Job Performance Measure

Perform Shutdown Margin Calculation

JPM Number: R-104

Revision Number: 2018

Date: 1/23/2018

Developed By:	Eric Steinberg /s/ Instructor	1/23/2018 Date
Validated By:	John Logan /s/ SME or Instructor	2/23/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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.

__EWS__ 1. Task description and number, JPM description and number are identified.

__EWS__ 2. Knowledge and Abilities (K/A) references are included.

__EWS__ 3. Performance location specified. (in-plant, control room, simulator, or other)

__EWS__ 4. Initial setup conditions are identified.

__EWS__ 5. Initiating cue (and terminating cue if required) are properly identified.

__EWS__ 6. Task standards identified and verified by SME review.

__EWS__ 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.

__EWS__ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BwOSR 3.1.1.1-2 Rev: 3
Procedure 1BwCB (Various) Rev: N/A
Procedure 1BwOL 3.1.4 Rev: 6

__EWS__ 10. Verify cues both verbal and visual are free of conflict.

__EWS__ 11. Verify performance time is accurate

__EWS__ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

__EWS__ 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 2015, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2018, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

NOTE: SIMULATOR setup for this JPM is not required. This JPM may be run in any location as long as the required materials are present.

1. If simulator setup is desired, perform the following:
   a) Reset the simulator to IC-21 or equivalent 100% power IC.
   b) Place rods in Manual at 220 steps.
   c) When the above steps are completed for this and other JPMs to be run concurrently, then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
2. Perform surveillance beforehand to obtain correct numbers for grading purposes.
3. This completes the setup for this JPM.

JPM SUMMARY

Operator's Name: _____ **Emp ID#:** _____

Job Title: ☐ EO ☒ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Perform Shutdown Margin Calculation**
JPM Number: **R-104** Revision Number: **2018**
Task Number and Title: **R-RK-005, Perform SDM Calculation**
K/A Number and Importance: **001000G2.1.25, 3.9/N/A**
Suggested Testing Environment: **Simulator/Classroom**
Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☒ Yes ☐ No
Reference(s): 1BwOSR 3.1.1.1-2, UNIT ONE SHUTDOWN MARGIN SURVEILLANCE DURING OPERATION, Rev. 3
BwCB-1 (Various), BRAIDWOOD CURVE BOOK, Unit 1
1BwOL 3.1.4, LCOAR ROD GROUP ALIGNMENT LIMITS TECH SPEC LCO 3.1.4, Rev. 5
Materials:

1. 1BwOSR 3.1.1.1-2
2. BwCB0-1 (Various)
3. Braidwood Technical Requirements Manual (TRM)

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **23** minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:
Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory

Comments: _____

_____

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Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

INITIAL CONDITIONS

1. You are an extra NSO.
2. Unit 1 is at full power (12,000 EFPH) with all control systems in automatic except rod control, which is in manual.
3. Most recent B10 Corrected RCS Boron sample is 50 ppm taken 1 hour ago.
4. Control Bank 'D' is at 220 steps.
5. Tave is 587°F

INITIATING CUE

1. 15 minutes ago, it was determined rods M-4 and M-12 are inoperable and immovable due to excessive friction. The QNE is informed.
2. The US has directed you to perform 1BwOSR 3.1.1.1-2 per LCOAR 1BwOL 3.1.4. Condition A, Required Action A.1.1 and inform the US of the results.
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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to 1BwOSR 3.1.1.1-2.	Open 1BwOSR 3.1.1.1-2.	___	___	___
CUE	Provide the examinee a copy of the procedure. All Prerequisites, Precautions, Limitations and Actions have been met.				
2	Document the "Present Conditions."	Determine and record the following: • Date and Time (step F.1.a). • Core EFPH (Burnup) from 1BwOS NR-1 (step F.1.b). • Core Average Temperature (step F.1.c). • Power Level (step F.1.d). • Present Boron Concentration (step F.1.e).	___	___	___
CUE	Core Average Burnup is 12,000 EFPH. Tave is 587°F. Reactor power is 100%.				
CUE	RCS Boron is 50 ppm from a sample 1 hour ago, no changes have been made.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3	**Determine total worth due to rods.**	Determine total worth due to rods and record the following: *(Technical Human Performance)* ○ Record Control Bank position (step F.2.a). • **Record remaining worth of the Control Banks from BwCB-1 Figure 2 or 2a based on recorded position in step F.2.a (step F.2.b).** • **SUBTRACT the Control Bank remaining worth from the Control Bank total worth to obtain the total available worth due to Control Bank position (step F.2.c).** • **ADD the Shutdown Bank worth (from BwCB-1, Table 4-1) plus the total available Control Bank worth (F.2.c.) and record the total worth due to rods (step F.2.d).**	___	___	___
CUE	Control Bank D position = 220 steps. Actual Value: 15 ± 15 (Figure 2) Student Value: _____ 3431.2pcm – 15 pcm = 3416.2 pcm. 3680.1 pcm + 3416.2 pcm = 7096.3 pcm ± 15 Student Value:_____				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*4	**Determine actual reactivity available due to rods.**	Determine and record actual reactivity due to rods as follows: *(Reactor Safety)* • **Record number of immovable or untrippable control rods (step F.3.a).** • **Record highest stuck rod worth from BwCB-1 Table 4-1 (step F.3.b).** • **MULTIPLY the number of immovable or untrippable control rods (step F.3.a) by 2000 pcm (step F.3.c).** • **Total rod worth (F.2.d) minus worth of immovable or untrippable rods (F.3.c.) minus highest stuck rod worth (F.3.b) = actual reactivity available due to rods (step F.3.d).**	___	___	___
CUE	2 untrippable rods. 1069.8 pcm. 2 x 2000 = 4000 pcm. (7096.3 pcm) – 4000 – 1069.8 = 2026.5 pcm ± 15 Student Value: _____				
*5	**Determine current Power Defect.**	**Determine and record the current power defect for the Boron Concentration and Power Level from either:** ***(Procedural Adherence)*** • **Figure 17A: 2865 ± 30 pcm** **- OR -** • **Table 2-1: 2862 pcm** ○ Check appropriate box to indicate method used.	___	___	___
NOTE	2865 pcm ± 30; 2862 pcm if Table 2-1 used.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*6	**Perform Shutdown Margin Verification.**	Perform Shutdown Margin Verification as follows: *(Reactor Safety)* • **ADD total corrected rod worth (F.3.d) to the power defect (F.4.a) (step F.5.a).** • **Record the Shutdown Margin Limit for Modes 1 and 2 from the COLR (step F.5.b).** • **VERIFY the available shutdown reactivity recorded in step F.5.a is greater than or equal to the minimum required Shutdown Margin Limit recorded in step F.5.b (step F.5.c).** ○ Inform US that Shutdown Margin is NOT met and LCOAR 1BwOL TRM 3.1.h is required to be initiated.	___	___	___
CUE	2026.5 pcm + -2878pcm = -835.5 pcm +/- 45 pcm. 1300 pcm. -835.5 pcm < 1300 pcm. Student Value: _____				
CUE	As US, acknowledge inadequate SDM and report that the crew will take the appropriate actions.				
NOTE	Record the time (_____) that the SDM is determined to be unacceptable. Determine CRITICAL TIME by subtracting time recorded above from JPM start time: _____ - _____ = _____ minutes.				
*7	**Verify TIME CRITICAL actions are completed.**	Verify TIME CRITICAL actions are completed. *(Regulatory Compliance)* • **CRITICAL TIME is ≤ 20 minutes.**	___	___	___
CUE	This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are an extra NSO.
2. Unit 1 is at full power (12,000 EFPH) with all control systems in automatic except rod control, which is in manual.
3. Most recent B10 Corrected RCS Boron sample is 50 ppm taken 1 hour ago.
4. Control Bank ‘D’ is at 220 steps.
5. Tave is 587°F

INITIATING CUE

1. 15 minutes ago, it was determined rods M-4 and M-12 are inoperable and immovable due to excessive friction. The QNE is informed.
2. The US has directed you to perform 1BwOSR 3.1.1.1-2 per LCOAR 1BwOL 3.1.4. Condition A, Required Action A.1.1 and inform the US of the results.
3. **THIS IS A TIME CRITICAL JPM.**

Job Performance Measure

Calculate the Boric Acid Flow Setpoint for Shiftly Daily Surveillance

JPM Number: R-112

Revision Number: 2018

Date: 1/20/2018

Developed By:	Eric Steinberg /s/ Instructor	1/20/2018 Date
Validated By:	John Logan /s/ SME or Instructor	2/23/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 0.1-1,2,3 Rev: 88draft
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 2018, Revision includes 7300 mod changes to procedure and current revision of TQ-AA-150-J020 JPM Template. Modified ADMIN JPM for ILT 17-1 NRC Exam.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-21, if used.

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. The simulator is NOT required for this JPM.
   - If used, ensure the boric acid flow controller setpoint is ~15.8 GPM before bringing the student in.
3. This completes the setup for this JPM.
4. If repeating the JPM without resetting the simulator, restore the boric acid flow controller setpoint to ~15.8 GPM.

INITIAL CONDITIONS

1. Unit 1 is at 100% power.
2. Chemistry has just completed analysis of BAST and RCS for boric acid concentration.
3. The BAST boron concentration is 7262 ppm.
4. Unit 1 RCS boron concentration is currently 958 ppm with a B-10 ratio of 0.190.
5. The eSST Chemistry Database is currently unavailable.

INITIATING CUE

1. You are the oncoming NSO and the US has directed you to provide an IV of the current boric acid flow controller setpoint per the applicable step in 1BwOSR 0.1-1,2,3, “UNIT ONE MODES 1, 2 AND 3 SHIFTLY AND DAILY OPERATING SURVEILLANCE,” before taking the shift.

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Locate procedure to be used to calculate setpoint.	Locate 1BwOSR 0.1-1,2,3 UNIT ONE MODES 1, 2 and 3 SHIFTLY AND DAILY OPERATING SURVEILLANCE, step 15.	___	___	___
CUE	Once the examinee locates the procedure, provide a copy of 1BwOSR 0.1-1,2,3.				
2	Determine current RCS boron concentration and B10 ratio.	Refer to cue sheet and verify RCS boron concentration of 958 ppm and B10 ratio of 0.190.	___	___	___
CUE	If asked, the numbers where provided by Chemistry from the last sample taken per the cue.				
***3**	**Determine the desired Boron concentration from RMCS.**	Calculate the effective boron concentration of the RCS: *(procedural adherence)* 958 x .190/.199 = **914.67 ppm +/-1 ppm**	___	___	___
4	Determine the current BAST concentration.	Refer to cue sheet and verify BAST concentration of 7262 ppm.	___	___	___
NOTE	If asked, the numbers where provided by Chemistry from the last sample taken per the cue.				
***5**	**Calculate the required boric acid flow.**	Calculate the desired boric acid flow: *(procedural adherence)* 120 gpm X 914.67/7262 = **15.11 +/-.1 gpm**			
CUE	If not already provided, provide the examinee the picture of the 1FK-0110 and ask any further action is required.				
***6**	**Determine a Boric Acid flow controller setpoint adjustment is required.**	Inform the US that the boric acid flow controller **setpoint needs to be adjusted**.	___	___	___
CUE	Another NSO will complete the procedure. This completes the JPM.				

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☒ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Calculate the Boric Acid Flow Setpoint for Shiftly Daily Surveillance**

JPM Number: **R-112** Revision Number: **2018**

Task Number and Title: **R-CV-006, Monitor the Chemical and Volume Control System Operation**

K/A Number and Importance: **004000G2.1.37, 4.3/N/A**

Suggested Testing Environment: **This is an admin JPM and can be performed in the classroom or in the simulator, if desired.**

Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s): 1BwOSR 0.1-1,2,3 UNIT ONE MODES 1, 2 AND 3 SHIFTLY AND DAILY OPERATING SURVEILLANCE, Rev 88draft

Materials:

1. 1BwOSR 0.1-1,2,3

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 10 minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory

Comments: _____

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Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

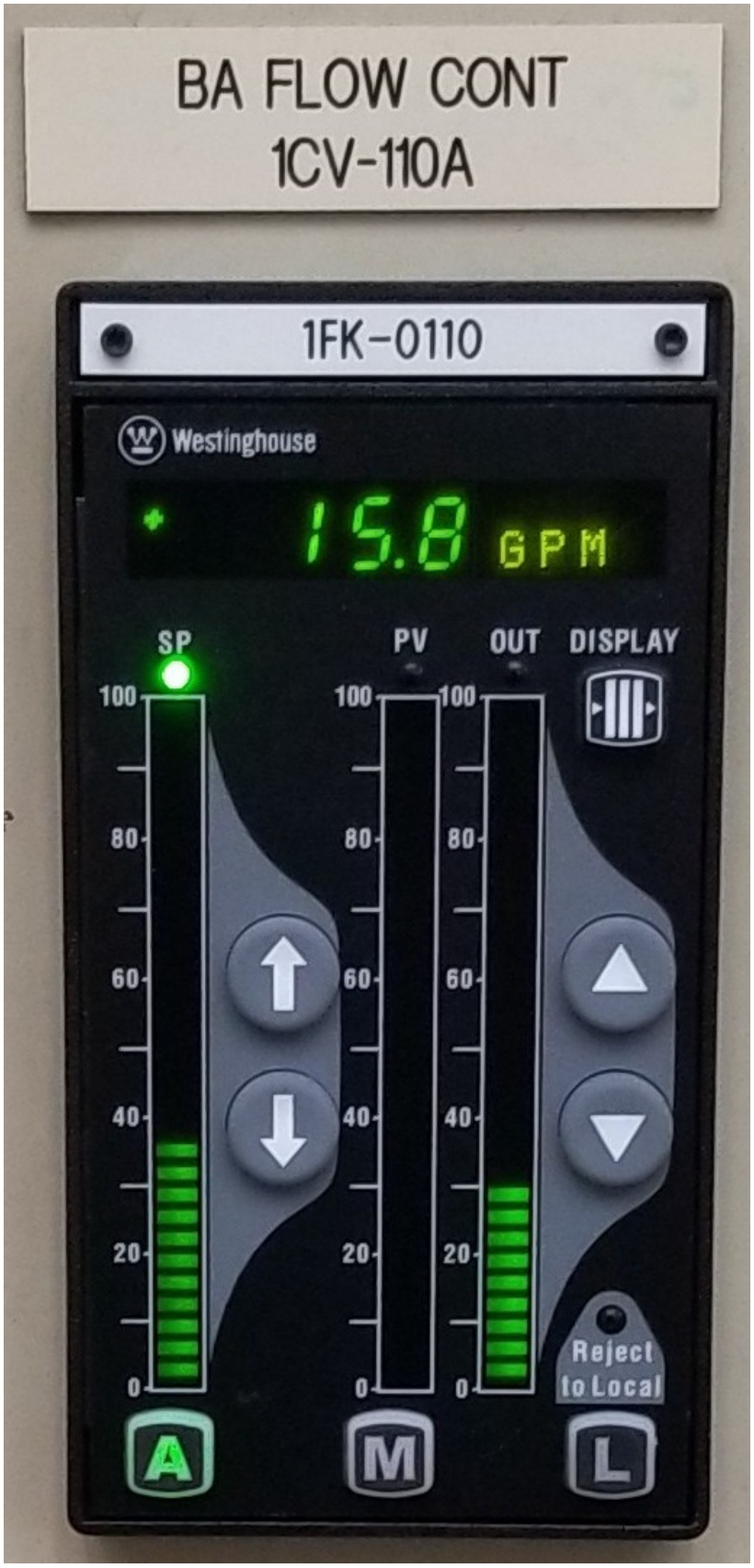
SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. Unit 1 is at 100% power.
2. Chemistry has just completed analysis of BAST and RCS for boric acid concentration.
3. The BAST boron concentration is 7262 ppm.
4. Unit 1 RCS boron concentration is currently 958 ppm with a B-10 ratio of 0.190.
5. The eSST Chemistry Database is currently unavailable.

INITIATING CUE

1. You are the oncoming NSO and the US has directed you to provide an IV of the current boric acid flow controller setpoint per the applicable step in 1BwOSR 0.1-1,2,3, “UNIT ONE MODES 1, 2 AND 3 SHIFTLY AND DAILY OPERATING SURVEILLANCE,” before taking the shift.



SRRS: 3D.100; There are no retention requirements for this section

Job Performance Measure

Verify Worker Tagout Checklist

JPM Number: R-203

Revision Number: 2018

Date: 1/30/18

Developed By:	Eric Steinberg /s/ Instructor	1/30/2018 Date
Validated By:	John Logan /s/ SME or Instructor	2/23/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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 OP-AA-109-101 Rev: 12
Procedure BwOP CV-10 Rev: 28
Procedure M-138, Sheet 5B Rev: G
Procedure BwOP WX-197 Rev: 26

_____ 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 2010, Change format and verify latest procedure revisions

Revision 2012, Per ATI 1089778-64 all JPMs were updated as applicable to each JPM the following information - KA, Critical Path, Cues, Boron Concentration, Fundamentals. Also Updated to latest procedure revisions if changed.

Revision 2013, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template

Revision 2014, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2015, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2018, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. IF THE SIMULATOR IS USED, reset the simulator to IC-21 or equivalent 100% power IC.
2. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
3. This completes the setup for this JPM.

JPM SUMMARY

Operator's Name: _____ **Emp ID#:** _____

Job Title: ☐ EO ☒ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Verify Worker Tagout Checklist**

JPM Number: **R-203** Revision Number: **2018**

Task Number and Title: **R-AM-010, Process Clearance Orders from Planning to RTS**

K/A Number and Importance: **004000G2.2.13, 4.1/N/A**

Suggested Testing Environment: **Classroom**

Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s): OP-AA-109-101, CLEARANCE AND TAGGING, Rev. 12
BwOP CV-10, CV FILTERS ISOLATION AND RETURN TO SERVICE, Rev. 28
M-138, Sheet 5B, DIAGRAM OF CVCS AND BTRS, Rev. G
BwOP WX-197, CHANGING LIQUID RADWASTE FILTERS, Rev. 26

Materials:

1. OP-AA-109-101
2. BwOP CV-10
3. M-138, sheet 5B
4. BwOP WX-197

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **30** minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory

Comments: _____

_____

_____

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_____

Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

INITIAL CONDITIONS

1. You are the Unit 2 Assist NSO.
2. 2CV03F, Unit 2 RC Filter, needs to be replaced.
3. A worker tagout for 2CV03F has been prepared by another NSO.

INITIATING CUE

1. The Unit 2 Unit Supervisor directs you to perform second approval of OP-AA-109-101, Attachment 14, WTO FORM HANG/LIFT SECTION, to isolate and drain 2CV03F in accordance with BwOP CV-10 “CV FILTERS ISOLATION AND RETURN TO SERVICE.”
2. A clearance order pre-job brief has been previously conducted.
3. Inform the Unit Supervisor when you have completed OP-AA-109-101, Attachment 14.

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to BwOP CV-10 "CV FILTERS ISOLATION AND RETURN TO SERVICE."	Refer to BwOP CV-10: • Determines step F.3 needs to be performed.	___	___	___
CUE	Provide examinee a copy of BwOP CV-10, OP-AA-109-101 including marked up Attachment 14, BwOP WX-197 and M-138, Sheet 5B.				
2	Refer to OP-AA-109-101, CLEARANCE AND TAGGING.	Refer to OP-AA-109-101.	___	___	___
3	Refer to drawing M-138, Sheet 5B, DIAGRAM OF CVCS AND BTRS.	Refer to M-138, Sheet 5B.	___	___	___
4	Verify the clearance boundary for 2CV03F.	Determine clearance boundary correct: • 2CV129 C/S, Demin Hi Temp Divert Valve. • 2CV8421, RC Filter Bypass Valve. • 2CV8425, RC Filter Inlet Isol Valve. • 2CV8422, RC Filter Outlet Isol Valve. • 2CV8424, RC Filter Drain Valve. • 2CV8423, RC Filter Vent Valve.	___	___	___
NOTE	The examinee may determine the clearance position is incorrect (JPM step 7) prior to determining the component is incorrect (JPM step 5), or the examinee may discover both errors simultaneously. The examinee must identify BOTH errors to complete Critical Stps 5 & 7.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	The JPM contains a corrected Worker Tagout checklist to be given to the examinee after the errors are identified. If the examinee first determines the incorrect sequence is listed on the Worker Tagout checklist prior to determining the incorrect position is listed, provide examinee JPM Attachment A. If the examinee first determines the incorrect position is listed on the Worker Tagout checklist, provide examinee JPM Attachment B. When the examinee has determined BOTH the incorrect sequence and position is listed on the Worker Tagout checklist, provide examinee JPM Attachment C.				
***5**	**Determine the clearance sequence for 2CV03F is incorrect.**	Determines clearance sequence is incorrect: fix to prevent lifting the relief or damage to filter housing. *(Industrial Safety)* 1. 2CV129 C/S, Demin Hi Temp Divert Valve. 2. 2CV8421 RC Filter Bypass Valve. **3. 2CV8422 RC Filter Outlet Isol Valve.** **4. 2CV8425 RC Filter Inlet Isol Valve.** 5. 2CV8424 RC Filter Drain Valve. 6. 2CV8423 RC Filter Vent Valve. ○ Notify SM and NSOs of sequencing error.	___	___	___
CUE	Acknowledge as Unit Supervisor and inform examinee the checklist sequence will be corrected.				
NOTE	Hand examinee corrected worker tagout in accordance with the evaluator NOTE above, **JPM ATTACHMENT A located in back of JPM** is SEQUENCE correction.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
6	Verify the tag type for 2CV03F.	Verifies clearance tag type: • 2CV129 C/S, Demin Hi Temp Divert Valve – CI. • 2CV8421 RC Filter Bypass Valve – RI. • 2CV8425 RC Filter Inlet Isol Valve – RD. • 2CV8422 RC Filter Outlet Isol Valve – RD. • 2CV8424 RC Filter Drain Valve – RI. • 2CV8423 RC Filter Vent Valve – RI.	___	___	___
*7	**Determine the clearance position for the 2CV03F is incorrect.**	Determine clearance position is incorrect: *(Industrial Safety)* ○ 2CV129 C/S, Demin Hi Temp Divert Valve – INFO. ○ 2CV8421 RC Filter Bypass Valve – INFO. ○ 2CV8425 RC Filter Inlet Isol Valve – CLOSED. • **2CV8422 RC Filter Outlet Isol Valve – OPEN.** ○ 2CV8424 RC Filter Drain Valve – INFO. ○ 2CV8423 RC Filter Vent Valve – INFO. ○ Notify SM and NSOs of position error.	___	___	___
CUE	Acknowledge as Unit Supervisor and inform examinee the checklist position will be corrected.				
NOTE	Hand examinee corrected worker tagout in accordance with the evaluator NOTE above, **JPM ATTACHMENT B located in back of JPM** is POSITION correction. **JPM ATTACHMENT C located in back of JPM** is SEQUENCE & POSITION correction.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
8	Approve the WTO Hang Section.	• Review special instructions. • Sign the 'Second Approval' line. • Fill in date. • Inform US that the 2nd approval is complete.	___	___	___
CUE	US acknowledges that the 2nd approval is complete. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 2 Assist NSO.
2. 2CV03F, Unit 2 RC Filter, needs to be replaced.
3. A worker tagout for 2CV03F has been prepared by another NSO.

INITIATING CUE

1. The Unit 2 Unit Supervisor directs you to perform second approval of OP-AA-109-101, Attachment 14, WTO FORM HANG/LIFT SECTION, to isolate and drain 2CV03F in accordance with BwOP CV-10 “CV FILTERS ISOLATION AND RETURN TO SERVICE.”
2. A clearance order pre-job brief has been previously conducted.
3. Inform the Unit Supervisor when you have completed OP-AA-109-101, Attachment 14.

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

Exceptional C/O: ☒ Mode Dependent: ☐ Condition Dependent: ☐

Operational Risk: ☐ Environmental Risk: ☐ Atmospheric Risk ☐ Reactivity Risk: ☐

WORKER TAGOUT# **PO7-005** JOB DESCRIPTION: **CHANGE 2CV03F**

WORKING DEPARTMENT: **OPS** W/O OR W/R: **12345** EQUIP. TAG# **2CV03F**

COMPONENT DESCRIPTION: **UNIT 2 RC FILTER**

FIRST APPROVAL: ***Jim NSO*** DATE: ***Today***

SECOND APPROVAL: _____ DATE: _____

WTO AUTHORIZATION: _____ DATE/TIME _____

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
2CV129 C/S (DEMIN HI TEMP DIVERT VLV)	1	CI	INFO				3	AS REQUIRED		
2CV8421 RC FILTER BYPASS VLV	2	RI	INFO				1	OPEN		
2CV8425 RC FILTER INLET ISOL VLV	3	RD	CLOSED				2	CLOSED		
2CV8422 RC FILTER OUTLET ISOL VLV	4	RD	OPEN				2	CLOSED		
2CV8424 RC FILTER DRAIN VLV	5	RI	INFO				2	CLOSED		
2CV8423 RC FILTER VENT VLV	5	RI	INFO				2	CLOSED		

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)

JPM ATTACHMENT A

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

Exceptional C/O: ☒ Mode Dependent: ☐ Condition Dependent: ☐

Operational Risk: ☐ Environmental Risk: ☐ Atmospheric Risk ☐ Reactivity Risk: ☐

WORKER TAGOUT# **PO7-005** JOB DESCRIPTION: **CHANGE 2CV03F**

WORKING DEPARTMENT: **OPS** W/O OR W/R: **12345** EQUIP. TAG# **2CV03F**

COMPONENT DESCRIPTION: **UNIT 2 RC FILTER**

FIRST APPROVAL: ***Jim NSO*** DATE: ***Today***

SECOND APPROVAL: _____ DATE: _____

WTO AUTHORIZATION: _____ DATE/TIME _____

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
2CV129 C/S (DEMIN HI TEMP DIVERT VLV)	1	CI	INFO				3	AS REQUIRED		
2CV8421 RC FILTER BYPASS VLV	2	RI	INFO				1	OPEN		
2CV8422 RC FILTER OUTLET ISOL VLV	3	RD	CLOSED				2	CLOSED		
2CV8425 RC FILTER INLET ISOL VLV	4	RD	CLOSED				2	CLOSED		
2CV8424 RC FILTER DRAIN VLV	5	RI	INFO				2	CLOSED		
2CV8423 RC FILTER VENT VLV	5	RI	INFO				2	CLOSED		

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)

JPM ATTACHMENT B

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

Exceptional C/O: ☒ Mode Dependent: ☐ Condition Dependent: ☐

Operational Risk: ☐ Environmental Risk: ☐ Atmospheric Risk ☐ Reactivity Risk: ☐

WORKER TAGOUT# **PO7-005** JOB DESCRIPTION: **CHANGE 2CV03F**

WORKING DEPARTMENT: **OPS** W/O OR W/R: **12345** EQUIP. TAG# **2CV03F**

COMPONENT DESCRIPTION: **UNIT 2 RC FILTER**

FIRST APPROVAL: ***Jim NSO*** DATE: ***Today***

SECOND APPROVAL: _____ DATE: _____

WTO AUTHORIZATION: _____ DATE/TIME _____

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
2CV129 C/S (DEMIN HI TEMP DIVERT VLV)	1	CI	INFO				3	AS REQUIRED		
2CV8421 RC FILTER BYPASS VLV	2	RI	INFO				1	OPEN		
2CV8425 RC FILTER INLET ISOL VLV	3	RD	CLOSED				2	CLOSED		
2CV8422 RC FILTER OUTLET ISOL VLV	4	RD	CLOSED				2	CLOSED		
2CV8424 RC FILTER DRAIN VLV	5	RI	INFO				2	CLOSED		
2CV8423 RC FILTER VENT VLV	5	RI	INFO				2	CLOSED		

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)

JPM ATTACHMENT C

Job Performance Measure

Activate ERO using Everbridge Activation System

JPM Number: R-405

Revision Number: 2018

Date: 2/02/2018

Developed By:	Eric Steinberg /s/ Instructor	2/02/2018 Date
Validated By:	John Logan /s/ SME or Instructor	2/23/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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-AA-112-100-F-06 Rev: W
Procedure EP-AA-18-001 Rev: 0

_____ 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 2018, New JPM written for ILT class 17-1.

SIMULATOR SETUP INSTRUCTIONS

1. If the simulator will be used, ensure that the US computer has the internet access history cleared before each examinee starts.
2. If this is done in the classroom, ensure that the computer being used has internet access history cleared before each examinee starts.
3. This completes the setup for this JPM.

INITIAL CONDITIONS

1. The Shift Manager has just declared an ALERT due to a RCS LOCA.

INITIATING CUE

1. The Shift Manager has directed you to activate Everbridge per EP-AA-18-001.
2. **This is a Time Critical JPM.**

PASS out a TRAINING USE ONLY COPY of EP-AA-18-001 to the examinee during the initiating 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.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	**Examiner SHALL ensure examinee uses the training website for Everbridge, STOP the JPM and STOP the examinee if the examinee selects a different scenario to prevent REAL activation of the ERO.**				
1	Refer to EP-AA-18-001, Section 1.1.	Perform the following: • Determine that Braidwood is the appropriate station. • Circle the Braidwood User Name and Password.	___	___	___
2	Determine the appropriate Activation / Termination Scenario event.	Determine the appropriate Activation / Termination Scenario event. • Circle 01A.	___	___	___
CUE	Direct student to use the appropriate scenario for an Alert (Alert given in initiating cue).				
NOTE	**01A** – For Alert, Site Area, General Emergency, or Security Events with on-site ERO reporting.				
***3**	**Access Everbridge website.**	Access Everbridge website. *(Procedural Adherence)* ○ Double click Everbridge shortcut icon. • **Open https://manager.everbridge.net/login.**	___	___	___
***4**	**Enter Braidwood user name and password.**	• **Enter Braidwood user name (braidwood3) and password (simulator01#) and select "Sign In."** *(Procedural Adherence)*	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*5	**Complete Everbridge notification.** **Record time when Select "Send X templates Now" step is completed: _____**	Complete Everbridge notification. *(Procedural Adherence)* • **Verify Braidwood is displayed, then select "Proceed."** • **Select "+Launch Incident" button.** • **Select appropriate scenario (01A).** o Verify 01A is displayed. If correct scenario is displayed: • **Select "Send X templates Now."** o Validate there is a date and time stamp for each notification listed.	___	___	___
*6	**Verify TIME CRITICAL actions are completed.**	Verify TIME CRITICAL actions are completed: *(Procedural Adherence)* o Determine CRITICAL TIME by subtracting time recorded above from JPM start time: _____ - _____ = _____ minutes. • **CRITICAL TIME is ≤ 10 minutes.**			
CUE	Another NSO will complete the procedure. This completes the JPM.				

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☒ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Activate ERO using Everbridge Activation System**

JPM Number: **R-405** Revision Number: **2018**

Task Number and Title: **R-ZP-001, Perform site emergency plan duties**

K/A Number and Importance: **002000G2.4.43, 3.2/N/A**

Suggested Testing Environment: **Simulator or Classroom**

Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☒ Yes ☐ No

Reference(s): EP-AA-112-100-F-06, ERO NOTIFICATION OR AUGMENTATION, Rev. W
EP-AA-18-001, ERO NOTIFICATION OR AUGMENTATION FOR TRAINING USE, Rev. 0

Materials:

1. EP-AA-18-001

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 15 minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The 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. The Shift Manager has just declared an ALERT due to a RCS LOCA.

INITIATING CUE

1. The Shift Manager has directed you to activate Everbridge per EP-AA-18-001.
2. **This is a Time Critical JPM.**

Job Performance Measure

Determine Steam Generator Tube Leakage Action Requirements

JPM Number: S-106

Revision Number: 2018

Date: 01/25/18

Developed By:	Eric Steinberg /s/ Instructor	1/25/2018 Date
Validated By:	John Logan /s/ SME or Instructor	2/23/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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 1BwOA SEC-8 Rev: 109

_____ 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 2018, New ILT JPM for 2018 NRC Exam

SIMULATOR SETUP INSTRUCTIONS

Simulator setup is NOT required. JPM may be conducted with a copy of 1BwOA SEC-8 marked up threw step 5a and verbal cues.

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☒ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Determine Steam Generator Tube Leakage Action Requirements**
JPM Number: **S-106** Revision Number: **2018**
Task Number and Title: **S-OA-111, Direct actions per OA SEC-8**
K/A Number and Importance: **APE037G2.1.23, N/A/4.4**
Suggested Testing Environment: **Simulator/Classroom**
Alternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No
Reference(s): 1BwOA SEC-8, STEAM GENERATOR TUBE LEAK, Rev. 109

Materials:

1. 1BwOA SEC-8 (marked up through step 5.a)

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **10** minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The 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 the Unit 1 US.
2. Both Units are at full power, all systems in automatic.
3. The SG tube leakrate computer points are not functional for the purpose of this JPM.
4. 1C S/G began showing a rad level rise on both main steamline rad monitors one hour ago. It has stabilized near the HIGH ALARM setpoint.
5. 1PR27J, SJAE/GS Exhaust rad monitor, has been declared inoperable.
6. 1BwOA SEC-8 has been entered and completed through step 5.a. Initial estimates by a Chemistry grab sample indicate an approximately 80 gpd leak.

INITIATING CUE

1. **The SM has directed you to determine if there are any shutdown requirements.**

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	Provide examinee copy of 1BwOA SEC-8 marked up threw step 5.b.				
1	Refer to 1BwOA SEC-8, step 5.b.	Refer to 1BwOA SEC-8 at step 5.b. • Determine total RCS leak rate is < 10 gpm. • Perform 1BwOSR 3.4.13.1 RCS Water Inventory Balance Surveillance. • Check SJAE Rad Monitor Operable.	___	___	___
CUE	If asked how the leak rate was estimated, state a grab sample.				
CUE	The initiating cue stated 80 gpd.				
CUE	An extra NSO will perform 1BwOSR 3.4.13.1.				
CUE	Per initiating cue, SJAE rad monitor is inoperable. If the examinee asks about initiating actions to restore 1PR27J, inform the examinee that a work package is being prepared to troubleshoot and repair the rad skid.				
2	Trend SG leak rate by notifying Chemistry to sample S/Gs and by trending computer point.	Trend SG leak rate as follows: • Notify Chemistry to sample S/Gs. • Check computer point U9052 responding to plant conditions. • Trend leak rate values every 15 minutes.	___	___	___
CUE	Chemistry acknowledges request to sample S/Gs.				
CUE	Per initiating cue, computer point U9052 is NOT available/functional. Chemistry acknowledges request for 2 consecutive leak rates via grab samples. If asked, an extra NSO will perform 1BwOS SG-1.				
CUE	Most recent sample indicates 80 gpd by grab sample results.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3	**Determine if shutdown required.**	Determine if shutdown required: *(Procedural Adherence)* ○ SG leak rate < 100 gpd (YES). • **SG leak rate ≥ 30 gpd (YES).** • **SG leak rate > 75 gpd (YES).** ○ SJAE radiation monitor OPERABLE (NO).	___	___	___
NOTE	No cue necessary, student has enough information to answer the questions as noted. If results of 1BwOSR 3.4.13.1 are requested, then provide 80 gpd				
4	Confirm SG leak rate.	Confirm SG leak rate - at least TWO independent indications trend in the same direction: ○ Main Steamline radiation monitors. ○ SJAE/Gland Steam Exhaust radiation monitor (NO – INOPERABLE). ○ SG Blowdown radiation monitor. ○ N-16 radiation monitors. ○ Grab sample (only for < 100 gpd leaks).	___	___	___
CUE	BOTH 1C Main Steamline radiation monitors indicate at the High Alarm setpoint.				
CUE	Grab samples over the last hour all indicate an 80 gpd leak. If asked, N-16 radiation monitors are NOT located on the 1C MS line. If asked, SG Blowdown rad monitor has risen over the past 45 minutes.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***5**	**Determine shutdown is required to less than 50% within 1 hour of meeting or exceeding 75 gpd and SJAE rad monitor being inoperable, then shutdown to Mode 3 in the following 2 hours**	Initiate a Unit shutdown per the following: *(Procedural Adherence)* ○ Check leak rate less than 100 gpd (YES). • **SJAE rad monitor 1PR27J operable (NO).** • **Reduce power to less than 50% within 1 hour of exceeding 75 gpd and SJAE rad monitor inoperable, then shutdown to Mode 3 within the following 2 hours.** ○ Inform SM of the shutdown requirements determined above.	___	___	___
CUE	SM acknowledges shutdown requirements. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 1 US.
2. Both Units are at full power, all systems in automatic.
3. The SG tube leakrate computer points are not functional for the purpose of this JPM.
4. 1C S/G began showing a rad level rise on both main steamline rad monitors one hour ago. It has stabilized near the HIGH ALARM setpoint.
5. 1PR27J, SJAE/GS Exhaust rad monitor, has been declared inoperable.
6. 1BwOA SEC-8 has been entered and completed through step 5.a. Initial estimates by a Chemistry grab sample indicate an approximately 80 gpd leak.

INITIATING CUE

1. **The SM has directed you to determine if there are any shutdown requirements.**

Job Performance Measure

Apply GOCAR to Water Suppression System

JPM Number: S-203

Revision Number: 2018

Date: 01/25/18

Developed By:	Eric Steinberg /s/ Instructor	1/25/2018 Date
Validated By:	Dan Burton /s/ SME or Instructor	2/22/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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 BwAP 1110-1 Rev: 41
Procedure BwAP 1110-1A2 Rev: 8
Procedure BwAP 1110-1A3 Rev: 8
Procedure BwAP 1110-1A4 Rev: 10
Procedure 0BwOS FP.3.1.Q-1 Rev: 11

_____ 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 2010, Change format and verify latest procedure revisions.

Revision 2011, Verify latest procedure revisions.

Revision 2012, Per ATI 1089778-64 all JPMs were updated as applicable to each JPM the following information - KA, Critical Path, Cues, Boron Concentration, Fundamentals. Also Updated to latest procedure revisions if changed.

Revision 2013, Changed format to current procedure revision of TQ-JA-150-02 Rev 3 JPM Template. Verified latest procedure revisions

Revision 2014, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2015, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2016, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2018, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

NOTE: SIMULATOR setup for this JPM is NOT required. This JPM may be run in any location as long as the required materials are present.

1. Placekeep 0BwOS FP.3.1.Q-1 through step F.1.d.3) (step 'Fails'), and fill out data sheet D-2 as follows:

   1S-27 and 1S-28 – TROUBLE Alarm Received (initialed); TROUBLE Alarm Cleared (initialed).

   1S-28 – ACTD Alarm Received (initialed); Local Alarms Received (initialed); ACTD Alarm Cleared (initialed); Local Alarms Cleared (initialed); Piping Integrity Verified (initialed); Spray Path Clear (initialed).

   1S-27 – ACTD Alarm Received (circled 'N'); rest of line blank. Rest of page blank.

2. When the above steps are completed for this and other JPMs to be run concurrently, then validate if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
3. This completes the setup for this JPM.

JPM SUMMARY

Operator's Name: _____ **Emp ID#:** _____

Job Title: ☐ EO ☐ RO ☒ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Apply GOCAR to Water Suppression System**

JPM Number: **S-203** Revision Number: **2018**

Task Number and Title: **S-TS-007: Ensure compliance w/ all applicable Tech Spec Action Statements and Admin Technical Requirements**

K/A Number and Importance: **086000G2.2.42, N/A/4.6**

Suggested Testing Environment: **Classroom**

Alternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No

Reference(s): BwAP 1110-1, FIRE PROTECTION PROGRAM SYSTEM REQUIREMENTS, Rev. 41
BwAP 1110-1A2, FIRE SUPPRESSION WATER SUPPLY REQUIRED COMPENSATORY MEASURES ACTION RESPONSE COVER SHEET, Rev. 8
BwAP 1110-1A3, GOCAR REQUIRED COMPENSATORY MEASURES ACTION RESPONSE FIRE PROTECTION WATER SUPPRESSION SYSTEMS, Rev. 8
BwAP 1110-1A4, GOCAR REQUIRED COMPENSATORY MEASURES ACTION RESPONSE CARBON DIOXIDE FIRE SUPPRESSION SYSTEMS, Rev. 10
0BwOS FP.3.1.Q-1, DIESEL GENERATOR FUEL OIL STORAGE TANK ROOMS FOAM SYSTEMS ALARM TEST SURVEILLANCE, Rev. 11

Materials:

1. 0BwOS FP.3.1.Q-1 (place kept per setup instructions)
2. BwAP 1110-1
3. BwAP 1110-1A3

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **16** minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The 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 the Unit Supervisor.
2. U-1 and U-2 are in Mode 1.

INITIATING CUE

1. 0BwOS FP.3.1.Q-1, 1B Diesel Generator Fuel Oil Storage Tank Rooms Foam Systems Alarm Test Surveillance, is in progress at step F.1.d (1S-27). The associated "ACTD" alarm was NOT received at the Fire Protection Panel, 1PM09J.
2. Determine, if applicable, the necessary actions for this condition, and fill out the required paperwork.

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: _

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	Hand the student a copy of BwAP 1110-1 and 0BwOS FP.3.1.Q-1. If requested, give the student a copy of BwAP 1110-1A3. Steps 2-7 of the JPM may be completed in any order.				
1	Initiate BwAP 1110-1A3.	Initiate BwAP 1110-1A3.	___	___	___
***2**	**Determine Conditions A and D are the applicable Conditions to enter.**	**Determine Conditions A and D are the applicable Conditions to enter.**	___	___	___
***3**	**Complete BwAP 1110-1A3 Notification steps to document condition A and D are applicable.**	Complete BwAP 1110-1A3 Notification steps: determines entry conditions have been met. *(Regulatory Compliance)* • **Time/Date.** ○ BY. ○ Title. ○ Present Mode. • **Initiating condition.** ○ Name of SM/OE notified. ○ Time/Date SM/OE notified. ○ Was an IR written? ○ Related OOS.	___	___	___
CUE	Time: Now; Date: Today.				
NOTE	Initiating Condition: Failure of ACTD Alarm Test of U-1 DOST Room Foam System (1S-27), or words to that effect.				
CUE	Use any Qualified SM as SM notified. N/A OE block.				
CUE	Time/Date SM notified: Now; Date: Today.				
CUE	IR #2561234 was written.				
CUE	No related OOS.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
4	Complete GOCAR Index Fire Protection Water Suppression Systems.	Complete GOCAR Index Fire Protection Water Suppression Systems for Conditions A and D: • SRO Sign. • Date.	___	___	___
NOTE	Time and date must match the time/date on the cover page.				
5	Complete GOCAR Action Chart Condition Column for Condition A.	Complete GOCAR Action Chart (Condition Column) for Condition A: • Time/Date. • SRO Sign.	___	___	___
NOTE	Time and date must match the time/date on the cover page.				
***6**	**Complete GOCAR Action Chart Condition Column for Condition D.**	Complete GOCAR Action Chart (Condition Column) for Condition D: determines required actions for condition D need to be completed. *(Regulatory Compliance)* • **Time/Date.** • **SRO Sign.**	___	___	___
NOTE	Time and date must match the time/date on the cover page.				
NOTE	JPM step 6 is a Critical Step because the SRO is documenting the correct condition including required actions and associated completion times.				
7	Complete GOCAR Action Chart Action Met Column for Condition A.	Complete GOCAR Action Chart (Action Met Column) for Condition A: • Time/Date. • SRO Sign.	___	___	___
CUE	WEC will determine the Action Met Column for Condition D.				
CUE	Time: Now, Date: Today.				
CUE	Allow time for student to review paperwork, then complete the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit Supervisor.
2. U-1 and U-2 are in Mode 1.

INITIATING CUE

1. 0BwOS FP.3.1.Q-1, 1B Diesel Generator Fuel Oil Storage Tank Rooms Foam Systems Alarm Test Surveillance, is in progress at step F.1.d (1S-27). The associated “ACTD” alarm was NOT received at the Fire Protection Panel, 1PM09J.
2. Determine, if applicable, the necessary actions for this condition, and fill out the required paperwork.

Job Performance Measure

Review QPTR Calculation

JPM Number: S-205

Revision Number: 2018

Date: 01/25/18

Developed By:	Eric Steinberg /s/ Instructor	1/25/2018 Date
Validated By:	John Logan /s/ SME or Instructor	2/23/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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

_____ 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 2010, Change format and verify latest procedure revision.

Revision 2011, Verify latest procedure revision.

Revision 2012, Per ATI 1089778-64 all JPMs were updated as applicable to each JPM the following information - KA, Critical Path, Cues, Boron Concentration, Fundamentals. Also Updated to latest procedure revisions if changed.

Revision 2013, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2014, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2015, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2018, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. If the simulator is used, reset the simulator to any 100% IC.
2. Key (Page 7 should be reviewed). Upper half data of this sheet (Data sheet D-3) is given to the SRO to review as part of the completed surveillance package. This contains the calculation error for N42 upper detector and N44 lower detector.
3. The lower half data contains the correct calculations **in bold type** with the error that must be discovered for N42 upper detector and N44 lower detector.
4. When the above steps are completed for this and other JPMs to be run concurrently, then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
5. This completes the setup for this JPM.

JPM SUMMARY

Operator's Name: _____ **Emp ID#:** _____

Job Title: ☐ EO ☐ RO ☒ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Review QPTR Calculation**

JPM Number: **S-205** Revision Number: **2018**

Task Number and Title: **S-AM-123: Review Surveillances to Ensure Compliance with Tech Specs and Non-Tech Spec Requirements**

K/A Number and Importance: **015000G2.1.20, N/A/4.6**

Suggested Testing Environment: **Simulator/Classroom**

Alternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No

Reference(s): 1BwOSR 3.2.4.1, UNIT ONE QUADRANT POWER TILT RATIO (QPTR) CALCULATION, Rev. 9

Materials:

1. 1BwOSR 3.2.4.1 with filled out Predefine Cover Sheet (place kept)

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **15** minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The 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 the Unit 1 Unit Supervisor.
2. Unit 1 is at 100% power.

INITIATING CUE

1. The NSO has completed and handed you a copy of 1BwOSR 3.2.4.1 for you to review.
2. The PPC and PDMS are inoperable.
3. The Shift Manager has directed you to perform an independent review of the surveillance.

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	This JPM is performed by having the examinee review the Data Sheet D-3, Unit 1 QPTR calculation using NIS meters. The data sheet is complete but has errors in the calculation for the N-42 upper detector QPTR and the N44 lower detector QPTR. The student must determine that the errors exist and determine the required action for PR channel N-42 being outside the acceptance criteria.				
1	Open and refer to 1BwOSR 3.2.4.1, QPTR Calculation.	Open and refer to the provided copy of 1BwOSR 3.2.4.1. Review the applicable surveillance frequency for performance of this surveillance is once per 7 days: • QPTR has been within limits (<1.02).	___	___	___
CUE	Ensure completed QPTR Surveillance is handed to student. All Prerequisites, Precautions, Limitations and Actions were met for the performance of this surveillance. If asked, the Rod Dev Power Range Tilt alarm is INOPERABLE. If asked, PDMS is inoperable (per cue sheet). The QPTR surveillance is performed as a normal weekly.				
2	Review completed data sheet D-3.	Review data sheet D-3 for completeness/errors: • Being completed once per 7 days - normal interval. • Date (Today). • Time (Earlier – 10 minutes ago). • Channels reliable? (Y). • Instrument Readings properly recorded (100%).	___	___	___
CUE	If asked, the Unit has NO LCOARs currently in progress.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
3	Review data sheet for present and 100% detector currents.	Review data sheet to ensure all present Upper and Lower Detector Currents are recorded as well as all 100% detector Upper and Lower currents.	___	___	___
CUE	All present and 100% values of Upper and Lower Detector currents are accurate.				
4	Review the calculations to obtain the normalized detector currents and compare them to the calculated values on the data sheet.	Review the Normalized Detector Currents for each detector by dividing its present detector current reading by the 100% detector current value: • Each Upper. • Each Lower.	___	___	___
5	Calculate and review the average normalized currents and compare them to the data sheet.	Review the Average Normalized Current by summing the upper (lower) normalized detector currents and dividing by 4 and compare this value to the data sheet: • Upper Average. • Lower Average.	___	___	___
6	Calculate and review the QPTR for each detector and compare them to the QPTR listed on the data sheet.	Review the QPTR for each detector by dividing each Normalized Detector Current by the Average Normalized Current and compare this value to the data sheet: • Each Upper. • Each Lower.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*7	**Identify N42 Upper Detector calculations are in error.**	Identify N42 Upper Detector calculations are in error. *(Technical Human Performance)* • **Identify N42 Upper Detector Normalized Detector Current is incorrect.** • **Identify N42 Upper Detector Average Normalized Current is incorrect.** ○ Inform SM of error.	___	___	___
CUE	As SM, acknowledge error on QPTR surveillance.				
*8	**Identify N42 Upper Detector QPTR is unacceptable.**	• **Identify N42 Upper Detector QPTR is >1.02 and is unacceptable.** *(Technical Human Performance)* • **Enter LCO 3.2.4.** *(Technical Human Performance)* ○ Identify N41 - 44 Upper Detector QPTR values are incorrect. ○ Inform SM of LCO entry requirement.	___	___	___
CUE	If informed as SM of QPTR issue, only ask what actions must be taken. As SM, acknowledge the required initiation of LCO 3.2.4.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
9	Identify N44 Lower Detector QPTR is incorrect.	• Identify N44 Lower Detector QPTR value is incorrect. • Inform SM of error.	___	___	___
CUE	As SM, acknowledge error on QPTR surveillance. This completes the JPM.				

JPM Stop Time: _____

UNIT ONE

(KEY) **(KEY)**

QUADRANT POWER TILT RATIO CALCULATION
NIS METERS

Being performed once per:
☐ 7 Days (normal interval) ☐ Shiftly
☐ 12 Hours (with NF-AP-545.) ☐ Other: _____

Date: TODAY	Time: 10 minutes ago **(Data sheet given to SRO for review – see errors below)**			
Channel	N41	N42	N43	N44
Is the channel indication reliable?	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
Instrument reading	100%	100%	100%	100%
UPPER DETECTORS (A)				
Present upper detector current	192	187	190	185
100% upper detector current	194	181	192	186
Normalized detector current	.990	1.01	.990	.995
Average normalized current	.996			
Upper power tilt ratio (¢≤1.02)	¢ .994	¢ 1.01	¢ .994	¢ .999
LOWER DETECTORS (B)				
Present lower detector current	170	150	165	165
100% lower detector current	170	153	165	168
Normalized detector current	1.00	.980	1.0	.982
Average normalized current	.991			
Lower power tilt ratio (¢≤1.02)	¢ 1.01	¢ .989	¢ 1.01	¢ 1.01

Date:	Time: **(Data sheet with correct calculations – errors on N-42/44. Only bolded items required for critical steps.)**			
Channel	N41	N42	N43	N44
Is the channel indication reliable?	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
Instrument reading	100%	100%	100%	100%
UPPER DETECTORS (A)				
Present upper detector current	192	187	190	185
100% upper detector current	194	181	192	186
Normalized detector current	.990	**1.03**	.990	.995
Average normalized current	**1.00**			
Upper power tilt ratio (¢≤1.02)	¢ .990	**¢ 1.03**	¢ .990	¢ .995
LOWER DETECTORS (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	.991			
Lower power tilt ratio (¢≤1.02)	¢ 1.01	¢ .989	¢ 1.01	¢ .991

INITIAL CONDITIONS

1. You are the Unit 1 Unit Supervisor.
2. Unit 1 is at 100% power.

INITIATING CUE

1. The NSO has completed and handed you a copy of 1BwOSR 3.2.4.1 for you to review.
2. The PPC and PDMS are inoperable.
3. The Shift Manager has directed you to perform an independent review of the surveillance.

Job Performance Measure

Prepare/Perform a Liquid Release

JPM Number: S-302

Revision Number: 2018

Date: 2/02/2018

Developed By:	Eric Steinberg /s/ Instructor	2/02/2018 Date
Validated By:	John Logan /s/ SME or Instructor	2/23/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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 BwOP WX-501T1 Rev: 80
Procedure BwOP WX-501T2 Rev: 8
Procedure BwOP WX-501T3 Rev: 1

_____ 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 2018, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

SIMULATOR/CLASSROOM SETUP GUIDE:

1. Insert the following in the simulator:
   - **IOR ZAO0URCW032P1 22000** to set CW blowdown flow to 22,000 gpm.
   - **IMF F2400 22000** to set PPC CW blowdown flow to 22,000 gpm.

2. Verify/copy Liquid Release Window spreadsheet to computer desktop prior to administering JPM. Spreadsheet is located at k:/shift/excel/liquid release.

3. Clear data from INPUTS field of Liquid Release Window spreadsheet prior to administering JPM.

INITIAL CONDITIONS

1. You are the Unit 1 Unit Supervisor.
2. Both Units are at full power.
3. The current time is 0700 today. Due to scheduled work on the liquid release line, release package #L-18-002 must be COMMENCED by 0900 today using the Low Flow release path for outage water processing preps. The Ultra Low Flow release path is unavailable.

INITIATING CUE

1. The Shift Manager has handed you a 0WX01T liquid release package, #L-18-002, completed through section G.6, and has directed you to complete Section H. All previous sections of the release package have been successfully completed.
2. Notify the Shift Manager when Section H of the release package is complete.

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	Provide the examinee with a copy of BwOP WX-501T1 completed through step G.6 and BwOP WX-501T2.				
1	Obtain and record current Kankakee River flow data. **NOTE: The USGS internet site can be accessed from the computer desk top from workgroup apps menu or by using normal internet access.**	Obtain and record current Kankakee River flow data by performing the following: • Access the United States Geological Survey internet site: (http://waterdata/usgs.gov/il/nwis/uv?05527500). • Select Available Parameter: 00060 discharge. • Select Table. • Select an appropriate time period and then select GO. • Record stream flow, date and time. • Record Kankakee River flowrate (stream flow) and source of data obtained in Unit 1 US turnover. ○ N/A step H.1.c – low flow release being used.	___	___	___
CUE	• After examinee locates Kankakee River flowrate on USGS website, provide the following: Kankakee River stream flow is 5680 cfs at 0700 on today's date. • Kankakee River flowrate and source of data obtained has been logged in the Unit 1 US turnover.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*2	**Determine the Liquid Release Window per BwOP WX-501T2.**	Determine the Liquid Release Window per BwOP WX-501T2 as follows: *(Procedural Adherence)* ○ Record Liquid Release number: L-18-002. • **Record Kankakee River flow data: 5680 cfs, today at 0700.** • **Record allowed release duration based on Kankakee River flow: 7 hours.** • **Record CW blowdown flow rate: 22,000 gpm** (F2400 or OUR-CW032). • **Access Liquid Release Window spreadsheet (k:/shift/excel/liquid release).** • **Enter arrival date at Wilmington (tomorrow's date).** • **Enter river flow rate: 5680 cfs.** • **Enter release duration: 420 minutes.** • **Enter CW blowdown flow: 22,000 gpm.**	___	___	___
CUE	After the examinee locates Liquid Release Window spreadsheet, inform examinee to use spreadsheet on computer desktop.				
NOTE	After the examinee has completed entering data into the Liquid Release Window spreadsheet, hand the examinee the STUDENT COPY of the Liquid Release Window spreadsheet located in the back of the JPM.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3	**Calculate the Secure Before Time.**	Calculate the Secure Before Time by performing the following: *(Procedural Adherence)* • **Secure Before Time = Spreadsheet Start After Time 1300 plus Allowed Release Time 7 hours = 2000.**	___	___	___
4	Record the Liquid Release Window times.	Record the Liquid Release Window times on BwOP WX-501T1 (step H.1.d.2) • Start After Time (1300). • Secure Before time (2000).	___	___	___
*5	**Determine Maximum Release Rate.**	Determine Maximum Release Rate: *(Procedural Adherence)* ○ Record maximum release rate from the release permit from step D.5.e: 50 gpm. ○ Record Chemistry release rate from step C.7.d: 50 gpm. ○ Record most limiting Maximum Release Rate from step H.1.d.3)/4): 47.5 gpm. ○ Verify value calculated for Low Flow Path Release Rate in step H.1.d.4)b) is less than 47.5 gpm. If not, use 47.5 gpm. • **Maximum Release Rate = 47.5 gpm.**	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
6	Evaluate the expected time of release.	Evaluate the expected time of release so that both biocide treatment and the release can be accommodated by performing the following: • Check if dechlorination skid in operation. • Verify CW blowdown flow ≥ 8000 gpm (22,000 gpm).			
CUE	If asked, the dechlorination skid is in operation.				
***7**	**Identify release will not start within desired time.**	Verify release will start within release window recorded: *(Procedural Adherence)* • **Determine release will be performed outside of release start time window** (from initiating cue, release must start by 0900 today). • **Determine BwOP WX-501T3 must be completed prior to authorizing release.** ○ Notify SM release will be performed outside of release start time window. OR ○ Notify SM to delay release until work completed. OR ○ Notify SM to delay work until release completed within desired time window.			
CUE	• Acknowledge as SM, notification of release performed outside start time window. • Inform examinee that another supervisor will perform BwOP WX-501T3. • This completes the JPM.				

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☒ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Prepare/Perform a Liquid Release**

JPM Number: **S-302** Revision Number: **2018**

Task Number and Title: **S-HP-001, Authorize a liquid radwaste release**

K/A Number and Importance: **068000G2.3.11, N/A/4.3**

Suggested Testing Environment: **Classroom/Simulator**

Alternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No

Reference(s):

1. BwOP WX-501T1, LIQUID RELEASE TANK 0WX01T RELEASE FORM, Rev. 80
2. BwOP WX-501T2, LIQUID RELEASE WINDOW DETERMINATION, Rev. 8
3. BwOP WX-501T3, AUTHORIZATION TO RELEASE OUTSIDE OF RELEASE WINDOW, Rev. 1

Materials:

1. BwOP WX-501T1
2. BwOP WX-501T2

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 30 minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The 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**: _____

SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. You are the Unit 1 Unit Supervisor.
2. Both Units are at full power.
3. The current time is 0700 today. Due to scheduled work on the liquid release line, release package #L-18-002 must be COMMENCED by 0900 today using the Low Flow release path for outage water processing preps. The Ultra Low Flow release path is unavailable.

INITIATING CUE

1. The Shift Manager has handed you a 0WX01T liquid release package, #L-18-002, completed through section G.6, and has directed you to complete Section H. All previous sections of the release package have been successfully completed.
2. Notify the Shift Manager when Section H of the release package is complete.

STUDENT COPY

Braidwood Release Time Calculator

BwOP WX-501 and/or BwOP WX-526

Enter data into blue cells only.

INPUTS		
Arrival Date at Wilmington	mm/dd/yyyy	Tomorrow's date
River Flow Rate	CFS	5,680
Release Duration	Minutes	420
Blowdown Rate (F2400)	GPM	22,000

CALCULATED RESULTS		
Blowdown Time To River	Minutes	120
River Time To Wilmington Intake	Minutes	420
Blowdown Peak Time To Wilmington Intake	Minutes	750
Margin	Minutes	120
Start After Time (= Peak Arrives at 10 PM)	Time	Today's date 13:00
Normal Start (= Center of Peak occurs at 2:30 AM)	Time	Today's date 14:00

SRRS: 3D.100; There are no retention requirements for this section

Job Performance Measure

Classify and Screen Event for Reportability

JPM Number: S-411

Revision Number: 2018

Date: 01/25/18

Developed By:	Eric Steinberg /s/ Instructor	1/25/2018 Date
Validated By:	Dan Burton /s/ SME or Instructor	2/22/2018 Date
Reviewed By:	Daniel Wyatt /s/ Operations Representative	2/23/2018 Date
Approved By:	Eric Steinberg /s/ Training Department	2/23/2018 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 LS-AA-1110 Rev: 25
Procedure EP-AA-1001 Addendum 3 Rev: 3

_____ 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 2010, Change format and verify latest procedure revisions

Revision 2011, Update to latest procedure revisions

Revision 2012, Per ATI 1089778-64 all JPMs were updated as applicable to each JPM the following information - KA, Critical Path, Cues, Boron Concentration, Fundamentals. Also Updated to latest procedure revisions if changed.

Revision 2013, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2014, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2015, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template.

Revision 2018, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template. Modified EAL to MA5 (earthquake) since the last EAL revision removed loss of annunciators as an EAL.

SIMULATOR SETUP INSTRUCTIONS

1. If the simulator is used, reset the simulator to IC-21 or equivalent 100% power IC.
2. This JPM may be performed in a classroom or in the Simulator.
3. When the above steps are completed for this and other JPMs to be run concurrently, then validate if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
4. This completes the setup for this JPM.

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☒ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Classify and Screen Event for Reportability**

JPM Number: **S-403** Revision Number: **2018**

Task Number and Title: **S-AM-102, Screen Reportable or Significant Events for Reportability**

K/A Number and Importance: **006000G2.4.30, N/A/4.1**

Suggested Testing Environment: **Simulator/Classroom**

Alternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☒ Yes ☐ No

Reference(s): LS-AA-1110, EXELON REPORTABILITY MANUAL, Rev. 25
EP-AA-1001, ADDENDUM 3, EXELON NUCLEAR EMERGENCY ACTION LEVELS FOR BRAIDWOOD STATION, Rev. 3

Material(s):

1. LS-AA-1110
2. EP-AA-1001, Addendum 3

Actual Testing Environment: ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **20** minutes **Actual Time Used:** _____ minutes

Critical Time **13** minutes (for step 2)

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The 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 the Unit 2 Unit Supervisor.
2. Unit 1 is at 100% power.
3. Two minutes ago, an Operating Basis earthquake occurred.
4. One minute ago, a Reactor trip occurred on Unit 1.
5. An EO just reported that a large crack in the U-1 RWST has water leaking from the crack.

INITIATING CUE

1. Determine all station reporting requirements due within the next 75 minutes.
2. **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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to Exelon Reportability Reference Manual and Braidwood EALS.	Locate and Open the following: • Exelon Reportability Reference Manual. • Braidwood EALs.	___	___	___
***2**	**Evaluate for Emergency Plan.** Record time EAL determined: _____	Using Braidwood EALs, determine the Emergency Plan classification: *(Regulatory Compliance)* • **EAL MA5.**	___	___	___
NOTE	Concurrent EAL HU4 is NOT required to be reported. Another SRO will complete the NARS form.				
***3**	**Verify TIME CRITICAL actions are completed.**	Verify TIME CRITICAL actions are completed: *(Procedural Adherence)* o Determine CRITICAL TIME by subtracting time recorded above from JPM start time: _____ - _____ = _____ minutes. • **CRITICAL TIME is ≤ 13 minutes.**	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*4	**Screen the event for Reportability.**	Use the Exelon Reportability Reference Manual Decision Trees to determine: *(Regulatory Compliance)* • **15 minute State and Local Notification** (for SAF 1.1). • **1 hour NRC Notification** (for SAF 1.1).	___	___	___
NOTE	JPM is passed if the 15 minute State and Local notification and the 1 hour ENS notification are determined correctly/timely.				
CUE	This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 2 Unit Supervisor.
2. Unit 1 is at 100% power.
3. Two minutes ago, an Operating Basis earthquake occurred.
4. One minute ago, a Reactor trip occurred on Unit 1.
5. An EO just reported that a large crack in the U-1 RWST has water leaking from the crack.

INITIATING CUE

1. Determine all station reporting requirements due within the next 75 minutes.
2. **This is a TIME CRITICAL JPM.**