time for Completion: 10 Minutes Time Critical: No

Alternate Path [NRC]: No  
Alternate Path [INPO]: No

<b>Developed by:</b> <u>Jeffrey A. Hinze</u>	_____	_____
	Instructor/Developer	Date
<b>Reviewed by:</b> _____	_____	_____
	Instructor (Instructional Review)	Date
<b>Validated by:</b> _____	_____	_____
	SME (Technical Review)	Date
<b>Approved by:</b> _____	_____	_____
	Training Supervision	Date
<b>Approved by:</b> _____	_____	_____
	Training Program Owner	Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.**

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

**Protected Content:** (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**PBN JPM P000.002f.COT, Determination of Maximum Venting  
Time Attachment B, Rev. 1**

JPM  
Page 3 of 9

**UPDATE LOG:** Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1000) made to the material after initial approval.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	New JPM.				
Rev. 1	Updated for 2019 ILT NRC Exam.				

**SIMULATOR SET-UP:** *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

- 1.
- 2.

SIMULATOR MALFUNCTIONS:

SIMULATOR OVERRIDES:

SIMULATOR REMOTE FUNCTIONS:

**Required Materials:** CSP-I.3 Unit 1 Yellow, Response to Voids in Reactor Vessel, Attachment B  
CSP-I.3 Unit 1 Yellow, Response to Voids in Reactor Vessel, Figures 1-4  
Calculator

**General References:** CSP-I.3 Unit 1 Yellow, Response to Voids in Reactor Vessel

**Task Standards:** Complete Attachment B of CSP-I.3 Unit 1 Yellow , Response to Voids in Reactor Vessel



I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- Unit 1 experienced a Large Break LOCA
- EOP-0, Reactor Trip or Safety Injection, EOP-1.3, Transfer to Containment Sump Recirculation – Low Head Injection, were completed
- The crew is currently implementing EOP-1, Loss of Reactor or Secondary Coolant, and CSP-I.3, Response to Voids in Reactor Vessel
- Unit 1 Containment hydrogen concentration is 1.5%
- Unit 1 RCS pressure is 200 psig
- OS1 is currently implementing step 17 of CSP-I.3, Response to Voids in Reactor Vessel which directs performance of Attachment B, Determination of Maximum Venting Time

**INITIATING CUES (IF APPLICABLE):**

- OS1 directs you to perform Attachment B, Determination of Maximum Venting Time, of CSP-I.3 Unit 1 Yellow.

**NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.**

**JPM PERFORMANCE INFORMATION**

**Start Time:** \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**NOTE:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<b>Performance Step: 1</b> <b>Critical <u>Y</u></b>	<b>Step B1 - Record “A”, maximum hydrogen that can be vented per Figure 2.</b>
<b>Standard:</b>	<b>Determines the maximum hydrogen that can be vented per Figure 2, “A” = 9700 ft<sup>3</sup> ± 125 ft<sup>3</sup> (9575 - 9825 ft<sup>3</sup>)</b>
<b>Evaluator Cue:</b>	<b>If notified of condition acknowledge report and ask student to continue with performance of Attachment B.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	_____

<b>Performance Step: 2</b> <b>Critical <u>Y</u></b>	<b>Step B2 - Determine “B”, hydrogen flow rate as a function of RCS pressure per Figure 3.</b>
<b>Standard:</b>	<b>Determines the hydrogen flow rate as a function of RCS pressure per Figure 3, “B” = 350 scfm ± 25 scfm (325 - 375 scfm)</b>
<b>Evaluator Cue:</b>	<b>If notified of condition acknowledge report and ask student to continue with performance of Attachment B.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	_____

<b>Performance Step: 3 Critical <u>Y</u></b>	<b>Step B3 - Calculate "C", maximum vent time (in minutes) equal to "A" divided by "B"</b>
<b>Standard:</b>	<b>Determines "C", maximum vent time (in minutes) = 27.7 minutes (allowable limit: 25.5 - 30.2 minutes)</b>
<b>Evaluator Note:</b>	<b>Three minutes for venting time is based on maximum deviation of information obtained from figure 1 and 2 that meet the acceptance criteria of previous JPM steps.</b>
<b>Evaluator Cue:</b>	<b>If notified of condition acknowledge report</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	_____

<b>Performance Step: 4 Critical <u>N</u></b>	<b>Reports that Attachment B of CSP-I.3 is complete.</b>
<b>Standard:</b>	<b>Reports to OS1 that Attachment B of CSP-I.3 is complete</b>
<b>Evaluator Cue:</b>	<b>Acknowledge report of completion of Attachment B and any information provided.</b>
<b>Performance:</b>	<b>SATISFACTORY _____ UNSATISFACTORY _____</b>
<b>Comments:</b>	_____

**Terminating Cues:**      **This completes the JPM**

**NOTE:** Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

**Stop Time:**      \_\_\_\_\_



**TURNOVER SHEET**

**INITIAL CONDITIONS:**

- Unit 1 experienced a Large Break LOCA
- EOP-0, Reactor Trip or Safety Injection, EOP-1.3, Transfer to Containment Sump Recirculation – Low Head Injection, were completed
- The crew is currently implementing EOP-1, Loss of Reactor or Secondary Coolant, and CSP-I.3, Response to Voids in Reactor Vessel
- Unit 1 Containment hydrogen concentration is 1.5%
- Unit 1 RCS pressure is 200 psig
- OS1 is currently implementing step 17 of CSP-I.3, Response to Voids in Reactor Vessel which directs performance of Attachment B, Determination of Maximum Venting Time

**INITIATING CUES (IF APPLICABLE):**

- OS1 directs you to perform Attachment B, Determination of Maximum Venting Time, of CSP-I.3 Unit 1 Yellow.