

TASK TITLE: Perform Shutdown Margin Calculation

JPM No.: R-103

REV: 20070301

Task No.: R-RK-005

K/A No.: 2.1.25

Objective No.: 4.C.GP-03

K/A IMP: 2.8/3.1

EXAMINEE: \_\_\_\_\_

RO

EVALUATOR: \_\_\_\_\_

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

The Examinee: PASSED \_\_\_\_\_ this JPM.  
FAILED \_\_\_\_\_

TIME STARTED: \_\_\_\_\_

TIME FINISHED: \_\_\_\_\_

JPM TIME: \_\_\_\_\_ MINUTES

CRITICAL ELEMENTS: (\*) 3, 4, 5, 6

APPROX COMPLETION TIME: 20 MINUTES

CRITICAL TIME: 45 minutes

EVALUATION METHOD:

LOCATION:

☒ PERFORM

☒ IN PLANT

☐ SIMULATE

☐ SIMULATOR

GENERAL REFERENCES:

1. 2BwOSR 3.1.1.1-2, UNIT TWO SHUTDOWN MARGIN SURVEILLANCE DURING OPERATION, Rev. 1.
2. BwCB-2, BRAIDWOOD CURVE BOOK, UNIT 2.
3. CORE OPERATING LIMITS REPORT (COLR) FOR BRAIDWOOD UNIT 2 CYCLE 13.

MATERIALS:

1. Copy of 2BwOSR 3.1.1.1-2, Rev. 1.
2. Copy of BwCB-2.
3. Copy of Braidwood Technical Requirements Manual (TRM)

TASK STANDARDS:

1. Correctly determine total rod worth due to rods.
2. Correctly determine actual reactivity available due to rods.
3. Correctly determine current power defect.
4. Correctly determine shutdown margin is unacceptable for current plant conditions within 45 minutes.

TASK CONDITIONS:

1. **This is a time critical JPM.**
2. You are an extra NSO.
3. Unit 2 is at 100% power with the following conditions:
  - a. Control Bank D is at 215 steps, Unit 2 burn up is 6,500 EFPH, RCS Tave is 581°F and RCS Boron concentration is 950 ppm from a sample obtained one hour ago.
  - b. 15 minutes ago, control rods D-4 and M12 were determined to be inoperable and immovable. The QNE has been informed.

INITIATING CUES:

1. The Unit 2 Unit Supervisor has directed you to perform 2BwOSR 3.1.1.1-2, UNIT TWO SHUTDOWN MARGIN SURVEILLANCE DURING OPERATION, in accordance with Tech Spec 3.1.4. Condition A.  
**CUE: Hand examinee copy of 2BwOSR 3.1.1.1-2.**
2. Inform the Unit 2 Unit Supervisor when you have completed 2BwOSR 3.1.1.1-2.

RECORD START TIME: \_\_\_\_\_

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
	<b>EVALUATOR NOTE: JPM may be performed in plant or in classroom.</b>		
1.	<p>Refer to 2BwOSR 3.1.1.1-2:</p> <p><b>NOTE: Critical Time begins when examinee understands initiating cue and accepts responsibility for task performance.</b></p> <p><b>Record critical time start time:</b></p> <p>_____</p> <p><b>CUE: All Prerequisites, Precautions, Limitations and Actions are met.</b></p>	Refer to 2BwOSR 3.1.1.1-2:	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>
2.	Record Present Conditions: (step F.1)	<p>Determine and record the following from initiating cue:</p> <ul style="list-style-type: none"> <li>• Date and Time: <u>Current Date and Time</u></li> <li>• Core Average Burnup: <u>6,500 EFPH</u></li> <li>• Core Average Temperature: <u>581°F</u></li> <li>• Power Level: <u>100%</u></li> <li>• Present Boron Concentration: <u>950 ppm</u></li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*3.	<p><b>Determine total worth due to rods (step F.2)</b></p> <p><b>CUE:</b> When examinee locates curve book, provide the attached curves.</p> <p><b>NOTE:</b> Examinee may refer to BwCB-2, Figure 2c for an expanded scale of Figure 2 control bank D rod worth.</p> <p><b>NOTE:</b> Examinee must refer to correct figure and burn up range. BwCB-2, Figures 2 &amp; 2c are for Hot Full Power and Figures 2a and 2d are for Hot Zero Power. From initiating cue, Unit 2 is at 100% power.</p> <p><b>NOTE:</b> Record Examinee Value of control bank D inserted worth:</p> <p>_____</p> <p>(10 pcm <math>\pm</math> 10 pcm)</p> <p><b>NOTE:</b> Record Examinee Value of control bank D total worth:</p> <p>_____</p> <p>(3329.4 pcm)</p> <p><b>NOTE:</b> Record Examinee Value of control bank D available worth:</p> <p>_____</p> <p>(3319.4 pcm <math>\pm</math> 10 pcm)</p> <p><b>NOTE:</b> Record Examinee Value of shutdown bank total worth:</p> <p>_____</p> <p>(3458.5 pcm)</p> <p><b>NOTE:</b> Record Examinee Value of total rod worth:</p> <p>_____</p> <p>(6777.9 pcm <math>\pm</math> 10 pcm)</p>	<p>Determine and record total worth due to rods by performing the following:</p> <ul style="list-style-type: none"> <li>Record control bank position: <u>Bank D @ 215 steps</u> (from initiating cue).</li> <li>Determine and record control bank D inserted worth by performing the following: <ul style="list-style-type: none"> <li>Refer to BwCB-2, Figure 2 for burn up range of 4,850.1 – 7544.6 EFPH.</li> <li>Record control bank D inserted worth: <u>10 pcm <math>\pm</math> 10 pcm.</u></li> </ul> </li> <li>Determine and record total available control bank worth by performing the following: <ul style="list-style-type: none"> <li>Refer to BwCB-2, Table 4-1 for control bank worth for burn up range of 4850.1 - 9449.4 EFPH.</li> <li>Determine control bank total worth: <u>3329.4 pcm.</u></li> <li>Subtract control bank D inserted worth from control bank total worth: <u>3329.4 pcm – 10 pcm (<math>\pm</math> 10 pcm) = 3319.4 pcm (<math>\pm</math> 10 pcm).</u></li> </ul> </li> <li>Determine and record total worth due to rods by performing the following: <ul style="list-style-type: none"> <li>Refer to BwCB-2, Table 4-1 for shutdown bank worth for burn up range of 4850.1 - 9449.4 EFPH.</li> <li>Determine shutdown bank total worth: <u>3458.5 pcm.</u></li> </ul> </li> <li>Determine total rod worth by performing the following: <ul style="list-style-type: none"> <li>Add shutdown bank total worth to available control bank worth: <u>3458.5 pcm + 3319.4 pcm (<math>\pm</math> 10 pcm) = 6777.9 pcm (<math>\pm</math> 10 pcm)</u></li> </ul> </li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*4.	<p><b>Determine actual reactivity available due to rods (step F.3)</b></p> <p><b>NOTE: Record Examinee Value of number of immovable and/or untrippable control rods:</b></p> <p>_____</p> <p>(2)</p> <p><b>NOTE: Record Examinee Value of highest stuck rod worth:</b></p> <p>_____</p> <p>(966.5 pcm)</p> <p><b>NOTE: Record Examinee Value of immovable/untrippable rod worth:</b></p> <p>_____</p> <p>(4000 pcm)</p> <p><b>NOTE: Record Examinee Value of actual reactivity available due to rods:</b></p> <p>_____</p> <p>(1811.4 pcm <math>\pm</math> 10 pcm)</p>	<p>Determine and record actual reactivity due to rods by performing the following:</p> <ul style="list-style-type: none"> <li>Record the number of immovable and/or untrippable control rods: <u>2</u> (from initiating cue)</li> <li>Determine and record highest stuck rod worth by performing the following: <ul style="list-style-type: none"> <li>Refer to BwCB-2, Table 4-1 for highest stuck rod worth for burn up range of 4850.1 - 9449.4 EFPH.</li> <li>Determine and record highest stuck rod worth: <u>966.5 pcm.</u></li> </ul> </li> <li>Determine immovable/untrippable rod worth by performing the following: <ul style="list-style-type: none"> <li>Multiply the number of immovable or untrippable control rods by 2000pcm: <u>2 X 2000 pcm = 4000 pcm.</u></li> </ul> </li> <li>Determine actual reactivity available due to rods by performing the following: <ul style="list-style-type: none"> <li>Subtract immovable/untrippable rod worth and highest stuck rod worth from total rod worth: <u>6777.9 pcm (<math>\pm</math> 10 pcm) - 4000 pcm - 966.5 pcm = 1811.4 pcm (<math>\pm</math> 10 pcm).</u></li> </ul> </li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>



	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*6.	<p><b>Perform Shutdown Margin Verification</b></p> <p><b>NOTE:</b> Record Examinee Value of available shutdown margin:</p> <p>_____</p> <p>(86.4 pcm ± 60 pcm)</p> <p><b>NOTE:</b> Record Examinee Value of minimum required shutdown margin:</p> <p>_____</p> <p>(1300 pcm)</p> <p>86.4 pcm ± 60 pcm &lt; 1300 pcm</p> <p><b>NOTE:</b> Critical Time ends when examinee completes surveillance or reports unacceptable shutdown margin.</p> <p>Record time that examinee reports unacceptable shutdown margin or completes surveillance: _____</p> <p>Critical time = _____ - _____</p> <p>(end time) (start time)</p> <p>≤ 45 minutes.</p> <p><b>CUE:</b> As US, acknowledge report of inadequate shutdown margin and/or completion of 2BwOSR 3.1.1.1-2.</p>	<p>VERIFY Shutdown Margin by performing the following:</p> <ul style="list-style-type: none"> <li>• Add total corrected rod worth to power defect:  <math display="block">\frac{1811.4 \text{ pcm } (\pm 10 \text{ pcm}) + - 1725 (\pm 50 \text{ pcm})}{\text{pcm } (\pm 60 \text{ pcm})} = 86.4 \text{ pcm } (\pm 60 \text{ pcm}).</math> </li> <li>• Refer to TRM for Unit 2 COLR.</li> <li>• Determine and record the Shutdown Margin Limit for Modes 1 and 2 from the COLR: <math>\frac{1.3\% \Delta k/k \times 1000 \text{ pcm/\% } \Delta k/k}{\text{pcm/\% } \Delta k/k} = 1300 \text{ pcm}.</math></li> <li>• Determine the available shutdown reactivity is less than the minimum required Shutdown Margin Limit:  <math display="block">\frac{86.4 \text{ pcm } (\pm 60 \text{ pcm})}{\text{pcm } (\pm 60 \text{ pcm})} &lt; 1300 \text{ pcm}</math> </li> <li>• Inform US shutdown margin is unacceptable.</li> <li>○ Inform US 2BwOSR 3.1.1.1-2 is complete.</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><u><b>Comments:</b></u></p>

CUE: THIS COMPLETES THIS JPM.

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

COMMENTS:

## JOB PERFORMANCE MEASURE

### TASK CONDITIONS:

1. **This is a time critical JPM.**
2. You are an extra NSO.
3. **Unit 2** is at 100% power with the following conditions:
  - a. Control Bank D is at 215 steps, Unit 2 burn up is 6,500 EFPH, RCS Tave is 581°F and RCS Boron concentration is 950 ppm from a sample obtained one hour ago.
  - b. 15 minutes ago, control rods D-4 and M-12 were determined to be inoperable and immovable. The QNE has been informed.

### INITIATING CUES:

1. The Unit 2 Unit Supervisor has directed you to perform 2BwOSR 3.1.1.1-2, UNIT TWO SHUTDOWN MARGIN SURVEILLANCE DURING OPERATION, in accordance with Tech Spec 3.1.4. Condition A.
2. Inform the Unit 2 Unit Supervisor when you have completed 2BwOSR 3.1.1.1-2.

TASK TITLE: Review Shutdown Margin Calculation

JPM No.: S-107

REV: 20070301

Task No.: S-AM-123

K/A No.: 2.1.33

Objective No.: 8E.AM-123

K/A IMP: 4.0

EXAMINEE: \_\_\_\_\_

SRO

EVALUATOR: \_\_\_\_\_

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

The Examinee: PASSED \_\_\_\_\_ this JPM.  
FAILED \_\_\_\_\_

TIME STARTED: \_\_\_\_\_

TIME FINISHED: \_\_\_\_\_

JPM TIME: \_\_\_\_\_ MINUTES

CRITICAL ELEMENTS: (\*) 4, 6, 7

APPROX COMPLETION TIME: 30 MINUTES

CRITICAL TIME: 45 minutes

EVALUATION METHOD:

LOCATION:

☒ PERFORM

☒ IN PLANT

☐ SIMULATE

☐ SIMULATOR

GENERAL REFERENCES:

1. 2BwOSR 3.1.1.1-2, UNIT TWO SHUTDOWN MARGIN SURVEILLANCE DURING OPERATION, Rev. 1.
2. BwCB-2, BRAIDWOOD CURVE BOOK, UNIT 2.
3. CORE OPERATING LIMITS REPORT (COLR) FOR BRAIDWOOD UNIT 2 CYCLE 13.

MATERIALS:

1. Copy of completed 2BwOSR 3.1.1.1-2, Rev. 1.
2. Copy of BwCB-2.
3. Copy of Braidwood Technical Requirements Manual (TRM)

TASK STANDARDS:

1. Determine actual reactivity due to rods incorrectly calculated.
2. Determine shutdown margin incorrectly performed.
3. Determine shutdown margin is unacceptable for current plant conditions within 45 minutes.
4. Determine boration required to be initiated within 1 hour of discovery of stuck control rod.
5. Determine plant shutdown to MODE 3 required to be completed within 6 hours of discovery of stuck control rod.

TASK CONDITIONS:

1. **This is a time critical JPM.**
2. You are the Unit 2 Unit Supervisor.
3. Unit 2 is at 100% power with the following conditions:
  - a. Control Bank D is at 215 steps, Unit 2 burn up is 6,500 EFPH, RCS Tave is 581°F and RCS Boron concentration is 950 ppm from a sample obtained one hour ago.
  - b. 15 minutes ago, control rods D-4 and M12 were determined to be inoperable and immovable. The QNE has been informed.

INITIATING CUES:

1. The Unit 2 Assist NSO has completed 2BwOSR 3.1.1.1-2, UNIT TWO SHUTDOWN MARGIN SURVEILLANCE DURING OPERATION.
2. The Shift Manager has directed you to perform the supervisory review of 2BwOSR 3.1.1.1-2.
3. Inform the Shift Manager when you have completed the review of 2BwOSR 3.1.1.1-2.



RECORD START TIME: \_\_\_\_\_

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
	<b>EVALUATOR NOTE: JPM may be performed in plant or in classroom.</b>		
1.	Refer to 2BwOSR 3.1.1.1-2 <b>NOTE: Critical Time begins when examinee understands initiating cue and accepts responsibility for task performance.</b> <b>Record critical time start time:</b> _____	Refer to 2BwOSR 3.1.1.1-2	SAT    UNSAT    N/A <u><b>Comments:</b></u>
2.	Review Present Conditions: (step F.1)	Review Present Conditions: (from initiating cue) <ul style="list-style-type: none"> <li>• Date and Time: <u>Current Date and Time</u></li> <li>• Core Average Burnup: <u>6,500 EFPH</u></li> <li>• Core Average Temperature: <u>581°F</u></li> <li>• Power Level: <u>100%</u></li> <li>• Present Boron Concentration: <u>950 ppm</u></li> </ul>	SAT    UNSAT    N/A <u><b>Comments:</b></u>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
3.	<p>Review total worth due to rods: (step F.2)</p> <p><b>CUE:</b> When examinee locates curve book, provide the attached curves.</p> <p><b>NOTE:</b> Examinee may refer to BwCB-2, Figure 2c for an expanded scale of Figure 2 control bank D rod worth.</p>	<p>Review total worth due to rods:</p> <ul style="list-style-type: none"> <li>• Verify control bank position: <u>Bank D @ 215 steps</u> (from initiating cue).</li> <li>• Verify control bank D inserted worth: <ul style="list-style-type: none"> <li>• Refer to BwCB-2, Figure 2 for burn up range of 4,850.1 – 7544.6 EFPH.</li> <li>• Verify control bank D inserted worth correct: <u>10 pcm.</u></li> </ul> </li> <li>• Verify total available control bank worth: <ul style="list-style-type: none"> <li>• Refer to BwCB-2, Table 4-1 for control bank worth for burn up range of 4850.1 - 9449.4 EFPH.</li> <li>• Verify control bank total worth: <u>3329.4 pcm.</u></li> <li>• Subtract control bank D inserted worth from control bank total worth: <u>3329.4 pcm – 10 pcm = 3319.4 pcm.</u></li> </ul> </li> <li>• Verify total worth due to rods: <ul style="list-style-type: none"> <li>• Refer to BwCB-2, Table 4-1 for shutdown bank worth for burn up range of 4850.1 - 9449.4 EFPH.</li> <li>• Verify shutdown bank total worth: <u>3458.5 pcm.</u></li> </ul> </li> <li>• Verify total rod worth: <ul style="list-style-type: none"> <li>• Add shutdown bank total worth to available control bank worth: <u>3458.5 pcm + 3319.4 pcm = 6777.9 pcm.</u></li> </ul> </li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*4.	<p><b>Review actual reactivity available due to rods: (step F.3)</b></p> <p><b>CUE:</b> When examinee discovers incorrect highest stuck rod worth has been recorded, instruct examinee to correct error and proceed with surveillance review.</p> <p><b>NOTE:</b> Record Examinee Value of highest stuck rod worth:</p> <p>_____</p> <p>(966.5 pcm)</p> <p><b>CUE:</b> When examinee discovers incorrect reactivity available due to rods (from previously recorded incorrect highest stuck rod worth recorded in step F.3.b), instruct examinee to correct error and proceed with surveillance review.</p> <p><b>NOTE:</b> Record Examinee Value of actual reactivity available due to rods:</p> <p>_____</p> <p>(1811.4 pcm)</p>	<p>Review actual reactivity due to rods:</p> <ul style="list-style-type: none"> <li>• Verify the number of immovable and/or untrippable control rods: <u>2</u> (from initiating cue)</li> <li>• Verify highest stuck rod worth: <ul style="list-style-type: none"> <li>• Refer to BwCB-2, Table 4-1 for highest stuck rod worth for burn up range of 4850.1 - 9449.4 EFPH.</li> <li>• Determine incorrect highest stuck rod worth (849.8) recorded in step F.3.b. <ul style="list-style-type: none"> <li>○ Inform NSO of incorrect rod worth entry.</li> </ul> </li> <li>• Enter correct highest stuck rod worth: <u>966.5 pcm</u></li> </ul> </li> <li>• Verify immovable/untrippable rod worth: <ul style="list-style-type: none"> <li>• Multiply the number of immovable or untrippable control rods by 2000pcm: <u>2 X 2000 pcm = 4000 pcm.</u></li> </ul> </li> <li>• Verify actual reactivity available due to rods: <ul style="list-style-type: none"> <li>• Subtract immovable/untrippable rod worth and highest stuck rod worth from total rod worth: <u>6777.9 pcm – 4000 pcm – 966.5 pcm = 1811.4 pcm.</u></li> </ul> </li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
5.	Determine current Power Defect: (step F.4)	<p>Verify current power defect for boron concentration and power level:</p> <ul style="list-style-type: none"> <li>Refer to BwCB-2, Figure 17A for power defect for burn up range of 4850 - 9449.4 EFPH.</li> <li>OR</li> <li>Refer to BwCB-2, Table 2-1 for power defect for burn up range of 6466.8 EFPH.</li> <li>Verify power defect: <u>-1733 pcm.</u></li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>
*6.	<p><b>Verify Shutdown Margin:</b> (step F.5)</p> <p><b>CUE:</b> When examinee discovers incorrect available shutdown margin, instruct examinee to correct error and proceed with surveillance review.</p> <p><b>NOTE:</b> Record Examinee Value of available shutdown margin:</p> <p>_____</p> <p>(78.4 pcm)</p> <p><b>CUE:</b> As Shift Manager, acknowledge report of completion of 2BwOSR 3.1.1.1-2.</p>	<p>Verify shutdown margin:</p> <ul style="list-style-type: none"> <li>Add total corrected rod worth to power defect: <math>1811.4 \text{ pcm} + -1733. = \underline{78.4 \text{ pcm.}}</math></li> <li>Determine shutdown margin calculation incorrectly performed (power defect value incorrectly added to total corrected rod worth instead of subtracted due to negative value to power defect). <ul style="list-style-type: none"> <li>Inform NSO of incorrect available shutdown margin entry.</li> </ul> </li> <li>Enter correct available shutdown margin: <u>78.4 pcm.</u></li> <li>Refer to TRM for Unit 2 COLR.</li> <li>Verify shutdown margin limit for Modes 1 and 2 from the COLR: <math>-1.3\% \frac{\Delta k/k \times 1000 \text{ pcm}}{\% \Delta k/k} = \underline{1300 \text{ pcm.}}</math></li> <li>Determine the available shutdown reactivity is less than the minimum required shutdown margin limit: <u><math>78.4 \text{ pcm} &lt; 1300 \text{ pcm}</math></u> <ul style="list-style-type: none"> <li>Inform Shift Manager 2BwOSR 3.1.1.1-2 is complete and acceptance criteria is not met.</li> </ul> </li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*7.	<p><b>Determine Tech Spec requirements.</b></p> <p><b>NOTE:</b> If examinee determines shutdown margin is inadequate, provide the following cue:</p> <p><b>CUE:</b> Shift Manager directs you to review Tech Specs for applicability with current plant conditions.</p> <p><b>NOTE:</b> Critical Time ends when examinee determines boration must be initiated.</p> <p><b>Record time that examinee determines boration required:</b></p> <p>_____</p> <p><b>Critical time =</b></p> <p>_____ - _____</p> <p><b>(end time) (start time)</b></p> <p><b>≤ 45 minutes.</b></p> <p><b>CUE:</b> As Shift Manager, acknowledge report of Tech Spec entry conditions and applicability.</p>	<p>Perform the following:</p> <ul style="list-style-type: none"> <li>• Determine Tech Spec 3.1.4, Condition A.1.2 applies for inadequate shutdown margin in mode 1 (initiate boration within 1 hour of discovery of stuck rods)</li> <li>• Determine Tech Spec 3.1.4, Condition A.2 applies for inadequate shutdown margin in mode 1 (be in MODE 3 within 6 hours of discovery of stuck rods)</li> <li>○ Notify Shift Manager of Tech Spec entry conditions and applicability.</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

**CUE: THIS COMPLETES THIS JPM.**

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

**COMMENTS:**

## JOB PERFORMANCE MEASURE

### TASK CONDITIONS:

1. **This is a time critical JPM.**
2. You are the Unit 2 Unit Supervisor.
3. Unit 2 is at 100% power with the following conditions:
  - a. Control Bank D is at 215 steps, Unit 2 burn up is 6,500 EFPH, RCS Tave is 581°F and RCS Boron concentration is 950 ppm from a sample obtained one hour ago.
  - b. 15 minutes ago, control rods D-4 and M12 were determined to be inoperable and immovable. The QNE has been informed.

### INITIATING CUES:

1. The Unit 2 Assist NSO has completed 2BwOSR 3.1.1.1-2, UNIT TWO SHUTDOWN MARGIN SURVEILLANCE DURING OPERATION.
2. The Shift Manager has directed you to perform the supervisory review of 2BwOSR 3.1.1.1-2.
3. Inform the Shift Manager when you have completed the review of 2BwOSR 3.1.1.1-2.

TASK TITLE: Perform Mode 5 Shiftly and Daily Operating Surveillance

JPM No.: R-107

REV: 20070301

Task No.: R-AM-064

K/A No.: 2.1.18

Objective No.: 4.C.AM-03

K/A IMP: 2.9/3.0

EXAMINEE: \_\_\_\_\_

RO SRO (Circle One)

EVALUATOR: \_\_\_\_\_

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

The Examinee: PASSED \_\_\_\_\_ this JPM.  
FAILED \_\_\_\_\_

TIME STARTED: \_\_\_\_\_

TIME FINISHED: \_\_\_\_\_

JPM TIME: \_\_\_\_\_ MINUTES

CRITICAL ELEMENTS: (\*) 2, 8, 9

APPROX COMPLETION TIME: 30 MINUTES

CRITICAL TIME: N/A

EVALUATION METHOD:

LOCATION:

☒ PERFORM

☐ IN PLANT

☐ SIMULATE

☒ SIMULATOR

GENERAL REFERENCES:

1. 1BwOSR 0.1-5, UNIT ONE MODE 5 SHIFTLY AND DAILY OPERATING SURVEILLANCE, Rev. 9.

MATERIALS:

1. Copy of partially completed 1BwOSR 0.1-5.
2. Red ink pen for annotating out of spec readings.

TASK STANDARDS:

1. Determine 1A SI Pump is not correctly aligned for current plant conditions.
2. Determine VCT level channel is failed low.
3. Determine BDPS is inoperable.

TASK CONDITIONS:

1. You are the Unit 1 NSO.
2. Unit 1 is in Mode 5.
3. 1BwGP 100-1, PLANT HEATUP, is in progress.
4. BOTH RH trains are operable.
5. The SHIFT TWO portion of 1BwOSR 0.1-5, MODE 5, SHIFTLY AND DAILY OPERATING SURVEILLANCE, is in progress.
6. Another NSO has completed 1BwOSR 0.1-5, data sheets D-2 thru D-4 and D-12 thru D-15. The NSO has also partially completed data sheets D-8 thru D-10.

INITIATING CUES:

1. The Unit 1 Unit Supervisor directs you to complete the SHIFT TWO portion of 1BwOSR 0.1-5 by performing the incomplete items on data sheets D-5 thru D-11.  
**CUE: Hand examinee copy of 1BwOSR 0.1-5.**
2. Another NSO will monitor the remainder of the Main Control Board panels and address alarms as necessary.
3. Inform the Unit 1 Unit Supervisor when you have completed 1BwOSR 0.1-5 data sheets D-5 thru D-11.

RECORD START TIME: \_\_\_\_\_

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
1.	<p>Refer to 1BwOSR 0.1-5:</p> <p><b>CUE: All Prerequisites, Precautions, Limitations and Actions are met.</b></p> <p><b>CUE: If asked, provide examinee copy of 0BwOSR 0.1-5 pages 1-7 (instructions section)</b></p>	<p>Refer to 1BwOSR 0.1-5:</p>	<p>SAT    UNSAT    N/A</p> <p><u><b>Comments:</b></u></p>
*2	<p><b>Determine 1A SI Pump is not properly aligned:</b> (Data Sheet D-5)</p> <p><b>CUE: If asked, 1A SI pump breaker is racked in.</b></p> <p><b>CUE: If asked, there are no manual valves closed in the 1A SI pump flowpath.</b></p> <p><b>CUE: If asked, 1B SI pump breaker is racked out.</b></p> <p><b>CUE: As Unit Supervisor, acknowledge report of 1A SI pump alignment, inform examinee LCO 3.4.12 (LTOP) will be addressed and another NSO will realign the 1A SI pump.</b></p>	<p>Perform the following at 1PM05J:</p> <ul style="list-style-type: none"> <li>○ Check Pressurizer level channels.</li> <li>○ Determine Pressurizer level is &gt; 5%. (≈ 28%)</li> <li>○ Check YES box on Data Sheet D-5.</li> </ul> <p>Perform the following at 1PM06J:</p> <ul style="list-style-type: none"> <li>• Determine 1A SI Pump status <ul style="list-style-type: none"> <li>• 1A SI pump breaker is racked in.</li> <li>• 1A SI pump C/S is in NAT.</li> <li>• 1A SI pump is aligned for cold leg injection.</li> <li>• 1A SI pump is capable of injecting to the RCS cold legs.</li> </ul> </li> <li>○ Notify Unit Supervisor 1A SI Pump is not in correct alignment.</li> <li>○ Check 1B SI Pump status: <ul style="list-style-type: none"> <li>○ 1B SI pump breaker is R/O.</li> </ul> </li> </ul> <p>Perform the following at 1PM05J:</p> <ul style="list-style-type: none"> <li>○ Check 1A CV pump status: <ul style="list-style-type: none"> <li>○ 1A CV pump is operating.</li> </ul> </li> <li>○ Check 1B CV pump status: <ul style="list-style-type: none"> <li>○ 1B CV pump breaker is R/O.</li> </ul> </li> <li>○ Determines Data Sheet D-6 is not required to be performed with PZR level &gt; 5%.</li> <li>○ Record SI and CV Pump status on Data Sheet D-5.</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><u><b>Comments:</b></u></p>



	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
3.	Check RH Pump discharge flow: (Data Sheet D-7)	Perform the following at 1PM06J: <ul style="list-style-type: none"> <li>• Check 1A RH Pump Discharge Flow on 1FI-618.</li> <li>• Record 1A RH Pump Flow on Data Sheet D-7.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
4.	Check RCS Temperature: (Data Sheet D-7)	Perform the following at 1PM05J: <ul style="list-style-type: none"> <li>• Check Cold Leg 1A-1D WR Temperature Indicators:               <ul style="list-style-type: none"> <li>• 1TI-413B (170°F - 180°F)</li> <li>• 1TI-423B (170°F - 180°F)</li> <li>• 1TI-433B (170°F - 180°F)</li> <li>• 1TI-443B (170°F - 180°F)</li> </ul> </li> <li>• Record RCS Cold Leg temperatures on Data Sheet D-7.</li> </ul> Perform the following at 1PM05J and 1PM6J: <ul style="list-style-type: none"> <li>• Determine lowest RCS temperature indication from RCS loops and operating RH train. (<math>\approx 175^{\circ}\text{F}</math>)</li> <li>• Record lowest RCS temperature on Data Sheet D-7.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
5.	Check RCS level: (Data Sheet D-8) <b>NOTE: Reduced inventory exists if Reactor Vessel level is <math>\leq 397'</math> (<math>&lt; 0\%</math> PZR level or approximately 55% RVLIS plenum level).</b>	Perform the following at 1PM05J: <ul style="list-style-type: none"> <li>• Determine RCS NOT in reduced inventory               <ul style="list-style-type: none"> <li>○ PZR level <math>\approx 28\%</math></li> <li>○ RVLIS Head and Plenum 100%</li> </ul> </li> <li>• Check NO box on Data Sheet D-8.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
6.	Check Source Range Instrumentation. (Data Sheet D-9)	Perform the following at 1PM05J: <ul style="list-style-type: none"> <li>• Check Source Range indications:               <ul style="list-style-type: none"> <li>• 1NI-31A (<math>\approx 10</math> cps)</li> <li>• 1NI-32A (<math>\approx 10</math> cps)</li> </ul> </li> <li>• Determine Source Range indications responding properly.</li> <li>• Check YES boxes on Data Sheet D-9.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
7.	Check RCS Loops: (Data Sheet D-10)	Perform the following at 1PM05J: <ul style="list-style-type: none"> <li>• Check RCP Status:               <ul style="list-style-type: none"> <li>• Determine 1D RCP is running.</li> <li>• Check 1D box on Data Sheet D-10.</li> </ul> </li> <li>• Check Loop Stop Valves open:               <ul style="list-style-type: none"> <li>• RCS flow indication.</li> <li>• ESF Isolation Valve light box on 1PM06J.</li> <li>• Check loops 1A – 1D HL and CL boxes on Data Sheet D-10.</li> </ul> </li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
*8	<b>Determine VCT level channel is inoperable:</b> (Data Sheet D-11)  <b>CUE: As Unit Supervisor, acknowledge report of 1LR-185 failure.</b>	Perform the following at 1PM05J: <ul style="list-style-type: none"> <li>• Check VCT Level               <ul style="list-style-type: none"> <li>• 1LI-112 (<math>\approx</math> 54%)</li> <li>• 1LR-185 (0%)</li> </ul> </li> <li>• Determine 1LR-185 is failed low.</li> <li>○ Record VCT level on Data Sheet D-11.               <ul style="list-style-type: none"> <li>○ Check YES box next to 1LI-112 on Data Sheet D-11.</li> </ul> </li> <li>• Check NO box next to 1LR-185 on Data Sheet D-11.</li> <li>○ Notify Unit Supervisor VCT Level Channel 1LR-185 is failed.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*9.	<p><b>Determine BDPS is inoperable:</b> (Data Sheet D-11)</p> <p><b>CUE: As Unit Supervisor, acknowledge report of BDPS inoperability and inform examinee LCO 3.3.9 will be addressed.</b></p>	<p>Perform the following at 1PM05J:</p> <ul style="list-style-type: none"> <li>○ Check BDPS Channel Selector Switches.</li> <li>○ Determine BDPS Channel Selector Switches are BOTH in NORMAL.</li> <li>○ Check YES boxes on Data Sheet D-11.</li> <li>• Verify BDPS Operability <ul style="list-style-type: none"> <li>• Determine &lt; 2 VCT level channels operable.</li> <li>○ Notify Unit Supervisor BDPS is NOT operable</li> </ul> </li> <li>○ Determine BDPS Channel Selector Switches are BOTH in NORMAL. <ul style="list-style-type: none"> <li>○ Check NORMAL box on Data Sheet D-11.</li> </ul> </li> <li>○ Determine one RCP running <ul style="list-style-type: none"> <li>○ Check <math>\geq 1</math> box on Data Sheet D-11.</li> </ul> </li> <li>○ Determine all 8 LSIVs are OPEN. <ul style="list-style-type: none"> <li>○ Check 8 box on Data Sheet D-11.</li> </ul> </li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

**CUE: THIS COMPLETES THIS JPM.**

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

**COMMENTS:**

## SIMULATOR SETUP INSTRUCTIONS

- Verify/perform TQ-BR-201-0113, BRAIDWOOD TRAINING DEPARTMENT SIMULATOR EXAMINATION SECURITY ACTIONS CHECKLIST.
- Establish the conditions of IC-3.
- Complete items on Simulator Ready for Training Checklist.
- Place simulator in RUN.
- Place Wide Range Iconics and RCS Heat up limitations on 1PM05J CRTs.
- Turn on scaler timer and verify audible SR counts.
- Provide examinees with red pen for circling out of spec readings.
- Energize SVAG valves by performing the following:
  - Place 480v feed to Bus 131X1A/X2A C/S to CLOSE
  - Place 480v feed to Bus 132X2A/X4A C/S to CLOSE
- Open 1SI8835, SI Pumps to Cold Legs Isolation Valve
- Place 1A SI Pump in NAT.
- Place C/O cards on 1B CV Pump C/S and 1B SI Pump C/S.
- Turn over or remove energized SVAG valve placards.
- Insert **IMF CV17 0** to fail VCT Level Channel 1LT-185 LOW.
- Depressurize the SI Accumulators by performing the following:
  - Set monitor item **SIMN2ACC[1] = 0**
  - Set monitor item **SIMN2ACC[2] = 0**
  - Set monitor item **SIMN2ACC[3] = 0**
  - Set monitor item **SIMN2ACC[4] = 0**
- **AT CONCLUSION OF JPM PERFORMANCE(S), PERFORM THE FOLLOWING:**
  - **VERIFY/REMOVE C/O CARDS FROM 1B CV PUMP C/S**
  - **VERIFY/REMOVE C/O CARDS FROM 1B SI PUMP**
  - **VERIFY/RESTORE SVAG VALVE PLACARDS**

COMMENTS:

## JOB PERFORMANCE MEASURE

### TASK CONDITIONS:

1. You are the Unit 1 NSO.
2. Unit 1 is in Mode 5.
3. 1BwGP 100-1, PLANT HEATUP, is in progress.
4. BOTH RH trains are operable.
5. The SHIFT TWO portion of 1BwOSR 0.1-5, MODE 5, SHIFTLY AND DAILY OPERATING SURVEILLANCE, is in progress.
6. Another NSO has completed 1BwOSR 0.1-5, data sheets D-2 thru D-4 and D-12 thru D-15. The NSO has also partially completed data sheets D-8 thru D-10.

### INITIATING CUES:

1. The Unit 1 Unit Supervisor directs you to complete the SHIFT TWO portion of 1BwOSR 0.1-5 by performing the incomplete items on data sheets D-5 thru D-11.
2. Another NSO will monitor the remainder of the Main Control Board panels and address alarms as necessary.
3. Inform the Unit 1 Unit Supervisor when you have completed 1BwOSR 0.1-5 data sheets D-5 thru D-11.

TASK TITLE: Hang Worker Tagout (1A FW Pump)

JPM No.: R-201

Task No.: R-AP-017

Objective No.: 4C.AP-04

REV: 20070301

K/A No.: 2.2.13

K/A IMP: 3.6

EXAMINEE: \_\_\_\_\_

RO

EVALUATOR: \_\_\_\_\_

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

The Examinee: PASSED \_\_\_\_\_ this JPM.  
FAILED \_\_\_\_\_

TIME STARTED: \_\_\_\_\_

TIME FINISHED: \_\_\_\_\_

JPM TIME: \_\_\_\_\_ MINUTES

CRITICAL ELEMENTS: (\*) 2, 3, 4a, 4b, 5a

CRITICAL TIME: NA

EVALUATION METHOD:

☒ PERFORM

☐ SIMULATE

LOCATION:

☐ IN PLANT

☒ SIMULATOR

GENERAL REFERENCES:

1. OP-AA-109-101, CLEARANCE AND TAGGING, Rev. 1.

MATERIALS:

1. Copy of partially completed Worker Tagout Form.
2. Worker Tagout cards.
3. Copy of Feedwater System prints.
4. Copy of OP-AA-109-101, Rev. 1.

TASK STANDARDS:

1. Determine wrong component is listed on Worker Tagout (WTO) checklist prior to hanging WTO card on 1A FW pump.
2. Determine the sequence of isolation points for 1A FW pump is incorrect prior to hanging WTO cards on 1A FW pump.
3. Correctly position 1A FW pump components for WTO.
4. Correctly sequence hanging of WTO.

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.

INITIATING CUES:

1. The Unit 1 Unit Supervisor has directed you to review and hang Worker Tagout (WTO) P07-100 on the 1A FW Pump.

**CUE: Hand examinee copy of Worker Tagout form.**

2. Equipment operators have been briefed and have a field copy of the WTO and are standing by in the field to assist you.
3. Another NSO will monitor the remainder of the Main Control Board panels and address alarms as necessary.
4. Inform the Unit 1 Unit Supervisor when you have completed the Worker Tagout.

RECORD START TIME: \_\_\_\_\_

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
1.	Refer to Worker Tagout Form Hang/Lift Section: <b>CUE: If asked, provide examinee copy of OP-AA-109-101</b>	Refer to Worker Tagout (WTO) Form Hang/Lift Section: <ul style="list-style-type: none"> <li>Review WTO Hang/Lift Section.</li> <li>Review Special Instructions.</li> </ul>	SAT    UNSAT    N/A <b><u>Comments:</u></b>
	<b>EVALUATOR NOTE:</b> The examinee may determine the clearance sequence is incorrect (JPM step 3) prior to determining the component is incorrect (JPM step 2), or the examinee may discover both errors simultaneously. The examinee must identify both errors to complete critical tasks 2 & 3.		
	<b>EVALUATOR NOTE:</b> The JPM contains corrected Worker Tagout checklist to be given to the examinee after the errors are identified. If the examinee first determines the incorrect component is listed on the Worker Tagout checklist prior to determining the incorrect sequence is listed, provide examinee JPM page 7. If the examinee first determines the incorrect sequence is listed on the Worker Tagout checklist, provide examinee JPM page 8. When the examinee has determined BOTH the incorrect component and sequence is listed on the Worker Tagout checklist, provide examinee JPM page 9.		
*2	<b>Determine the incorrect component is listed on the WTO:</b> <b>CUE: Acknowledge as Unit Supervisor and inform examinee the checklist and card will be corrected.</b> <b>CUE: Hand examinee corrected worker tagout and correct card (1FW01PA C/S) in accordance with the evaluator note above.</b>	Determine the incorrect component is listed on the WTO: <ul style="list-style-type: none"> <li>2A FW pump C/S is listed on checklist and card instead of 1A FW pump.</li> <li>Notify Unit Supervisor of component error.</li> </ul>	SAT    UNSAT    N/A <b><u>Comments:</u></b>
*3.	<b>Determine the clearance sequence for 1A FW Pump is incorrect.</b> <b>CUE: Acknowledge as Unit Supervisor and inform examinee the checklist will be corrected.</b> <b>CUE: Hand examinee corrected worker tagout in accordance with the evaluator note above.</b>	Determine the clearance hang sequence for 1A FW Pump is incorrect: <ul style="list-style-type: none"> <li>Clearance hang is sequenced in lift order.</li> <li>Notify Unit Supervisor of sequencing error.</li> </ul>	SAT    UNSAT    N/A <b><u>Comments:</u></b>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*4a.	Hang WTO on 1A FW Pump C/S:	Perform the following at 1PM04J: <ul style="list-style-type: none"> <li>• Place 1FW01PA, FW Pump 1A, C/S to PULL OUT.</li> <li>• Hang WTO card on 1FW01PA C/S.</li> <li>○ Place initials in HUNG BY block.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
*4b	Hang WTO on 1A FW Pump Aux Oil Pump C/S:	Perform the following at 1PM04J: <ul style="list-style-type: none"> <li>• Place 1FW01PA-B, FW Pump 1A Aux Oil Pump, C/S to PULL OUT.</li> <li>• Hang WTO card on 1FW01PA-B C/S.</li> <li>○ Place initials in HUNG BY block.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
*5a.	Hang WTO on 1A FW Pump Discharge Valve:	Perform the following at 1PM04J: <ul style="list-style-type: none"> <li>• Place 1FW002A, FW Pump 1A Discharge Valve, C/S to CLOSE.</li> <li>• Hang WTO card on 1FW002A C/S.</li> <li>○ Place initials in HUNG BY block.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
5b.	Hang WTO on 1A FW Pump Recirc Valve	Perform the following at 1PM04J: <ul style="list-style-type: none"> <li>• Hang WTO card on 1FW012A C/S.</li> <li>• Place initials in HUNG BY block.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>



	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
6.	Hang WTO on 1A FW Pump breakers: <b>CUE: In plant WTO steps are being performed by Don Doe (initials DD).</b> <b>CUE: 1A FW Pump Breaker is RACKED OUT and WTO card is hung.</b> <b>CUE: 1A FW Pump Aux Oil Pump Breaker is OFF and WTO card is hung.</b> <b>CUE: 1A FW Pump Motor Heater breaker is OFF and WTO card is hung.</b> <b>NOTE: Contact simulator operator to deenergize 1FW002A breaker and provide the following cue:</b> <b>CUE: 1FW002A breaker is OFF and WTO card is hung.</b>	Perform the following: Dispatch Equipment Operators to: <ul style="list-style-type: none"> <li>• R/O 1A FW pump breaker.</li> <li>• Turn off 1A FW Pump Aux Oil Pump Breaker.</li> <li>• Turn off 1A FW Pump Motor Heater Breaker.</li> <li>• Turn off 1FW002A, 1A FW Pump Discharge Valve, Breaker.</li> <li>• Hang WTO cards on FW Pump Breakers.</li> <li>• Place NLOs initials/examinee's initials in HUNG BY block.</li> </ul>	SAT    UNSAT    N/A <b><u>Comments:</u></b>
7.	Hang WTO on 1A FW Pump valves: <b>CUE: 1FW027A is closed and WTO card is hung.</b>	Perform the following: Dispatch Equipment Operators to: <ul style="list-style-type: none"> <li>• Close 1FW027A, FW Pump 1A Recirc Valve Manual Isolation Valve</li> <li>• Hang WTO card on 1FW027A.</li> <li>• Place NLOs initials/examinee's initials in HUNG BY block.</li> </ul>	SAT    UNSAT    N/A <b><u>Comments:</u></b>
8.	Inform Unit Supervisor 1A FW Pump WTO is complete. <b>CUE: As Unit Supervisor, acknowledge report.</b>	Perform the following: <ul style="list-style-type: none"> <li>• Inform Unit Supervisor 1A FW Pump WTO is complete.</li> </ul>	SAT    UNSAT    N/A <b><u>Comments:</u></b>

**CUE: THIS COMPLETES THIS JPM.**

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

**COMMENTS:**

## **SIMULATOR SETUP INSTRUCTIONS**

- Verify/perform TQ-BR-201-0113, BRAIDWOOD TRAINING DEPARTMENT SIMULATOR EXAMINATION SECURITY ACTIONS CHECKLIST.
- Establish the conditions of IC 21, 100% power, steady state, equilibrium xenon.
- Complete items on Simulator Ready for Training Checklist.
- Place simulator in RUN.
- Verify 1A FW pump is available.
- When examinee dispatches NLO to deenergize 1FW002A, perform the following:
  - Insert **IRF ED091C OFF** to deenergize 1FW002A.

COMMENTS:

## JOB PERFORMANCE MEASURE

### TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.

### INITIATING CUES:

1. The Unit 1 Unit Supervisor has directed you to review and hang Worker Tagout (WTO) P07-100 on the 1A FW Pump.
2. Equipment operators have been briefed and have a field copy of the WTO and are standing by in the field to assist you.
3. Another NSO will monitor the remainder of the Main Control Board panels and address alarms as necessary.
4. Inform the Unit 1 Unit Supervisor when you have completed the Worker Tagout.

**ATTACHMENT 14 PART 1**  
**WTO Form Hang/Lift Section**  
**Page 1 of 1**

Exceptional WTO: ☐

Mode Dependent: ☐

Condition Dependent: ☐

Production Risk: ☐

WORKER TAGOUT# **PO7-100** JOB DESCRIPTION: **CHANGE 1A MAIN FEEDWATER PUMP OIL**

WORKING DEPARTMENT: **MMD** W/O OR W/R: **12345** EQUIP. TAG# **1FW01PA**

COMPONENT DESCRIPTION: **1A MAIN FEEDWATER PUMP**

FIRST APPROVAL: Jim NSO DATE/TIME: Today/10 minutes ago

SECOND APPROVAL: Mike Operator DATE/TIME: Today/8 minutes ago

WTO AUTHORIZATION: Joe Supervisor DATE/TIME Today/2 minutes ago

SPECIAL INSTRUCTIONS: YES: ☒ NO: ☐ (IF YES SEE ATTACHMENT 14 PART 2)

EQUIP. TAG/EQUIPMENT NAME	SEQ	TAG TYPE	POSITION	HUNG BY	VERIF. BY	SFTY. VERIF.	RTS SEQ	RTS POSITION	RTS BY	VERIF. BY
1FW027A FW PUMP 1A RECIRC VALVE MANUAL ISOL VLV (401 K-11 +20')	1	RD	CLOSED		N/A		1	OPEN		N/A
1FW002A BKR FW PUMP 1A DSCH VLV BKR (133Z2 G3)	2	RD	OFF		N/A		2	ON		N/A
1FW01PA BKR FW PUMP 1A BKR (BUS 156 CUB 4)	2	RD	R/O		N/A		2	R/TEST		N/A
1FW01PA-B BKR FW PUMP 1A AUX OIL PUMP BKR (134Z2 CUB F1)	2	RD	OFF		N/A		2	ON		N/A
1FW01PA-A BKR FW PP 1A MOTOR HTR BKR (134Z2 G4)	2	RD	OFF		N/A		2	ON		N/A
1FW01PA C/S FW PUMP 1A C/S (1PM04J)	3	CD	PTL		N/A		3	NAT		N/A
1FW01PA-B C/S FW PUMP 1A AUX OIL PUMP C/S (1PM04J)	3	CD	PTL		N/A		3	NAT		N/A
1FW002A C/S FW PUMP 1A DISCH VALVE C/S (1PM04J)	3	CD	NAC		N/A		3	NAO		N/A
1FW012A C/S FW PUMP 1A RECIRC VALVE C/S (1PM04J)	3	CI	INFO		N/A		3	CLOSED		N/A

WTO PLACED: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

WTL COMPLETED WORK START: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

**WTO FINAL CLEAR:** WORK CREWMEMBER RELEASE: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

WTO CLEARED: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

(COPIES MAY BE MADE OF THIS FORM FOR ADDITIONAL ISOLATION POINTS)

**ATTACHMENT 14 PART 1**  
**WTO Form Hang/Lift Section**

**Page 1 of 1**

Exceptional WTO: ☐

Mode Dependent: ☐

Condition Dependent: ☐

Production Risk: ☐

WORKER TAGOUT# **PO7-100** JOB DESCRIPTION: **CHANGE 1A MAIN FEEDWATER PUMP OIL**

WORKING DEPARTMENT: **MMD** W/O OR W/R: **12345** EQUIP. TAG# **1FW01PA**

COMPONENT DESCRIPTION: **1A MAIN FEEDWATER PUMP**

FIRST APPROVAL: Jim NSO DATE/TIME: Today/10 minutes ago

SECOND APPROVAL: Mike Operator DATE/TIME: Today/8 minutes ago

WTO AUTHORIZATION: Joe Supervisor DATE/TIME Today/2 minutes ago

SPECIAL INSTRUCTIONS: YES: ☒ NO: ☐ (IF YES SEE ATTACHMENT 14 PART 2)

EQUIP. TAG/EQUIPMENT NAME	SEQ	TAG TYPE	POSITION	HUNG BY	VERIF. BY	SFTY. VERIF.	RTS SEQ	RTS POSITION	RTS BY	VERIF. BY
2FW01PA C/S FW PUMP 2A C/S (2PM04J)	1	CD	PTL		N/A		5	NAT		N/A
1FW01PA-B C/S FW PUMP 1A AUX OIL PUMP C/S (1PM04J)	1	CD	PTL		N/A		4	NAT		N/A
1FW002A C/S FW PUMP 1A DISCH VALVE C/S (1PM04J)	2	CD	NAC		N/A		3	NAO		N/A
1FW012A C/S FW PUMP 1A RECIRC VALVE C/S (1PM04J)	2	CI	INFO		N/A		3	CLOSED		N/A
1FW01PA BKR FW PUMP 1A BKR (BUS 156 CUB 4)	3	RD	R/O		N/A		2	R/TEST		N/A
1FW01PA-B BKR FW PUMP 1A AUX OIL PUMP BKR (134Z2 CUB F1)	3	RD	OFF		N/A		2	ON		N/A
1FW01PA-A BKR FW PP 1A MOTOR HTR BKR (134Z2 G4)	3	RD	OFF		N/A		2	ON		N/A
1FW002A BKR FW PUMP 1A DSCH VLV BKR (133Z2 G3)	3	RD	OFF		N/A		2	ON		N/A
1FW027A FW PUMP 1A RECIRC VALVE MANUAL ISOL VLV (401 K-11 +20')	4	RD	CLOSED		N/A		1	OPEN		N/A

WTO PLACED: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

WTL COMPLETED WORK START: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

**WTO FINAL CLEAR:** WORK CREWMEMBER RELEASE: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

WTO CLEARED: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

(COPIES MAY BE MADE OF THIS FORM FOR ADDITIONAL ISOLATION POINTS)

**ATTACHMENT 14 PART 1**  
**WTO Form Hang/Lift Section**  
**Page 1 of 1**

Exceptional WTO: ☐

Mode Dependent: ☐

Condition Dependent: ☐

Production Risk: ☐

WORKER TAGOUT# **PO7-100** JOB DESCRIPTION: **CHANGE 1A MAIN FEEDWATER PUMP OIL**

WORKING DEPARTMENT: **MMD** W/O OR W/R: **12345** EQUIP. TAG# **1FW01PA**

COMPONENT DESCRIPTION: **1A MAIN FEEDWATER PUMP**

FIRST APPROVAL: Jim NSO DATE/TIME: Today/10 minutes ago

SECOND APPROVAL: Mike Operator DATE/TIME: Today/8 minutes ago

WTO AUTHORIZATION: Joe Supervisor DATE/TIME Today/2 minutes ago

SPECIAL INSTRUCTIONS: YES: ☒ NO: ☐ (IF YES SEE ATTACHMENT 14 PART 2)

EQUIP. TAG/EQUIPMENT NAME	SEQ	TAG TYPE	POSITION	HUNG BY	VERIF. BY	SFTY. VERIF.	RTS SEQ	RTS POSITION	RTS BY	VERIF. BY
1FW01PA C/S FW PUMP 1A C/S (1PM04J)	1	CD	PTL		N/A		5	NAT		N/A
1FW01PA-B C/S FW PUMP 1A AUX OIL PUMP C/S (1PM04J)	1	CD	PTL		N/A		4	NAT		N/A
1FW002A C/S FW PUMP 1A DISCH VALVE C/S (1PM04J)	2	CD	NAC		N/A		3	NAO		N/A
1FW012A C/S FW PUMP 1A RECIRC VALVE C/S (1PM04J)	2	CI	INFO		N/A		3	CLOSED		N/A
1FW01PA BKR FW PUMP 1A BKR (BUS 156 CUB 4)	3	RD	R/O		N/A		2	R/TEST		N/A
1FW01PA-B BKR FW PUMP 1A AUX OIL PUMP BKR (134Z2 CUB F1)	3	RD	OFF		N/A		2	ON		N/A
1FW01PA-A BKR FW PP 1A MOTOR HTR BKR (134Z2 G4)	3	RD	OFF		N/A		2	ON		N/A
1FW002A BKR FW PUMP 1A DSCH VLV BKR (133Z2 G3)	3	RD	OFF		N/A		2	ON		N/A
1FW027A FW PUMP 1A RECIRC VALVE MANUAL ISOL VLV (401 K-11 +20')	4	RD	CLOSED		N/A		1	OPEN		N/A

WTO PLACED: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

WTL COMPLETED WORK START: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

**WTO FINAL CLEAR:** WORK CREWMEMBER RELEASE: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

WTO CLEARED: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

(COPIES MAY BE MADE OF THIS FORM FOR ADDITIONAL ISOLATION POINTS)

TASK TITLE: Initiate a LCOAR for 1A SI Pump

JPM No.: S-201

Task No.: S-AM-073

Objective No.: 8E.AM-120

REV: 20070301

K/A No.: 2.2.23

K/A IMP: 3.8

EXAMINEE: \_\_\_\_\_

SRO

EVALUATOR: \_\_\_\_\_

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

The Examinee: PASSED \_\_\_\_\_ this JPM.

FAILED \_\_\_\_\_

TIME STARTED: \_\_\_\_\_

TIME FINISHED: \_\_\_\_\_

JPM TIME: \_\_\_\_\_ MINUTES

CRITICAL ELEMENTS: (\*) 3, 5, 6

CRITICAL TIME: NA

EVALUATION METHOD:

☒ PERFORM

☐ SIMULATE

LOCATION:

☐ IN PLANT

☒ SIMULATOR

APPROX COMPLETION TIME: 10 MINUTES

GENERAL REFERENCES:

1. 1BwOL 3.5.2, LCOAR – ECCS OPERATING, Rev 5.
2. 1BwVSR 5.5.8.SI.1, ASME SURVEILLANCE REQUIREMENTS FOR THE 1A SI PUMP, Rev. 5.

MATERIALS:

1. Copy of 1BwOL 3.5.2, Rev 5.
2. Completed copy of 1BwVSR 5.5.8.SI.1, Rev. 5.

TASK STANDARDS:

1. Perform safety function determination for 1A SI pump inoperability.
2. Initiate LCOAR for 1A SI pump inoperability.

TASK CONDITIONS:

1. You are the Unit 1 Unit Supervisor.
2. Both units at power.
3. The Engineering staff has notified you that the 1A SI pump has failed surveillance 1BwVSR 5.5.8.SI.1, ASME SURVEILLANCE REQUIREMENTS FOR THE 1A SI PUMP, 10 minutes ago due to high pump vibration.
4. IR # 123456 has been written.
5. No other inoperable equipment exists on either Unit.

INITIATING CUES:

1. The Shift Manager (Jon Doe) directs you to initiate 1BwOL 3.5.2, LCOAR – ECCS OPERATING, for the 1A SI Pump.  
**CUE: Hand examinee copy of 1BwOL 3.5.2.**
2. Inform the Shift Manager when you have initiated 1BwOL 3.5.2.

RECORD START TIME: \_\_\_\_\_

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
1.	Refer to 1BwOL 3.5.2 <b>NOTE: If examinee requests to review 1BwVSR 5.5.8.SI.1, provide the attached copy.</b>	Refer to 1BwOL 3.5.2	SAT   UNSAT   N/A <b><u>Comments:</u></b>
<b>EVALUATOR NOTE: JPM steps 2 – 4 can be performed in any order.</b>			
2.	Enter present mode and initiating event in Section A of 1BwOL 3.5.2:	Enter present mode and initiating event in Section A of 1BwOL 3.5.2: <ul style="list-style-type: none"> <li>• Present Mode: <u>1</u></li> <li>• Initiating Event: <u>Failure of 1BwVSR 5.5.8.SI.1 due to high pump vibrations.</u></li> </ul>	SAT   UNSAT   N/A <b><u>Comments:</u></b>
*3.	<b>Perform Safety Function Determination</b> (step B.1)	Refer to Loss of Safety Function (LOSF) Evaluation, step B.1 (page 2): <ul style="list-style-type: none"> <li>• Determine NO support system or supported system on Train B ECCS is inoperable (from initiating cue)</li> <li>• Check box <u>1A</u>: No – No LOSF exists.</li> </ul> On page 1, perform the following: <ul style="list-style-type: none"> <li>• SAFETY FUNCTION DETERMINATION PERFORMED? <u>YES</u>.</li> <li>• Initial next to YES box.</li> <li>• DOES THIS INOPERABILITY INVALIDATE ANY PREVIOUS SFD? <u>NO</u></li> </ul>	SAT   UNSAT   N/A <b><u>Comments:</u></b>



	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
4.	<p>Complete section A, Notification, of 1BwOL 3.5.2</p> <p><b>NOTE:</b> Underlined phrases or words to that effect are acceptable.</p> <p><b>CUE:</b> If examinee asks, current Shift Manager is Jon Doe.</p> <p><b>CUE:</b> If examinee asks, a clearance order is being prepared, but has not been completed yet.</p> <p><b>CUE:</b> Sign NSO signature as Joe Operator</p>	<p>Complete Section A. Notification, of 1BwOL 3.5.2:</p> <ul style="list-style-type: none"> <li>Name of Shift Manager notified: <u>Jon Doe</u></li> <li>Time Date: (<u>notification time and today's date</u>)</li> <li>Was an IR written: <u>Yes, 123456</u></li> <li>Related WRs: <u>None</u></li> <li>Related C/O(s): <u>No</u></li> <li>SRO Signature: <u>Examinee's signature</u></li> <li>Unit NSO signature: (<u>Unit NSO name signed by examiner</u>)</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>
*5.	<p><b>Complete LCOAR Index ECCS Operating</b></p>	<p>On page 5 of 1BwOL 3.5.2, sign and date Condition A line and refer to page 6:</p> <ul style="list-style-type: none"> <li>Examinee's signature</li> <li>Today's date</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>
*6.	<p><b>Initiate LCOAR 1BwOL 3.5.2</b></p> <p><b>CUE:</b> If asked, another SRO will enter this LCOAR entry into the LCOAR data base.</p>	<p>On page 6 of 1BwOL 3.5.2, enter time, date and signature in Condition column:</p> <ul style="list-style-type: none"> <li>10 minutes ago time</li> <li>Today's date</li> <li>Examinee's signature</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

**CUE: THIS COMPLETES THIS JPM.**

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

**COMMENTS:**

**NOTE: JPM can be performed in any location. If JPM is performed in simulator, perform the following setup instructions, otherwise N/A.**

### **SIMULATOR SETUP INSTRUCTIONS**

- Verify/perform TQ-BR-201-0113, BRAIDWOOD TRAINING DEPARTMENT SIMULATOR EXAMINATION SECURITY ACTIONS CHECKLIST.
- Establish the conditions of IC-21, BOL 100% Power, Steady State, Equilibrium Xenon.
- Complete items on Simulator Ready for Training Checklist.
- Place simulator in RUN.
- Verify 1A SI pump not running.

COMMENTS:

## JOB PERFORMANCE MEASURE

### TASK CONDITIONS:

1. You are the Unit 1 Unit Supervisor.
2. Both units are at power.
3. The Engineering staff has notified you that the 1A SI pump has failed surveillance 1BwVSR 5.5.8.SI.1, ASME SURVEILLANCE REQUIREMENTS FOR THE 1A SI PUMP, **10 minutes ago** due to high pump vibration.
4. IR # 123456 has been written.
5. No other inoperable equipment exists on either Unit.

### INITIATING CUES:

1. The Shift Manager (Jon Doe) directs you to initiate 1BwOL 3.5.2, LCOAR – ECCS OPERATING, for the 1A SI Pump.
2. Inform the Shift Manager when you have initiated 1BwOL 3.5.2.

TASK TITLE: Determine Radiological Conditions and Entry Requirements for 1A RH Hx Room

JPM Number: R-303

Rev. 20070301

Task No.: R-HP-001

K/A No.: 2.3.10

Objective No.: 4E.HP-01

K/A Imp.: 2.9/3.3

EXAMINEE: \_\_\_\_\_

RO SRO (Circle One)

EVALUATOR: \_\_\_\_\_

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

The Examinee: PASSED \_\_\_\_\_ this JPM.  
FAILED \_\_\_\_\_

TIME STARTED: \_\_\_\_\_

TIME FINISHED: \_\_\_\_\_

JPM TIME: \_\_\_\_\_ MINUTES

Approx. Completion Time: 15 MINUTES

Critical Elements: (\*) 2, 3, 4, 5

Critical Time: N/A

EVALUATION METHOD:

LOCATION:

☒ PERFORM

☐ IN PLANT

☐ SIMULATE

☒ SIMULATOR

GENERAL REFERENCES:

1. A-364-3-D, Unit 1 1A RH HX Room Survey Map
2. RP-AA-300, RADIOLOGICAL SURVEY PROGRAM, Rev. 2.
3. RP-AA-376, RADIOLOGICAL POSTINGS, LABELING, AND MARKINGS, Rev. 2.
4. RP-AA-460, CONTROLS FOR HIGH AND VERY HIGH RADIATION AREAS, Rev. 12.

MATERIALS:

1. Copy of A-364-3-D, Unit 1 1A RH HX Room Survey Map.
2. Copy of RP-AA-460, CONTROLS FOR HIGH AND VERY HIGH RADIATION AREAS, Rev. 12.

TASK STANDARDS:

1. Determine dose rates for 1A RH HX Room.
2. Determine required briefing prior to entering 1A RH HX Room.

TASK CONDITIONS:

1. Unit 1 is in Mode 5.
2. You are the Unit 1 Assist NSO.
3. You have been directed to access the 1A RH HX Room to check the position of the Instrument Air Isolation Valve for 1RH606, 1A RH HX Flow Control Valve.
4. You have previously reviewed and signed the applicable RWP(s) for access to the 1A RH HX Room.
5. You have previously acquired the required dosimetry for access to the 1A RH HX Room.

INITIATING CUES:

1. Using the attached survey map of the 1A RH HX Room, determine the following for the 1A RH HX Room:
  - a. Highest dose rate on contact from accessible radiation sources.
  - b. Highest dose rate at 30 cm from accessible radiation sources.
  - c. Highest general area dose rate.
  - d. RP briefing (if any) required for room entry.

RECORD START TIME: \_\_\_\_\_

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
	<b>EVALUATOR NOTE:</b> The examinee may perform the following JPM steps in any order.		
	<b>EVALUATOR NOTE:</b> If examinee request copy of the procedures listed below during performance of JPM, provide examinee with applicable attached copy. 1. RP-AA-300, RADIOLOGICAL SURVEY PROGRAM 2. RP-AA-376, RADIOLOGICAL POSTINGS, LABELING, AND MARKINGS 3. RP-AA-460, CONTROLS FOR HIGH AND VERY HIGH RADIATION AREAS		
1.	Refer to Survey Map A-364-3-D. <b>CUE:</b> Provide examinee attached copies of RP-AA-460 and 1A RH HX Survey Map.	Refer to Survey Map A-364-3-D.	SAT    UNSAT    N/A <b><u>Comments:</u></b>
*2.	<b>Determine highest dose rate on contact from accessible radiation sources.</b>	Perform the following: ○ Review Survey Map A-364-3-D. • Determine highest dose rate on contact from accessible radiation sources to be 170 mrem/hr (on 1A RH HX)	SAT    UNSAT    N/A <b><u>Comments:</u></b>
*3	<b>Determine highest dose rate at 30 cm from accessible radiation sources.</b>	Perform the following: ○ Review Survey Map A-364-3-D. • Determine highest dose rate at 30 cm from accessible radiation sources to be 90 mrem/hr (on 1A RH HX)	SAT    UNSAT    N/A <b><u>Comments:</u></b>
*4	<b>Determine highest general area dose rate.</b>	Perform the following: ○ Review Survey Map A-364-3-D. • Determine highest general area dose rate to be 80 mrem/hr.	SAT    UNSAT    N/A <b><u>Comments:</u></b>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*5.	Determine High Rad Area RP Briefing required for room entry.	Perform the following: <ul style="list-style-type: none"> <li>○ Review Survey Map A-364-3-D.</li> <li>• Determine High Rad Area RP Briefing required for room entry from posting noted at room entrance (A with square around it.</li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>

**CUE: THIS COMPLETES THIS JPM.**

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

**COMMENTS:**

## JOB PERFORMANCE MEASURE

### TASK CONDITIONS:

1. Unit 1 is in Mode 5.
2. You are the Unit 1 Assist NSO.
3. You have been directed to access the 1A RH HX Room to check the position of the Instrument Air Isolation Valve for 1RH606, 1A RH HX Flow Control Valve.
4. You have previously reviewed and signed the applicable RWP(s) for access to the 1A RH HX Room.
5. You have previously acquired the required dosimetry for access to the 1A RH HX Room.

### INITIATING CUES:

2. Using the attached survey map of the 1A RH HX Room, determine the following for the 1A RH HX Room:
  - a. Highest dose rate on contact from accessible radiation sources.
  - b. Highest dose rate at 30 cm from accessible radiation sources.
  - c. Highest general area dose rate.
  - d. RP briefing (if any) required for room entry.

TASK TITLE: Prepare and Approve Nuclear Accident Reporting System Form

JPM No.: S-400

REV: 20070301

Task No.: S-ZP-001

K/A No.: 2.4.40

Objective No.: 8F.ZP-001

K/A IMP: 2.3/4.0

EXAMINEE: \_\_\_\_\_

SRO

EVALUATOR: \_\_\_\_\_

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

The Examinee: PASSED \_\_\_\_\_ this JPM.  
FAILED \_\_\_\_\_

TIME STARTED: \_\_\_\_\_

TIME FINISHED: \_\_\_\_\_

JPM TIME: \_\_\_\_\_ MINUTES

CRITICAL ELEMENTS: (\*) 3, 5, 6, 8

APPROX COMPLETION TIME: 13 MINUTES

CRITICAL TIME: 15 minutes.

EVALUATION METHOD:

LOCATION:

☒ PERFORM

☐ IN PLANT

☐ SIMULATE

☒ SIMULATOR

GENERAL REFERENCES:

1. EP-MW-114-100, MIDWEST REGION OFFSITE NOTIFICATIONS, Rev. 5
2. EP-MW-114-100-F-01, NUCLEAR ACCIDENT REPORTING SYSTEM (NARS) FORM, Rev. B.
3. EP-AA-114-F-01, Rev. B, RELEASE IN PROGRESS DETERMINATION GUIDE.

MATERIALS:

1. Copy of EP-MW-114-100, Rev. 5.
2. Copy of EP-MW-114-100-F-01, Rev. B.
3. Copy of EP-AA-114-F-01, Rev. B.

TASK STANDARDS:

1. Correctly determine Unit 1 release status.
2. Correctly complete NARS Form.
3. Approve NARS Form for transmittal within 15 minutes.

TASK CONDITIONS:

1. **This is a Time Critical JPM.**
2. You are the Shift Emergency Director.
3. A 600 gpm tube rupture has occurred on the 1A SG.
4. Three safety valves are stuck open on 1A SG.
5. 1BwEP-0, REACTOR TRIP OR SAFETY INJECTION, is in progress at step 20.
6. The accident in progress has just been classified as a Site Area Emergency, FS1, due to a loss of the RCS and Containment fission product barriers. (Assume classification time is start time of JPM).

INITIATING CUES:

1. The Emergency Plan requires that you PREPARE AND APPROVE the INITIAL Nuclear Accident Reporting System (NARS) Form for transmittal in accordance with EP-MW-114-100, MIDWEST REGION OFFSITE NOTIFICATIONS.  
**CUE: Hand examinee copy of EP-MW-114-100 and EP-MW-114-100-F-01.**
2. Another operations person will transmit the NARS form once it is prepared and approved.
3. Hand the NARS Form to your evaluator once you have prepared and approved the NARS Form.



RECORD START TIME: \_\_\_\_\_

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
1.	<p>Refer to EP-MW-114-100.</p> <p><b>NOTE: JPM page 7 contains a key of a correctly completed NARS form.</b></p> <p><b>NOTE: Critical Time begins when examinee understands initiating cue and accepts responsibility for task performance.</b></p> <p><b>Record critical time start time:</b> _____</p>	Refer to EP-MW-114-100.	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>
2.	Complete blocks 1 & 2:.	<p>Complete blocks 1 &amp; 2 by entering the information in bold font below:</p> <ul style="list-style-type: none"> <li>• UTILITY MESSAGE NO.: <b>1</b></li> <li>• STATE MESSAGE NO. <b>N/A</b></li> <li>• STATUS: <b>[1B]</b> DRILL/EXERCISE</li> <li>• STATION: <b>[2A]</b> BRAIDWOOD</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>
*3.	<b>Complete blocks 3 &amp; 4:</b>	<p>Complete blocks 3 &amp; 4 by checking the boxes and entering the information in bold font below:</p> <ul style="list-style-type: none"> <li>• ONSITE CONDITION: <b>[3C]</b> SITE AREA EMERGENCY</li> <li>• ACCIDENT CLASSIFIED: <ul style="list-style-type: none"> <li>• TIME: <b>JPM start time</b></li> <li>• DATE: <b>Today's Date.</b> <ul style="list-style-type: none"> <li>○ EAL#: <b>FS1.</b></li> </ul> </li> <li>○ ACCIDENT TERMINATED: Time and Date: <b>N/A.</b></li> </ul> </li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*5.	<b>Complete blocks 5 &amp; 6:</b> <b>CUE: If asked, provide attached copy of EP-AA-114-F-01, RELEASE IN PROGRESS DETERMINATION GUIDE.</b>	Complete blocks 5 & 6 by performing the following: <ul style="list-style-type: none"> <li>Determine release is occurring.               <ul style="list-style-type: none"> <li>Refer to EP-AA-114-F-01, RELEASE IN PROGRESS DETERMINATION GUIDE.</li> <li>SGTR w/open MS safety valves is release path.</li> </ul> </li> <li>Check the boxes in bold font below:               <ul style="list-style-type: none"> <li>RELEASE STATUS: <b>[5B]</b> OCCURRING.</li> <li>TYPE OF RELEASE: <b>[6B]</b> GASEOUS</li> </ul> </li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
<b>EVALUATOR NOTE: When recording wind speed in the next step, the examinee may enter wind speed in miles per hour, meters per second, or both. At least one wind speed must be correctly entered.</b>			
*6.	<b>Complete blocks 7 &amp; 8:</b>	Complete blocks 7 & 8 by performing the following: <ul style="list-style-type: none"> <li>Record actual data from PPDS or OPM01J:</li> <li>Enter the information in bold font below               <ul style="list-style-type: none"> <li>WIND DIRECTION: <b>270 ± 30</b></li> <li>WIND SPEED: <b>[8A] 4.5 m/s ± 2 m/s.</b> AND/OR <b>[8B] 10 mph ± 5 mph</b></li> </ul> </li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>
7.	Complete blocks 9 & 10:	Complete blocks 3 & 4 by checking the boxes and entering the information in bold font below: <ul style="list-style-type: none"> <li>RECOMMENDED ACTIONS: <b>[9A]</b> NONE</li> <li>ADDITIONAL INFORMATION: <b>None</b></li> </ul>	SAT    UNSAT    N/A <u>Comments:</u>

	PERFORMANCE STEP	STANDARD	CIRCLE APPLICABLE
*8.	<p><b>Approve the NARS Form:</b></p> <p><b>NOTE:</b> If examinee asks for verification of NARS form, provide the following cue:</p> <p><b>CUE:</b> Verification has been provided by SRO Jon Doe.</p> <p><b>NOTE:</b> Critical Time ends when examinee approves NARS form and hand it to the evaluator for transmittal.</p> <p><b>Record critical time stop time:</b></p> <p>_____</p> <p><b>Critical time =</b></p> <p>_____ - _____</p> <p><b>(end time)      (start time)</b></p> <p><b>≤ 15 minutes.</b></p>	<ul style="list-style-type: none"> <li>• Approve the NARS Form by performing the following: <ul style="list-style-type: none"> <li>○ Obtain verification</li> </ul> </li> <li>• Sign the Approved by line.</li> </ul>	<p>SAT    UNSAT    N/A</p> <p><b><u>Comments:</u></b></p>

**CUE: THIS COMPLETES THIS JPM.**

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

**COMMENTS:**

## **SIMULATOR SETUP INSTRUCTIONS**

- Verify/perform TQ-BR-201-0113, BRAIDWOOD TRAINING DEPARTMENT SIMULATOR EXAMINATION SECURITY ACTIONS CHECKLIST.
- Establish the conditions of IC 21, 100% power, steady state, equilibrium xenon.  
- OR -
- Other IC if being performed concurrently with other JPMs. (JPM is not IC dependent)
- Complete items on Simulator Ready for Training Checklist.
- Place simulator in RUN.
- Insert the following remote functions to set wind direction at 270 degrees, and the wind speed at 10 mph:
  - Insert IRF **EP03 10** to set 34' wind speed to 10 mph
  - Insert IRF **EP04 270** to set 34' wind direction to 270 degrees
  - Insert IRF **EP11 12** to set 204' wind speed to 12 mph
  - Insert IRF **EP12 272** to set 204' wind direction to 272 degrees

COMMENTS:

## JOB PERFORMANCE MEASURE

### TASK CONDITIONS:

1. **This is a Time Critical JPM.**
2. You are the Shift Emergency Director.
3. A 600 gpm tube rupture has occurred on the 1A SG
4. Three safety valves are stuck open on 1A SG.
5. 1BwEP-0, REACTOR TRIP OR SAFETY INJECTION, is in progress at step 20.
6. The accident in progress has just been classified as a Site Area Emergency, FS1, due to a loss of the RCS and Containment fission product barriers. (Assume classification time is start time of JPM).

### INITIATING CUES:

1. The Emergency Plan requires that you PREPARE AND APPROVE the INITIAL Nuclear Accident Reporting System (NARS) Form for transmittal in accordance with EP-MW-114-100, MIDWEST REGION OFFSITE NOTIFICATIONS.
2. Another operations person will transmit the NARS form once it is prepared and approved.
3. Hand the NARS Form to your evaluator once you have prepared and approved the NARS Form.

# KEY – DO NOT GIVE TO EXAMINEE

UTILITY MESSAGE NO. 1STATE MESSAGE NO. N/A1. **STATUS**

[A] ACTUAL [X] BRAIDWOOD [C] CLINTON [E] LASALLE [G] ZION  
[X] DRILL/EXERCISE [B] BYRON [D] DRESDEN [F] QUAD CITIES

2. **STATION**3. **ONSITE CONDITION**

[A] UNUSUAL EVENT  
[B] ALERT  
[X] SITE AREA EMERGENCY  
[D] GENERAL EMERGENCY  
[E] RECOVERY  
[F] TERMINATED

4. **ACCIDENT CLASSIFIED**TIME (3[A-E]): JPM start timeDATE (3[A-E]): TodayEAL#: FS1**ACCIDENT TERMINATED**TIME (3[F]): N/ADATE (3[F]): N/A5. **RELEASE STATUS**

[A] NONE  $\longleftrightarrow$  [A] NOT APPLICABLE  
[X] OCCURRING  $\longleftrightarrow$  [X] GASEOUS  
[C] TERMINATED  $\longleftrightarrow$  [C] LIQUID

7. **WIND DIR**

270 ± 30  
(DEGREES FROM)

8. **WIND SPEED**

[X] METERS/SEC.: 4.5 ± 2  
[X] MILES/HR.: 10 ± 5

9. **RECOMMENDED ACTIONS****UTILITY RECOMMENDATION**

[X] NONE (UE, Alert and SAE Only)

(GE Only)

[B] SHELTER ILLINOIS SUB-AREAS: \_\_\_\_\_  
AND ADVISE REMAINDER OF THE EPZ TO MONITOR LOCAL RADIO STATIONS[C] SHELTER IOWA SUB-AREAS: \_\_\_\_\_  
AND ADVISE REMAINDER OF THE EPZ TO MONITOR LOCAL RADIO STATIONS[D] EVACUATE ILLINOIS SUB-AREAS: \_\_\_\_\_  
AND ADVISE REMAINDER OF THE EPZ TO MONITOR LOCAL RADIO STATIONS[E] EVACUATE IOWA SUB-AREAS: \_\_\_\_\_  
AND ADVISE REMAINDER OF THE EPZ TO MONITOR LOCAL RADIO STATIONS**STATE RECOMMENDATION**

[F] NONE

[G] SHELTER SUB-AREAS: \_\_\_\_\_

[H] EVACUATE SUB-AREAS: \_\_\_\_\_

[I] RECOMMEND POTASSIUM IODIDE (KI) PER PROCEDURES

[J] COMMENCE RETURN OF PUBLIC

[K] OTHER \_\_\_\_\_

10. **ADDITIONAL INFORMATION** "NONE"Verified With: Jon DoeApproved By: Candidates Signature

11. **TRANSMITTED BY:** \_\_\_\_\_ **NAME** \_\_\_\_\_ **PHONE NUMBER** \_\_\_\_\_  
TIME/DATE

[A] EXELON: \_\_\_\_\_

[B] STATE: \_\_\_\_\_

[C] COUNTY: \_\_\_\_\_

12. **RECEIVED BY:** \_\_\_\_\_ **NAME** \_\_\_\_\_ **ORGANIZATION** \_\_\_\_\_  
TIME/DATE

# KEY – DO NOT GIVE TO EXAMINEE