

Job Performance Measure  
**Perform 1BwOS RF-1**

JPM Number: R-113

Revision Number: 151

Date: 03 / 28 / 2016

Developed By: Eric Steinberg 03/28/2016  
Instructor Date

Validated By: Dan Burton 04/22/2016  
SME or Instructor Date

Reviewed By: Kevin Lueshen 04/22/2016  
Operations Representative Date

Approved By: Eric Steinberg 04/26/2016  
Training Department Date

**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**NOTE:** All steps of this checklist should be performed upon initial validation.  
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
     Procedure 1BwOS RF-1 Rev: 14  
     Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
     Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

_____ SME / Instructor	_____ Date
_____ SME / Instructor	_____ Date
_____ SME / Instructor	_____ Date

**Revision Record (Summary)**

**Revision 151,** New RO admin JPM for ILT 151 NRC exam.

# Braidwood

## SIMULATOR SETUP INSTRUCTIONS

R-113 rev 151

1. Reset the simulator to IC 21

NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. Verify PPC screens are not setup with PC002 and PC003 data present.
3. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
4. This completes the setup for this JPM.
5. To repeat, ensure PPC screens are not setup with PC002 and PC003 data present.

# Braidwood

## INITIAL CONDITIONS

R-113 rev 151

1. Unit 1 is 100% power.
2. The 1RF008 flow indicator is spiking and suspected to be failing.
3. A leak rate was just complete with an identified leak rate of 0.15 GPM and an unidentified leak rate of 0.035 GPM.

## INITIATING CUE

1. You are the unit 1 admin NSO.
2. Using the 8 hours for PC002 (L2001) and PC003 (L2002) provided, the unit supervisor directs you to perform 1BwOS RF-1, Unit One Containment Floor Drain Monitoring System Non Routine Surveillance, through step 9.
3. Report the results to the unit supervisor when step 9 is complete.

Provide 1BwOS RF-1 and data print out once examinee acknowledges the cue.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

---

### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

---

# Braidwood

R-113 rev 151

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*1	Determine initial total leakage.	<ul style="list-style-type: none"> <li>Record starting date and time on Table A.</li> </ul> <p>Determine TOTAL ELAKAGE into sump per appendix A:</p> <ul style="list-style-type: none"> <li>Find and Record the low level date, and time.</li> <li>Find and Record the high level, date, and time.</li> <li><b>Calculate the level change for each channel:</b> <ul style="list-style-type: none"> <li>High – Low L2001 28.845-28.423=<b>0.422</b> +/- 0.1.</li> <li>L2002 28.573-28.187=<b>0.386</b> +/- 0.1.</li> </ul> </li> <li>Calculate the time change: <ul style="list-style-type: none"> <li>End time – start time. 8 hours or 480 minutes.</li> </ul> </li> <li><b>Calculate the RF sump total leakage for each indicator:</b> <ul style="list-style-type: none"> <li>Level change/time change L2001 <b>0.015</b> +/- 0.01.</li> <li>L2002 <b>0.014</b> +/- 0.01.</li> </ul> </li> </ul>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
2	Record data on table A.	<ul style="list-style-type: none"> <li>Record total leakage from appendix A on table A.</li> <li>Determine time requirement for next total leakage determination: <ul style="list-style-type: none"> <li>Add 72 hours to time the leakage was recorded and record on table A.</li> </ul> </li> <li>Record the unidentified leak rate from the leak rate surveillance.</li> <li>Record the flow instrument used to track leakage.</li> <li>Record the flow reading used to track leakage.</li> </ul>	—	—	—
*3	<b>Determine Limit #1.</b>	<ul style="list-style-type: none"> <li><b>Subtract the unidentified leak rate from 0.8 GPM:</b> <math>0.8 - .035 = 0.765</math>.</li> <li><b>Add the leakage determined from step 7 to the sum from the previous step</b> <math>0.765 + 0.015 = 0.78 \pm .01</math>.</li> <li>Determine if Limit #1 &gt; 15 GPM.</li> <li>Record the results as limit #1 on table A.</li> </ul>	—	—	—
*4	<b>Determine Limit #2</b>	<ul style="list-style-type: none"> <li><b>Subtract 0.2 GPM from the flow determined in step 7:</b> <math>.015 - 0.2 = -0.185 \pm .01</math>.</li> <li>Record the results as limit #2 on table A.</li> </ul>	—	—	—
5	Report the results to the Unit Supervisor.	<ul style="list-style-type: none"> <li>Results reported to US.</li> </ul>	—	—	—
CUE	Another operator will continue to trend data. That completes this JPM.				

JPM Stop Time: \_\_\_\_\_

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☒ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Perform 1BwOS RF-1JPM Number: R-113Revision Number: 151Task Number and Title: 4C.AM-05 Perform Common Shiftly and Daily Operating Surveillance.K/A Number and Importance: 016000G2.1.19 3.9Suggested Testing Environment: SimulatorAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ NoReference(s): 1BwOS RF-1, rev 14, UNIT ONE CONTAINMENT FLOOR DRAIN  
MONITORING SYSTEM NON ROUTINE SURVEILLANCE. Technical  
Specification 3.4.15, Leakage Detection Instrumentation.**Actual Testing Environment:** ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 20 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe operator's performance was evaluated against standards  
contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_



## INITIAL CONDITIONS

1. Unit 1 is 100% power.
2. The 1RF008 flow indicator is spiking and suspected to be failing.
3. A leak rate was just complete with an identified leak rate of 0.15 GPM and an unidentified leak rate of 0.035 GPM.

## INITIATING CUE

1. You are the unit 1 admin NSO.
2. Using the 8 hours of data for containment floor drain sumps provided, the unit supervisor directs you to perform 1BwOS RF-1, Unit One Containment Floor Drain Monitoring System Non Routine Surveillance, through step 9.
3. Report the results to the unit supervisor when step 9 is complete.

## Job Performance Measure

### Perform a QPTR Calculation w/o Process Computer

JPM Number: R-102

Revision Number: 151

Date: 03 / 16 / 2016

Developed By:	<u>Eric Steinberg</u>	<u>03/16/2016</u>
	Instructor	Date

Validated By:	<u>Dan Burton</u>	<u>04/22/2016</u>
	SME or Instructor	Date

Reviewed By:	<u>Kevin Lueshen</u>	<u>04/22/2016</u>
	Operations Representative	Date

Approved By:	<u>Eric Steinberg</u>	<u>04/26/2016</u>
	Training Department	Date

**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

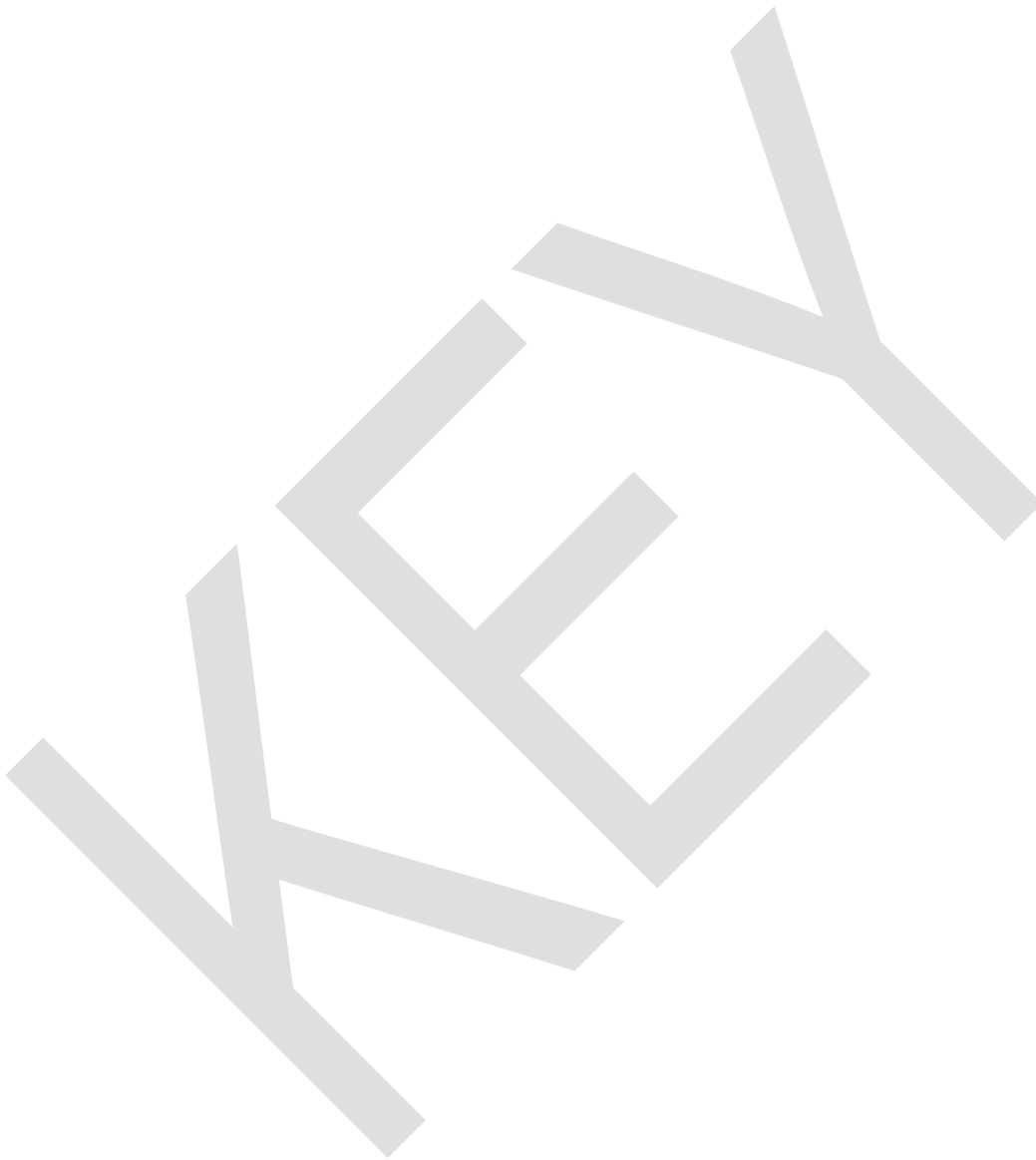
**NOTE:** All steps of this checklist should be performed upon initial validation.  
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 1BwOSR 3.2.4.1 Rev: 9  
Operator Aid for 100% Power NIS Detector Currents
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

SME / Instructor	Date
SME / Instructor	Date
SME / Instructor	Date

## Revision Record (Summary)

**Revision 151,** Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.



# Braidwood

## SIMULATOR SETUP INSTRUCTIONS

R-102 - rev 151

1. Reset the simulator to IC-21 or equivalent 100% power IC.
2. Simulator needs to run for at least 10 minutes.
3. Ensure PPC screens are not set up to go to calorimetric screen with options filled in.
4. Ensure rods in auto.
5. Simulator Operator should record the upper and lower detector currents from the NIS front panel meters as well as the 100% detector current values from the most recent operator aid book. These values will then be used to complete step 5 and 6 of this JPM.
6. Verify that the NIS front panel detector currents are equal to the values recorded above, prior to each occurrence of this JPM.
7. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
8. This completes the setup for this JPM.

### KEY

Date: TODAY	Time: NOW			
Channel	N41	N42	N43	N44
Is the channel operable?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Instrument reading	100%	100%	100%	100%
<b>UPPER DETECTORS (A)</b>				
Present upper detector current	190	185	190	185
100% upper detector current	194	179	192	186
Normalized detector current	.979	1.03	.990	.995
Average normalized current	.999			
Upper power tilt ratio ( $\phi \leq 1.02$ )	$\phi$ .980	$\phi$ 1.03	$\phi$ .991	$\phi$ .996
<b>LOWER DETECTORS (B)</b>				
Present lower detector current	170	150	165	165
100% lower detector current	170	153	165	168
Normalized detector current	1.00	.980	1.00	.982
Average normalized current	.990			
Lower power tilt ratio ( $\phi \leq 1.02$ )	$\phi$ 1.01	$\phi$ .989	$\phi$ 1.01	$\phi$ .991

**INITIAL CONDITIONS**

1. You are an extra NSO.
2. Unit 1 is at full power.

**INITIATING CUE**

1. The US has directed you to perform, the weekly QPTR calculation using NIS meters per 1BwOSR 3.2.4.1. The process computer is inoperable only for the purpose of this surveillance.

Provide student copy of 1BwOSR 3.2.4.1 and inform them that all prerequisites, precautions, limitations and actions are met.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

---

**Information For Evaluator's Use:**

UNSAT requires written comments on respective step.

\* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

---

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

<b><u>STEP</u></b>	<b><u>ELEMENT</u></b>	<b><u>STANDARD</u></b>	<b>SAT</b>	<b>UNSAT</b>	<b>Comment Number</b>
1	Indicate the applicability of this surveillance on Data Sheet D-3.	Determine NIS meters must be used to perform this surveillance and INDICATE on Data Sheet D-3: <ul style="list-style-type: none"> <li>CHECK 7-day block.</li> </ul>	—	—	—
2	Record Date and Time on Data Sheet D-3.	RECORD Date and Time on data sheet D-3.	—	—	—
3	Record power range NIs operability status.	On Data Sheet D-3, RECORD the following for power range NIs 41-44: <ul style="list-style-type: none"> <li>'Y' block checked for each channel indication reliable.</li> <li>100% (or present power reading from each channel at 1PM07J).</li> </ul>	—	—	—
CUE	If asked, the Unit has NO LCOARs in progress at this time.				
NOTE:	JPM steps 4 through 8 may be done for the upper section then repeated for the lower detectors or steps 4 and 5 may be recorded for both upper and lower detectors before proceeding to step 6. Once the detector currents from the OP-Aid Book have been filled in (step 5) hand the student the D-3 data sheet with only the upper detectors data filled in if only the upper data was taken on the first time through. If upper and lower are recorded before any calculation are done or after the lower detector data is recorded hand student the D-3 data sheet with the upper and lower detector currents filled in when detector currents from the OP-Aid Book have been recorded in step 5.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*4	<p>Record each present detector current reading from 1PM07J on Data Sheet D-3.</p> <p><b>UPPERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul> <p><b>LOWERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul>	<p>All present Upper and Lower Detector Currents recorded within <math>\pm 10</math> <math>\mu</math>amps of actual values on Data Sheet D-3. (Procedural Adherence)</p> <p><b>UPPERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul> <p><b>LOWERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul>	_____	_____	_____
NOTE	Prior to commencing this JPM, the actual readings should be logged here				



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*5	<p><b>Record 100% Detector Currents from Operator Aid Book on data Sheet D-3.</b></p> <p><b>UPPERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul> <p><b>LOWERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul>	<p><b>Record the 100% Detector Currents from the Operator Aid Book for each upper and lower detector on Data Sheet D-3: (Procedural Adherence)</b></p> <p><b>UPPERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul> <p><b>LOWERS:</b></p> <ul style="list-style-type: none"> <li>• N41 _____</li> <li>• N42 _____</li> <li>• N43 _____</li> <li>• N44 _____</li> </ul>	_____	_____	_____
CUE	If asked as the QNE for the values, report that they are in the operator aid book				
CUE	NOTE: Hand student the appropriate partially filled in D-3 data sheet. The first time through may be uppers only. On the second pass or if both upper and lower data was take initially, hand student D-3 data sheet with both the upper and lower currents filled in.				
*6	<p><b>Using the partially filled in D-3 Data Sheet, perform the calculations to obtain the normalized detector currents and log them on the data sheet.</b></p>	<p><b>Calculate the Normalized Detector Currents for each detector by dividing its present detector current reading by the 100% detector current value from the operator aid and log on the D-3 Data Sheet: (Procedural Adherence)</b></p> <ul style="list-style-type: none"> <li>• Each Upper</li> <li>• Each Lower</li> </ul>	_____	_____	_____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*7	Using the partially filled in D-3 Data Sheet, perform the calculations to obtain the average normalized currents and log them on the data sheet.	Calculate the Average Normalized Current by summing the upper (lower) normalized detector currents and dividing by 4 and log on the D-3 Data Sheet: <i>(Procedural Adherence)</i> <ul style="list-style-type: none"> <li>• Upper Average</li> <li>• Lower Average</li> </ul>	—	—	—
*8	Using the partially filled in D-3 Data Sheet, perform the calculations to determine the QPTR for each detector and log them on the data sheet.	Determine the QPTR for each detector by dividing each Normalized Detector Current by the Average Normalized Current and log on the D-3 data sheet: <i>(Procedural Adherence)</i> <ul style="list-style-type: none"> <li>• Each Upper</li> <li>• Each Lower</li> </ul>	—	—	—
*9	Identify N42 Upper Detector QPTR is unacceptable.	Determine if QPTR is acceptable: <ul style="list-style-type: none"> <li>• Identify N42 Upper Detector QPTR is &gt;1.02 and is unacceptable.  <i>(Regulatory Compliance)</i> <ul style="list-style-type: none"> <li>○ Immediately notify the Shift Manager or Designee to initiate LCOAR (1BwOL 3.2.4).</li> </ul> </li> </ul>	—	—	—
CUE	As SM, acknowledge the required initiation of LCOAR 1BwOL 3.2.4				

JPM Stop Time: \_\_\_\_\_

## 6

## **INITIAL CONDITIONS**

1. You are an extra NSO.
2. Unit 1 is at full power.

## **INITIATING CUE**

1. The US has provided you a copy of, and directed you to perform, the weekly QPTR calculation using NIS meters per 1BwOSR 3.2.4.1. The process computer is inoperable only for the purpose of this surveillance.

# Braidwood

R-102 - rev 151

## UNIT ONE QUADRANT POWER TILT RATIO CALCULATION NIS METERS

Being performed once per:

- ☒ 7 Days (normal interval)      ☐ Shiftly  
☐ 12 Hours (with BwVSR 3.2.4.2.)      ☐ Other: \_\_\_\_\_

Date: Today	Time: NOW			
Channel	N41	N42	N43	N44
Is the channel indication reliable?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Instrument reading	100%	100%	100%	100%
<b>Upper Detectors (A)</b>				
Present upper detector current	190	185	190	185
100% upper detector current	194	179	192	186
Normalized detector current				
Average normalized current				
Upper power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$
<b>Lower Detectors (B)</b>				
Present lower detector current				
100% lower detector current				
Normalized detector current				
Average normalized current				
Lower power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$

Date:	Time:			
Channel	N41	N42	N43	N44
Is the channel indication reliable?	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
Instrument reading	%	%	%	%
<b>Upper Detectors (A)</b>				
Present upper detector current				
100% upper detector current				
Normalized detector current				
Average normalized current				
Upper power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$
<b>Lower Detectors (B)</b>				
Present lower detector current				
100% lower detector current				
Normalized detector current				
Average normalized current				
Lower power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$

ATTACH additional copies of this page as necessary.

UNIT ONE  
QUADRANT POWER TILT RATIO CALCULATION  
NIS METERS

Being performed once per:

- ☒ 7 Days (normal interval)      ☐ Shiftly  
☐ 12 Hours (with BwVSR 3.2.4.2.)      ☐ Other: \_\_\_\_\_

Date: Today	Time: NOW			
Channel	N41	N42	N43	N44
Is the channel indication reliable?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Instrument reading	100%	100%	100%	100%
<b>Upper Detectors (A)</b>				
Present upper detector current	190	185	190	185
100% upper detector current	194	179	192	186
Normalized detector current				
Average normalized current				
Upper power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$
<b>Lower Detectors (B)</b>				
Present lower detector current	170	150	165	165
100% lower detector current	170	153	165	168
Normalized detector current				
Average normalized current				
Lower power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$

Date:	Time:			
Channel	N41	N42	N43	N44
Is the channel indication reliable?	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
Instrument reading	%	%	%	%
<b>Upper Detectors (A)</b>				
Present upper detector current				
100% upper detector current				
Normalized detector current				
Average normalized current				
Upper power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$
<b>Lower Detectors (B)</b>				
Present lower detector current				
100% lower detector current				
Normalized detector current				
Average normalized current				
Lower power tilt ratio ( $\phi \leq 1.02$ )	$\phi$	$\phi$	$\phi$	$\phi$

ATTACH additional copies of this page as necessary.

## Job Performance Measure

**Identify leak isolation point from station drawings.**

JPM Number: R-204

Revision Number: 151

Date: 03 / 29 / 2016

Developed By: Eric Steinberg 03/29/2016  
Instructor Date

Validated By: Dan Burton 04/22/2016  
SME or Instructor Date

Reviewed By: Kevin Lueshen 04/22/2016  
Operations Representative Date

Approved By: Eric Steinberg 04/26/2016  
Training Department Date

**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

**NOTE:** All steps of this checklist should be performed upon initial validation.  
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
     Procedure 0BwOA SEC-4 Rev: 103  
     Procedure M-55-sheet 2A Rev: AV  
     Procedure M-55-sheet 2D Rev: K
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

SME / Instructor	Date
SME / Instructor	Date
SME / Instructor	Date



## Revision Record (Summary)

**Revision 151,** Updated to current revisions of the procedures and TQ-AA-150-J020 template.

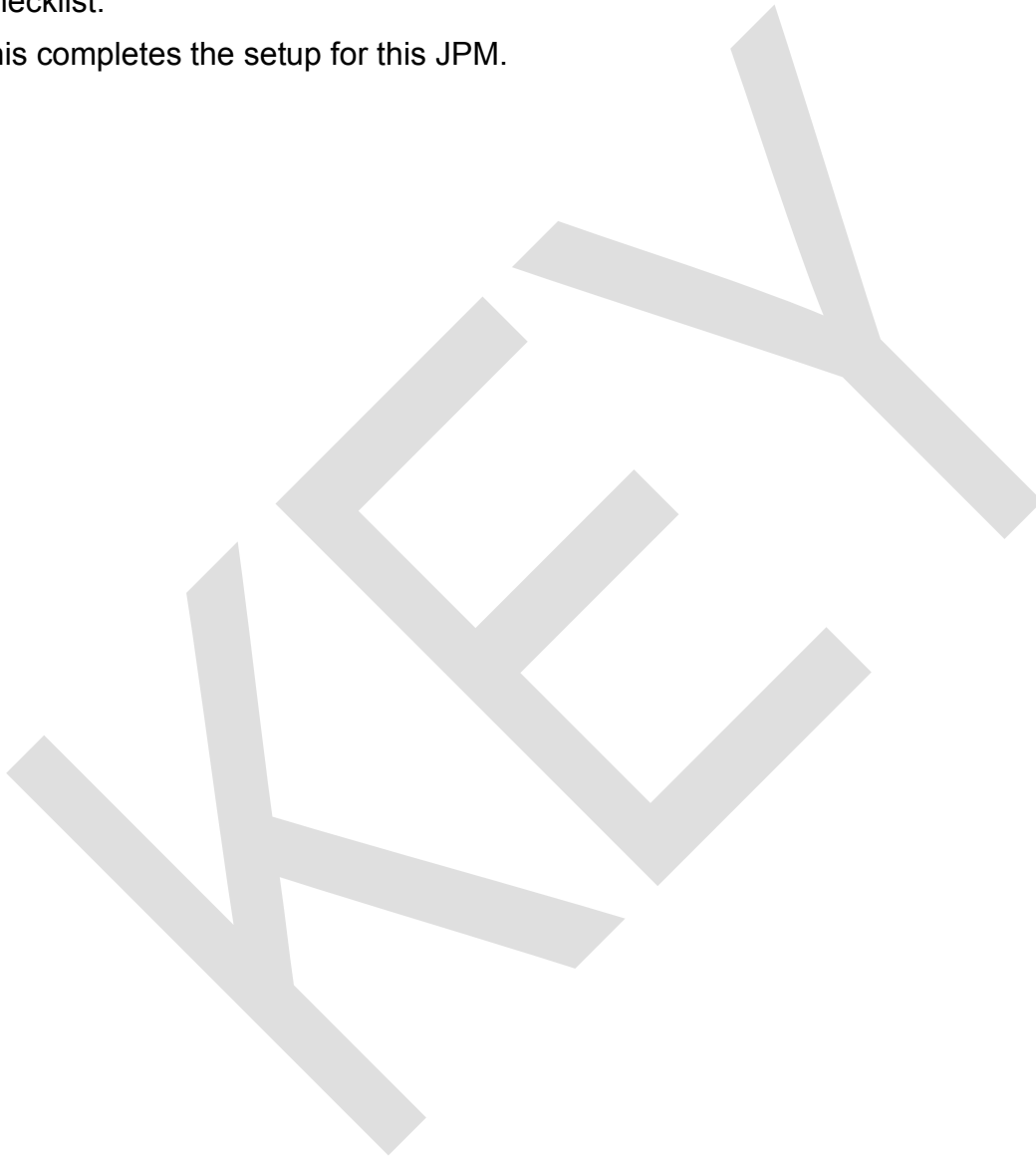


# Braidwood

## **SIMULATOR SETUP INSTRUCTIONS**

R-204 rev 151

1. Not required, but if used set up any at power IC.
2. Ensure the simulator ready to run checklist is complete.
3. Ensure all required procedures and prints are cleaned and put away.
4. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
5. This completes the setup for this JPM.



# Braidwood

## INITIAL CONDITIONS

R-204 rev 151

1. You are an extra NSO.
2. BOTH units are at 100% power.
3. An EO was re-positioning 2FW094, MAIN FEEDWATER H.P. CLEANUP LINE FLOW CONTROL VALVE, to adjust Steam Generator Blowdown Hotwell Pump discharge pressure.
4. An instrument air line broke at the 1" to ½" reducer upstream of the 2FW094, HP FLUSH LINE FLOW CONT VLV.
5. The EO reports the header goes into 401' elevation overhead and the EO cannot trace the header back to an isolation valve.
6. The crew entered 0BWOA SEC-4 LOSS OF INSTRUMENT AIR UNIT 0 due to dropping instrument air pressure and is currently at step 6.c.
7. Instrument air pressure is 87 psig and stable.

### INITIATING CUE

1. The US has directed you to determine an acceptable isolation point that will allow the unit to remain at power. Report your recommendation to the US.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

---

#### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

---

# Braidwood

R-204 rev 151

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1	Refer to 0BwOA SEC-4.	<ul style="list-style-type: none"> <li>Refers to 0BwOA SEC-4, table A.</li> <li>Determine 0IA907 valve is on P&amp;ID M-55-2A.</li> </ul>	—	—	—
CUE	<p>When P&amp;ID is located in the books on back table in simulator (or in the classroom), provide examinee a copy of P&amp;ID M-55 sheet 2A.</p> <p>If performed in the classroom, confirm where the examinee would locate the drawing (EDMS is also acceptable) and provide P&amp;ID M-55 sheet 2A.</p>				
2	Refer to P&ID M-55 sheet 2A.	<ul style="list-style-type: none"> <li>Refers to P&amp;ID 55 sheet 2A.</li> <li>Determines instrument air line 2IA100A is continued on P&amp;ID M-55-2D.</li> </ul>	—	—	—
CUE	When P&ID M-55 sheet 2D is identified as a needed print, provide examinee a copy of P&ID M-55 sheet 2D.				
3	Refer to P&ID M-55 sheet 2D.	<ul style="list-style-type: none"> <li>Refers to P&amp;ID 55 sheet 2D.</li> <li>Determines that instrument air header line number 2IA100A also supplies the feed reg vlaves and feed pump recirc valves.</li> </ul>	—	—	—
*4	<b>Determines isolation point.</b>	<ul style="list-style-type: none"> <li><b>Determines that 2IA1008 (or 2IA1007) is an acceptable isolation point.</b></li> <li><b>Recomends to US that 2IA1008 (or 2IA1007) should be closed to isolate the leak.</b></li> <li>Recommends that steam generator blowdown be secured or re-directed to the blowdown monitor tanks due to the loss of air to 2FW094.</li> </ul>	—	—	—

# Braidwood

R-204 rev 151

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	As the unit supervisor, acknowledge recommended isolation point, and inform examinee an EO is being dispatched to close the recommended valve.				
CUE	As the unit supervisor acknowledge the recommendation to re-direct or secure blowdown.				
CUE	The EO reports that the first recommended isolation point (2IA1008 or 2IA1007) is inaccessible and an alternate isolation point is required.				
*5	<b>Determines alternate isolation point.</b>	<ul style="list-style-type: none"> <li>• <b>Determines that 2IA1007 (or 2IA1008) is an acceptable alternate isolation point.</b></li> <li>• <b>Recomends to US that 2IA1007 (or 2IA1008) should be closed to isolate the leak.</b></li> </ul>	—	—	—
CUE	As the unit supervisor acknowledge recommended isolation point, and inform examinee an EO is being dispatched to close the recommended valve.				
CUE	This completes this JPM.				

JPM Stop Time: \_\_\_\_\_

## JPM SUMMARY

Operator's Name: \_\_\_\_\_ Emp. ID#: \_\_\_\_\_

Job Title: ☐ EO ☒ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Identify leak isolation point from station mechanical drawings.JPM Number: R-204Revision Number: 151Task Number and Title: R-AM-134, Troubleshoot plant equipment using plant mechanical & electrical drawings.K/A Number and Importance: 078000G2.2.41 3.5/3.9Suggested Testing Environment: Classroom or SimulatorAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ NoReference(s): 0BwOA SEC-4, rev 103, LOSS OF INSTRUMENT AIR UNIT 0, M-55 Sheet 2A, rev AW, DIAGRAM OF TURBINE ROOM INSTRUMENT AIR, M-55 Sheet 2D, rev K, DIAGRAM OF INSTRUMENT AIR UNIT 2Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ OtherTesting Method: ☐ Simulate ☒ PerformEstimated Time to Complete: 13 minutes

Actual Time Used: \_\_\_\_\_ minutes

## EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Evaluator's Name (Print): \_\_\_\_\_

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

# **Braidwood**

## **INITIAL CONDITIONS**

R-204 rev 151

1. You are an extra NSO.
2. BOTH units are at 100% power.
3. An EO was re-positioning 2FW094, MAIN FEEDWATER H.P. CLEANUP LINE FLOW CONTROL VALVE, to adjust Steam Generator Blowdown Hotwell Pump discharge pressure.
4. An instrument air line broke at the 1" to ½" reducer upstream of the 2FW094, HP FLUSH LINE FLOW CONT VLV.
5. The EO reports the header goes into 401' elevation overhead and the EO cannot trace the header back to an isolation valve.
6. The crew entered 0BwOA SEC-4 LOSS OF INSTRUMENT AIR UNIT 0 due to dropping instrument air pressure and is currently at step 6.c.
7. Instrument air pressure is 87 psig and stable.

## **INITIATING CUE**

1. The US has directed you to determine an acceptable isolation point that will allow the unit to remain at power. Report your recommendation to the US.

## Job Performance Measure

### Perform Offsite Notification (NARS Form Transmittal) for Unusual Event

JPM Number: R-401

Revision Number: 151

Date: 03 / 22 / 2016

Developed By: Eric Steinberg 03/22/2016  
Instructor Date

Validated By: Dan Burton 04/22/2016  
SME or Instructor Date

Reviewed By: Kevin Lueshen 04/23/2016  
Operations Representative Date

Approved By: Eric Steinberg 04/23/2016  
Training Department Date



**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

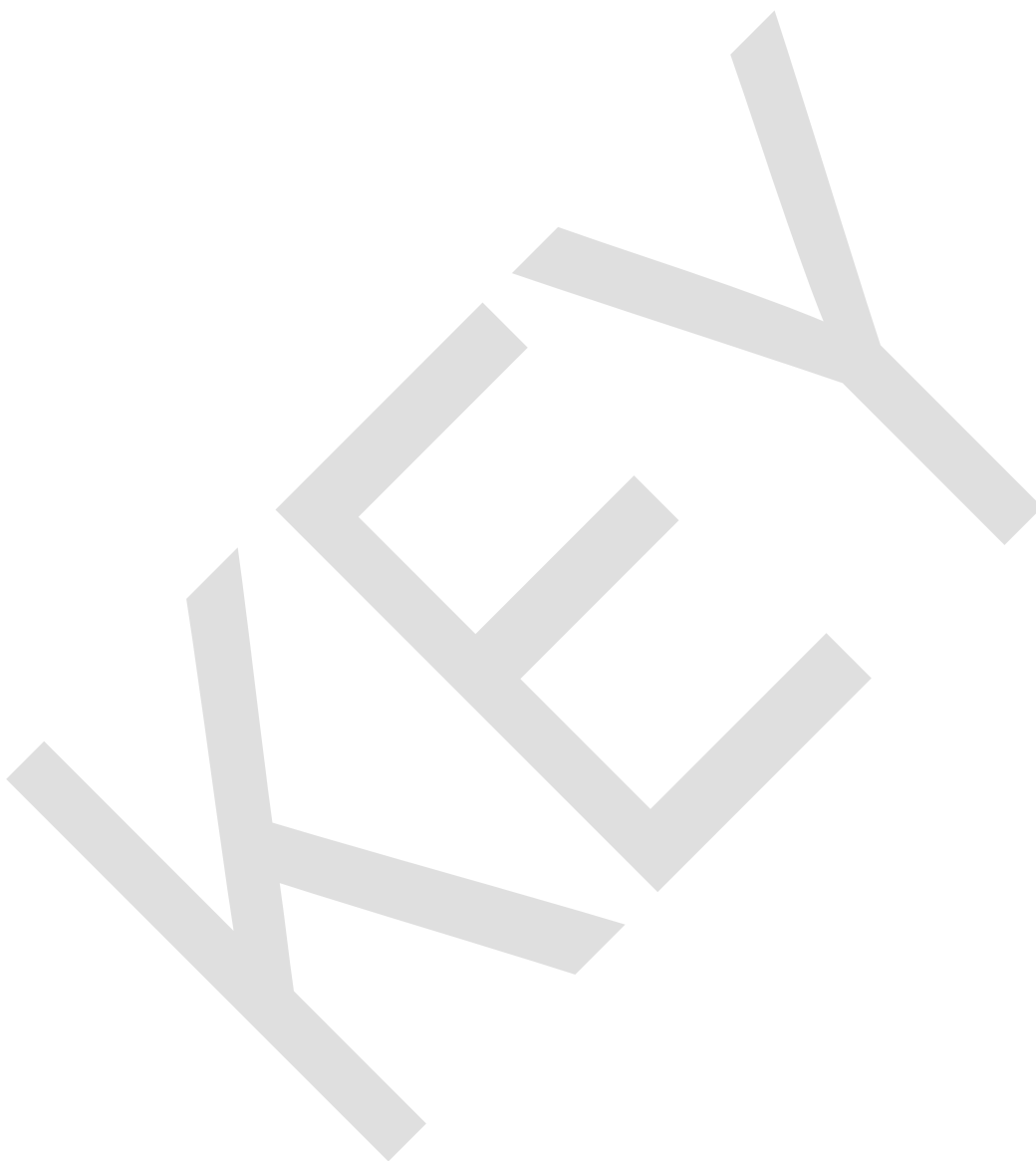
**NOTE:** All steps of this checklist should be performed upon initial validation.  
Prior to JPM usage, revalidate JPM using steps 9 and 13 below.

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
     Procedure EP-MW-114-100 Rev: 016  
     Procedure EP-MW-114-100-F01 Rev: H  
     Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

_____	_____
SME / Instructor	Date
_____	_____
SME / Instructor	Date
_____	_____
SME / Instructor	Date

## Revision Record (Summary)

**Revision 151,** Updated JPM to current template format and revised procedures.



# Braidwood

## SIMULATOR SETUP INSTRUCTIONS

R-401 rev 151

1. Not required.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. If the simulator NARS phones are going to be used, ensure they are setup to transmit to the booth operator, not the NARS line.
3. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
4. This completes the setup for this JPM.

# Braidwood

## INITIAL CONDITIONS

R-401 rev 151

1. You are an extra NSO.
2. Unit 1 reactor trip has occurred.
3. An unusual event was declared two minutes ago.
4. EP-MW-114-100-F-01, NUCLEAR ACCIDENT REPORTING SYSTEM (NARS) FORM has been filled out and approved.
5. The NARS phone is operable.
6. This is a **TIME CRITICAL JPM**.

## INITIATING CUE

1. The Shift Manager directs you to transmit the NARS form per EP-MW-114-100, MW Region Offsite Notifications.
2. Inform the Shift Manager when the NARS form has been transmitted.
3. This is a **TIME CRITICAL JPM**.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

---

### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM.

Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

---

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
NOTE: JPM critical time (13 minutes) starts when the initiating cue has been read to the examinee and stops after the initial roll call is made.					
1	Determine correct communications method.	<ul style="list-style-type: none"> <li>Refer to EP-MW-114-100 and determine step 4.3 needs to be performed</li> <li>Refer to EP-MW-114-100-F-01 and determine NARS Code 20 to be used to transmit NARS form.</li> </ul>	_____	_____	_____
NOTE: If performed in the simulator, ensure the booth operator is prepared to answer the NARS phone and give the cues.					

*2	<b>Establish communications</b>	<p>Establish communications as follows:</p> <ul style="list-style-type: none"> <li>• <b>Pick up the NARS phone.</b></li> <li>• <b>Use code BW 20.</b> <ul style="list-style-type: none"> <li>○ Read the following message: “This is the Exelon Nuclear Braidwood Station Main Control Room. Please Standby for a NARS message.”</li> </ul> </li> <li>• <b>Read the following message again as agencies pick up: “This is the Exelon Nuclear Braidwood Station Main Control Room. Please Standby to receive a NARS message and respond as the roll is called.”</b></li> <li>• <b>TAKE initial roll call.</b></li> <li>• <b>Mark initial Boxes for IEMA and Illinois REAC</b></li> <li>• <b>Record time and date initial roll call complete.</b></li> </ul>	_____	_____	_____
CUE	<p>After using code BW 20 and reading initial roll call:</p> <p>Respond IEMA online when IEMA is called.</p> <p>Respond REAC online when Illinois REAC is called.</p>				
NOTE:	<p>Critical time is met when the examinee completes roll call. Record completion <b>TIME:</b>_____.</p>				

*3	Verbally transmit the NARS Form.	<p>Verbally transmit the NARS Form:</p> <ul style="list-style-type: none"> <li>• <b>Utility Message No: <u>1</u></b></li> <li>○ State Message No: <u>N/A</u></li> <li><b>1. Status – <u>[B] Drill/Exercise</u></b></li> <li><b>2. Station – <u>[A] Braidwood</u></b></li> <li><b>3. Onsite Condition – <u>[A] Unusual Event</u></b></li> <li><b>4. Accident Classified:</b> <ul style="list-style-type: none"> <li>○ Time: <u>Two minutes ago.</u></li> <li>○ Date: <u>Today.</u></li> <li>○ EAL # : <u>MU6</u></li> <li>○ Accident Terminated Date and Time: <u>N/A</u></li> </ul> </li> <li><b>5. Release Status: <u>[A] None</u></b></li> <li><b>6. Type of Release: <u>[A] Not Applicable</u></b></li> <li><b>7. Wind Dir: <u>270</u></b></li> <li><b>8. Wind Speed:</b> <ul style="list-style-type: none"> <li>○ <u>[A] is N/A</u></li> <li>○ <u>[B] 4.5 Miles/Hr</u></li> </ul> </li> <li><b>9. Recommended Actions: <u>Utility Recommendation: [A] None</u></b></li> <li><b>10. Additional Information: <u>None</u></b></li> <li><b>Verified With: <u>U. Supervisor</u></b></li> <li><b>Approved By: <u>S. Manager</u></b></li> </ul>	—	—	—
4	Complete the NARS form.	<p>Fill in the following information on the NARS form after transmitting info in blocks 1-10:</p> <ul style="list-style-type: none"> <li>• Mark 11A, EXELON</li> <li>• Examinee Name</li> <li>• Outside line number</li> <li>• Current time/ Date</li> <li>• Request and record name and organization of the person receiving the message.</li> <li>• Current time/date</li> </ul>	—	—	—
CUE	When asked for name and organization respond John Smith, IEMA.				

5	Perform final roll call.	Perform final roll call and records by marking boxes <ul style="list-style-type: none"> <li>• IEMA</li> <li>• Illinois REAC</li> <li>• Asks if there are any question about the information provided.</li> </ul>	—	—	—
CUE	When called on for roll call respond IEMA, and Illinois REAC. Respond no questions when asked.				
6	Complete call.	State "NARS communication is complete."	—	—	—
<p>NOTE: Critical time stopped after initial roll call was complete JPM step 3.</p> <p>Determine critical time:</p> <p>_____ - _____ = _____</p> <p>(Time initial roll call complete) (JPM start time) ≤ 13 minutes</p>					
*7	Critical time met.	Initial roll call complete ≤ 13 minutes.	—	—	—
CUE	That completes the JPM.				

JPM Stop Time: \_\_\_\_\_

-----



**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Perform Offsite Notification (NARS form transmittal) for Unusual EventJPM Number: R-401Revision Number: 151Task Number and Title: R-ZP-004, Transmit NARS formK/A Number and Importance: R-002000G2.4.39, 3.9Suggested Testing Environment: SimulatorAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☒ Yes ☐ NoReference(s): EP-MW-114-100, Rev. 16, MW Region Offsite Notifications  
EP-MW-114-100-F-01, Rev. H, Nuclear Accident Reporting System (NARS)  
Form**Actual Testing Environment:** ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 10 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe operator's performance was evaluated against standards  
contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## INITIAL CONDITIONS

1. You are an extra NSO.
2. Unit 1 reactor trip has occurred.
3. An unusual event was declared two minutes ago.
4. EP-MW-114-100-F-01, NUCLEAR ACCIDENT REPORTING SYSTEM (NARS) FORM has been filled out and approved.
5. The NARS phone is operable.
6. This is a **TIME CRITICAL JPM**.

## INITIATING CUE

1. The Shift Manager directs you to transmit the NARS form per EP-MW-114-100, MW Region Offsite Notifications.
2. Inform the Shift Manager when the NARS form has been transmitted.
3. This is a **TIME CRITICAL JPM**.