

Exelon Nuclear

Job Performance Measure

Excess Letdown Operations

JPM Number: CR a

Revision Number: 8

Date: 7/31/2010

Revised By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
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 8 and 12 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure BOP CV-15 Rev: 11
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

SME / Instructor	Date
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SME / Instructor	Date
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SME / Instructor	Date
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Revision Record (Summary)

Revision 8

Reformatted to current template

Updated to revision 11 of BOP CV-15

SIMULATOR SETUP INSTRUCTIONS

- 1) Reset 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) Close 1CV8149A-C, and 1CV459 and 1CV460. Close 1CV8105 and 1CV8106.
- 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

INITIAL CONDITIONS

- 1. You are the Unit 1 Assist NSO.
- 2. 1CV459 has failed closed and MM are investigating the cause of the failure.
- 3. Normal charging has been isolated.
- 4. Reactor power is < 99.5%.

INITIATING CUE

- 1. The US directs you to establish excess letdown to the VCT using the loop drains and BOTH letdown heat exchangers to for maximum cooling.
- 2. The SM does NOT desire flow to be directed to the VCT spray nozzle.

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.

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RECORD START TIME: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Refer to BOP CV-15 Note: May be performed at any time Cue: Prerequisites are met	° LOCATE and OPEN BOP CV-15	_____	_____	_____
2. Verify/open 1CV8100	• 1CV8100 is OPEN	_____	_____	_____
3. Verify/open 1CV8112	• 1CV8112 is OPEN	_____	_____	_____
*4. Open CC from Excess Ltdn HX isolation valve 1CC9437B	• 1CC9437B is OPEN	_____	_____	_____
*5. Open CC to Excess Ltdn HX isolation valve 1CC9437A	• 1CC9437A is OPEN	_____	_____	_____
6. Verify closed 1CV123	• 1CV123 is closed	_____	_____	_____
7. Verify/direct flow to VCT	• 1CV8143 selected to VCT	_____	_____	_____
*8. Open loop drain valve Note: It is only necessary to open 1 drain valve.	• 1RC8037A, B, C or D is OPEN	_____	_____	_____
*9. Open Excess Ltdn HX inlet valve Note: The examinee may elect to use both HX for maximum flowrate.	• 1CV8153A and/or B is OPEN	_____	_____	_____
*10. Open flow control valve and ensure Excess Ltdn outlet temperature stabilizes at <165°F.	• 1CV123 is throttled OPEN • 1TI-122A <165°F	_____	_____	_____
Cue: This JPM is completed.				

RECORD STOP TIME: _____



JPM SUMMARY

Operator's Name: _____ **Job Title:** EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Establish RH Letdown and Secure Normal Letdown

JPM Number: CR a (N-52) Revision Number: 8

Task Number and Title: R-CV-007 Establish excess letdown to either Volume Control Tank or RCDT.

K/A Number and Importance: 004 A4.05 3.6 / 3.1

Suggested Testing Environment: Simulator

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

Reference(s):

BOP CV-15, Excess Letdown Operations (Rev 11)

CRITICAL STEPS (*) 4, 5, 8, 9 & 10

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 Assist NSO.
2. 1CV459 has failed closed and MM are investigating the cause of the failure.
3. Normal charging has been isolated.
4. Reactor power is < 99.5%.

INITIATING CUE

1. The US directs you to establish excess letdown to the VCT using the loop drains and BOTH letdown heat exchangers to for maximum cooling.
2. The SM does NOT desire flow to be directed to the VCT spray nozzle.

Exelon Nuclear

Job Performance Measure

Establish Automatic Pressurizer Level Control

JPM Number: CR b

Revision Number: 6

Date: 7/9/2010

Revised By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
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 8 and 12 below.

See File Copy

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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure 1BGP 100-1 Rev: 49
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. 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 6

Reformatted to current template

SIMULATOR SETUP INSTRUCTIONS

- 1) Reset to IC-7

<p>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.</p>
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- 2) Place the Master Pressurizer Level Controller in MANUAL.
- 3) Raise Pzr level to at least 1% above program level, then control charging so level is slowly rising.
- 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

INITIAL CONDITIONS

- 1. You are the unit NSO.
- 2. Unit is in Mode 3, Hot Standby.
- 3. Plant heatup is in progress, using 1BGP 100-1.
- 4. Letdown flow is 120 gpm.

INITIATING CUE

The US requests you continue in the heatup procedure starting at step 67 by placing pressurizer level control in automatic.

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

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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.

.....

RECORD START TIME: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Refer to 1BGP 100-1, Plant Heatup	<ul style="list-style-type: none"> • LOCATE and OPEN 1BGP 100-1 	_____	_____	_____
2. Adjust master PZR level controller	<ul style="list-style-type: none"> • 1LK-459 is in MANUAL • 1LK-459 demand adjusted to 38% 	_____	_____	_____
*3. Match actual PZR level with program PZR level	<ul style="list-style-type: none"> • 1CV121 is in manual with actual PZR level trending to program PZR level 	_____	_____	_____
4. Adjust charging flow to compensate for RCP seal injection	<ul style="list-style-type: none"> • 1CV121 adjusted to obtain charging flow approximately equal to Letdown flow and RCP seal leak off ○ Adjust 1CV182 to maintain RCP seal injection with 8 to 13 GPM. 	_____	_____	_____
5. Charging pump discharge flow control valve in automatic	<ul style="list-style-type: none"> • 1CV121 AUTO light is LIT 	_____	_____	_____
*6. Master PZR level controller in automatic	<ul style="list-style-type: none"> • 1LK-459 AUTO light is LIT 	_____	_____	_____
7. Verify automatic PZR level control	<ul style="list-style-type: none"> • Actual Pzr level is approximately matched to program Pzr level 	_____	_____	_____
Cue: This JPM is completed.				

RECORD STOP TIME: _____



JPM SUMMARY

Operator's Name: _____ **Job Title:** EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Establish Automatic Pressurizer Level Control

JPM Number: CR b (N-77) Revision Number: 6

Task Number and Title: 4C.GP-06 Transfer Pressurizer Level Control from Manual to Automatic

K/A Number and Importance: 011 A4.04 3.2 / 2.9

Suggested Testing Environment: Simulator

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

Reference(s):

1BGP 100-1, Plant Heatup (revision 49)

CRITICAL STEPS (*) 3 & 6

Actual Testing Environment: Simulator Control Room In-Plant Other

Testing Method: Simulate Perform

Estimated Time to Complete: 20 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 NSO.
2. Unit is in Mode 3, Hot Standby.
3. Plant heatup is in progress, using _BGP 100-1.
4. Letdown flow is 120 gpm.

INITIATING CUE

The US requests you continue in the heatup procedure starting at step 67 by placing pressurizer level control in automatic.



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 8 and 12 below.

See File Copy

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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure BOP SI-8 Rev: 15
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

<u>Lynn Sanders (Signature on File)</u>	<u>9/24/09</u>
SME / Instructor	Date

<u>Brian Clark (Signature on File)</u>	<u>9/24/09</u>
SME / Instructor	Date

SME / Instructor	Date

Revision Record (Summary)

Revision 3

- Applied new template TQ-JA-150-02 Rev.1
- Verified/ updated KAs and TPOs to current revision
- Changed Non Licensed Operator to Equipment Operator

SIMULATOR SETUP INSTRUCTIONS

- 1) Reset to IC-22

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) Lower 1B SI Accumulator pressure to 600 psig.
 - a) `trgset 2 "ZLO1SI8875B(2).gt.0"`
 - b) `ior ZDI1SI8875B (2 0)open`
 - c) `irf nt78 on`
- 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

INITIAL CONDITIONS

1. You are the unit NSO.
2. The unit is in Mode 1 steady state power.
3. An improper valve lineup resulted in reducing the 1B SI Accumulator pressure to 600 psig.
4. The improper valve lineup has been corrected.
5. 1BOL 5.1 has been initiated.

INITIATING CUE

1. Annunciator 1-5-B2, ACCUM 1B PRESS HIGH LOW, is LIT.
2. The Unit Supervisor directs you to restore the 1B SI Accumulator pressure to within the Technical Specification limits.
3. The nitrogen tube trailer is aligned per BOP NT-9.

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

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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.

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The timeclock starts when the candidate acknowledges the initiating cue.

RECORD START TIME: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<u>NOTE</u> If this JPM is given on the simulator, only the cues <u>underlined</u> are required to be given to the examinee.				
1. Refer to BOP SI-8, Increasing SI Accumulator Pressure <u>Cue: All prerequisites have been met</u> <u>Cue: (if asked) There are no personnel in CNMT</u>	◦ LOCATE and OPEN BOP SI-8	_____	_____	_____
2. Align nitrogen tube trailer <u>Cue: EO reports the Nitrogen Tube Trailer Manifold Discharge Valve is OPEN</u> <u>Cue: EO reports 0NT078 is OPEN</u>	DIRECT EO to OPEN: <ul style="list-style-type: none"> • Nitrogen Tube Trailer Manifold Discharge Valve • 0NT078 	_____	_____	_____
<u>NOTE</u> The following steps are located at 1PM06J.				
3. VERIFY/CLOSE 1SI943, Accumulator vent control valve <u>Cue: 1SI943 POT is set at 0.0</u>	◦ VERIFY/CLOSE 1SI943	_____	_____	_____
*4. OPEN 1SI8880, Nitrogen supply isolation valve <u>Cue: 1SI8880 'RED' light is LIT</u>	<ul style="list-style-type: none"> • OPEN 1SI8880 	_____	_____	_____
5. Initiate 1BOL 5.1 <u>Cue: 1BOL 5.1 has been initiated</u>	◦ INITIATE 1BOL 5.1	_____	_____	_____
*6. OPEN 1SI8875B, 1B Accumulator Vent valve <u>Cue: 1SI8875B 'RED' light is LIT</u>	Start raising accumulator pressure: <ul style="list-style-type: none"> • OPEN 1SI8875B 	_____	_____	_____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
7. Monitor pressure increase Note: Announce ~ 5 psi pressure increases from 600 psig ~ 5 seconds apart	<ul style="list-style-type: none"> ◦ Monitor pressure using 1PI-962 & 963 			
<u>NOTE</u> Alternate path initiated in the following step.				
*8. CLOSE 1SI8875B, 1B Accumulator Vent valve when accumulator pressure is between 602 and 647 psig. Cue: 1SI8875B 'RED' light is LIT Cue: 1SI8880 'GREEN' light is LIT Cue: <u>Unit Supervisor acknowledges that 1SI8875B has failed to close</u>	Stop raising accumulator pressure <ul style="list-style-type: none"> ◦ Attempt to CLOSE 1SI8875B when accumulator pressure is between 602 and 647 psig • Close 1SI8880 to stop pressure increase ◦ Inform US of 1SI8875B failure to close 			
9. Exit 1BOL 5.1. Cue: <u>US acknowledges that 1BOL 5.1 may be exited.</u>	<ul style="list-style-type: none"> ◦ EXIT 1BOL 5.1 – pressure is with in Tech Spec limit 			
10. VERIFY/CLOSE 1SI8880, Nitrogen supply isolation valve Cue: 1SI8880 'GREEN' light is LIT	<ul style="list-style-type: none"> ◦ CLOSE 1SI8880 			
11. Isolate nitrogen tube trailer Cue: <u>EO reports ONT078 is CLOSED</u> Cue: <u>EO reports the Nitrogen Tube Trailer Manifold Discharge Valve is CLOSED</u> Cue: <u>This JPM is completed</u>	DIRECT EO to CLOSE: <ul style="list-style-type: none"> ◦ ONT078 ◦ Nitrogen Tube Trailer Manifold Discharge Valve 			

RECORD STOP TIME: _____

JPM SUMMARY

Operator's Name: _____ **Job Title:** EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Increase SI Accumulator Pressure (1SI8875B fails to close)

JPM Number: N003a Revision Number: 3

Task Number and Title: 4C.SI-04 ADJUST SI accumulator pressure.

K/A Number and Importance: 006 A4.02 4.0 / 3.8

Suggested Testing Environment: Simulator

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

Reference(s):

BOP SI-8, Increasing SI Accumulator Pressure (Rev. 15)

BAR 1-5-B2, ACCUM 1B PRESS HIGH LOW (Rev. 1)

Tech Spec 3.5.1

CRITICAL STEPS (*) 4, 6 & 8

Actual Testing Environment: Simulator Control Room In-Plant Other

Testing Method: Simulate Perform

Estimated Time to Complete: 8 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 NSO.
2. The unit is in Mode 1 steady state power.
3. An improper valve lineup resulted in reducing the 1B SI Accumulator pressure to 600 psig.
4. The improper valve lineup has been corrected.
5. 1BOL 5.1 has been initiated.

INITIATING CUE

1. Annunciator 1-5-B2, ACCUM 1B PRESS HIGH LOW, is LIT.
2. The Unit Supervisor directs you to restore the 1B SI Accumulator pressure to within the Technical Specification limits.
3. The nitrogen tube trailer is aligned per BOP NT-9.

Exelon Nuclear

Job Performance Measure

Respond to a RCP Seal Malfunction

JPM Number: CR d

Revision Number: 8

Date: 7/9/2010

Revised By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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See File Copy

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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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure 1BOA RCP-1 Rev: 102
 Procedure BAR 1-7-B3, RCP SEAL LEAKOFF FLOW HIGH Rev: 10
 Procedure BAR 1-7-C3, RCP SEAL LEAKOFF FLOW LOW Rev: 51
 Procedure BOP RE-1, RCDT Pump Operation and RF Leak Detection Sump Flush Rev. 9
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. 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 8

Reformatted to current template

Added CLOSE 1RE9170 to setup to create an action in Step 9.

SIMULATOR SETUP INSTRUCTIONS

- 1) Reset to IC-21

<p>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.</p>
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- 2) IMF CV28C
- 3) CLOSE 1RE9170
- 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.

INITIAL CONDITIONS

- 1. The unit is in Mode 1, steady state.
- 2. No recent changes have been made to seal injection or RCFC configuration.

INITIATING CUE

Respond to annunciator box 7 alarms.

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

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Information For Evaluator’s Use:

UNSAT requires written comments on respective step.

* Denotes critical steps

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The timeclock starts when the candidate acknowledges the initiating cue.

.....

RECORD START TIME: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p><u>NOTE</u> If BAR 1-7-B3 and/or C3 is NOT referenced, then step 1 may be bypassed.</p>				
1. Check seal injection flows	<ul style="list-style-type: none"> CHECK all seal injection flows are stable at ~9 GPM 	_____	_____	_____
2. Determine affected RCP	<ul style="list-style-type: none"> CHECK SER printout/ flow recorder to determine 1C RCP is affected pump 	_____	_____	_____
3. Refer to 1BOA RCP-1 Note: This may be done at any time	<ul style="list-style-type: none"> LOCATE and OPEN 1BOA RCP-1 	_____	_____	_____
4. Check #1 seal DP	<ul style="list-style-type: none"> CHECK #1 Seal DP for 1C RCP > 200 psid 	_____	_____	_____
*5. Check #1 seal leakoff flow in operating range	DETERMINE # 1 seal leakoff LOW per Figure 1BOA RCP-1-1 using: <ul style="list-style-type: none"> ○ Charging header pressure ○ VCT pressure ● 1C RCP #1 seal leakoff flow recorder 	_____	_____	_____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>6. Verify #1 seal leakoff flowpath</p> <p><i>Cue: EO reports seal return filter dP is 3 psid</i></p>	<p>CHECK #1 seal leakoff isolation valves OPEN:</p> <ul style="list-style-type: none"> • 1CV8141A • 1CV8141B • 1CV8141C • 1CV8141D <p>CHECK #1 seal leakoff header isolation valves OPEN:</p> <ul style="list-style-type: none"> • 1CV8100 • 1CV8112 <p>CHECK VCT pressure</p> <p>LOCALLY CHECK seal return filter DP</p>	<p>_____</p>	<p>_____</p>	<p>_____</p>
<p>7. Check seal injection flowpath</p>	<p>CHECK seal injection isolation valves OPEN:</p> <ul style="list-style-type: none"> • 1CV8355A • 1CV8355B • 1CV8355C • 1CV8355D <p>CHECK seal injection flow is between 8 and 13 gpm per pump</p> <p>CHECK alarm 1-7-A2, RCP SEAL WTR INJ FILTER DP HIGH is NOT LIT</p> <p>CHECK #1 seal leakoff is STILL LOW per Figure 1BOA RCP-1-1</p>	<p>_____</p>	<p>_____</p>	<p>_____</p>

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>8. Determine if 1C RCP operation may continue</p>	<ul style="list-style-type: none"> • MONITOR #1 seal leakoff is < 6 GPM • MONITOR lower radial bearing temperature is not rising and is < 225° • MONITOR seal outlet temperature is not rising and is < 235°F <p>CHECK #2 seal leakoff high flow alarms on SER:</p> <ul style="list-style-type: none"> • SER point 1661 not alarm • SER point 1660 not alarm • SER point 1659 IN ALARM <li style="padding-left: 40px;">GO TO step 10 • SER point 1658 not alarm 	<p>_____</p>	<p>_____</p>	<p>_____</p>
<p style="text-align: center;"><u>NOTE</u></p> <p>At 1BOA RCP-1 step 10.a, the candidate may elect to open 1RE9170, or may go to the step 10 RNO. If the candidate uses step 10 RNO, part 10 below applies and is the method to pump down the RCDDT.</p>				

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*9 Check RCDT aligned</p> <p><i>Cue: RCDT pump switch at Rad Waste panel is in REMOTE</i></p> <p><i>Cue: 1RE1003 switch at Rad Waste panel is in AUTO</i></p>	<p>CHECK either RCDT pump is available:</p> <ul style="list-style-type: none"> • RCDT pump switch at Rad Waste panel in REMOTE • RCDT pump switch 1PM05J in AUTO • 1RE1003 switch at 1PM11J in AUTO ○ 1RE9170 switch at 1PM11J – NOT OPEN ○ Open 1RE9170 <u>OR</u> GO TO STEP 10 RNO 	<p>_____</p>	<p>_____</p>	<p>_____</p>

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>10. Direct RW operator to cycle open 1RE9163.</p> <p>Cue (if candidate directs the Radwaste operator to cycle open 1RE9163): RW operator reports 1RE9163 is OOS closed and the Shift Manager directs you to align the RCDT pumps per BOP RE-1.</p> <ul style="list-style-type: none"> ○ Utilize BOP RE-1 to align the RCDT pumps for automatic operation <ul style="list-style-type: none"> ○ Open 1RE9170 at 1PM11J ○ Verify: <ul style="list-style-type: none"> ○ 1RE1003 switch at Rad Waste panel in AUTO ○ 1RE1003 switch at 1PM11J in AUTO ○ RCDT pump switch at Rad Waste panel in REMOTE ○ RCDT pump switch 1PM05J in AUTO <p>Note: Provide the following cue(s) as requested</p> <p>Cue: Rad Waste operator will monitor U-1 RCDT level</p> <p>Cue: PPC point L0150 is being monitored</p>	<ul style="list-style-type: none"> ○ If the RCDT cannot be pumped down, direct RW Operator to cycle 1RE9163 ○ Align the RCDT pumps for automatic operation <p>MONITOR RCDT for level increase:</p> <ul style="list-style-type: none"> ○ RW panel ○ PPC point L0150 			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
11. Check #3 seal operating conditions	CHECK RCP standpipe low level alarms: NONE in ALARM <ul style="list-style-type: none"> • RCP 1A • RCP 1B • RCP 1C • RCP 1D 	_____	_____	_____
12. Check RCP condition	CONTACT System Engineering to: <ul style="list-style-type: none"> • Check and evaluate RCP vibration • Evaluate RCP seal performance 	_____	_____	_____
Cue: This JPM is completed.				

RECORD STOP TIME: _____



JPM SUMMARY

Operator's Name: _____ **Job Title:** EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Respond to a RCP Seal Malfunction

JPM Number: CR d (N-7) Revision Number: 8

Task Number and Title: 4D.OA-05-B Respond to a Reactor Coolant Pump Seal Malfunction

K/A Number and Importance: 015 AA1.22 4.0 / 4.2

Suggested Testing Environment: Simulator

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

Reference(s):

1BOA RCP-1 Rev. 102

BAR 1-7-B3, RCP SEAL LEAKOFF FLOW HIGH Rev. 10

BAR 1-7-C3, RCP SEAL LEAKOFF FLOW LOW Rev. 51

BOP RE-1, RCDT Pump Operation and RF Leak Detection Sump Flush Rev. 9

CRITICAL STEPS (*) 5 & 9

Actual Testing Environment: Simulator Control Room In-Plant Other

Testing Method: Simulate Perform

Estimated Time to Complete: 34 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 unit is in Mode 1, steady state.
2. No recent changes have been made to seal injection or RCFC configuration.

INITIATING CUE

Respond to annunciator box 7 alarms.

Exelon Nuclear

Job Performance Measure

Start RCFC's in Low Speed (SX Valves Not Open)

JPM Number: CR e

Revision Number: 0

Date: 7/8/2010

Revised By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
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 8 and 12 below.

See File Copy

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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure 1BEP-0 Rev: 201
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. 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 0

- New JPM

SIMULATOR SETUP INSTRUCTIONS

- 1) Reset 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) Close 1SX 016B
- 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

INITIAL CONDITIONS

- 1. You are the Unit 1 Assist NSO.
- 2. Unit 1 had an automatic Safety Injection Actuation.

INITIATING CUE

- 1. The Unit Supervisor directs you to perform 1BEP-0, Step 7 to Verify RCFC's are running in Accident Mode.

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.



RECORD START TIME: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Refer to 1BEP-0, Reactor Trip or Safety Injection.	<ul style="list-style-type: none"> LOCATE and 1BEP-0, Reactor Trip or Safety Injection 			
2. Check Group 2 RCFC Accident Mode Status Lights.	<ul style="list-style-type: none"> Group 2 RCFC Accident Mode Status Lights are NOT lit 			
*3. Stop any RCFC running in High Speed.	<ul style="list-style-type: none"> Stop all RCFC's running in High Speed 			
*4. Close CNMT chiller inlet and outlet valves.	<ul style="list-style-type: none"> Close 1SX112A & B and 1SX114A & B. 			
*5. Open CNMT chiller bypass valves.	<ul style="list-style-type: none"> Open 1SX147A & B. 			
<p><u>NOTE</u></p> <p>Alternate path initiated in the following step.</p>				
*6. Verify/Open RCFC inlet valves.	<ul style="list-style-type: none"> 1SX016A is OPEN. Open 1SX016B. 			
7. Verify RCFC outlet valves are OPEN.	<ul style="list-style-type: none"> 1SX027A is OPEN. 1SX027B is OPEN. 			
*8. Start all RCFC's in Low Speed.	<ul style="list-style-type: none"> Start all RCFC's in Low Speed. 			
<p><i>Cue: This JPM is completed.</i></p>				

RECORD STOP TIME: _____



JPM SUMMARY

Operator's Name: _____ **Job Title:** EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Start RCFC's in Low Speed (SX Valves Not Open)

JPM Number: CR e Revision Number: 0

Task Number and Title: 4C.VP-06 STARTUP a RCFC.

K/A Number and Importance: 022 A4.01 3.6 / 3.6

Suggested Testing Environment: Simulator

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

Reference(s):

1BEP-0, Rev 201, Reactor Trip or Safety Injection

CRITICAL STEPS (*) 3, 4, 5, 6, 8

Actual Testing Environment: Simulator Control Room In-Plant Other

Testing Method: Simulate Perform

Estimated Time to Complete: 8 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

3. You are the Unit 1 Assist NSO.
4. Unit 1 had an automatic Safety Injection Actuation.

INITIATING CUE

2. The Unit Supervisor directs you to perform 1BEP-0, Step 7 to Verify RCFC's are running in Accident Mode.

Exelon Nuclear

Job Performance Measure

Supply ESF Bus from Reserve Feed Supply

JPM Number: CR f

Revision Number: 0

Date: 7/21/2010

Revised By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
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 8 and 12 below.

See File Copy

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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure 1BOA Elec-3 Rev: 103
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. 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 0

New JPM

SIMULATOR SETUP INSTRUCTIONS

- 1) Reset 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) **IMF EG08B** and **MRF ED117 OPEN** to prevent 1B EDG from starting and fail the SAT feed to Bus 142
- 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

SIMULATOR OPERATING INSTRUCTIONS

When directed by the evaluator, **MRF ED007 CLOSE** to close ACB 2424.

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is in Mode 1, steady state power.

INITIATING CUE

1. Bus 142 is de-energized.
2. 1B EDG failed to start.
3. The US has directed you to perform 1BOA Elec-3, Loss of 4KV ESF Bus, for Bus 142.

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.

.....

RECORD START TIME: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<u>NOTE</u> Provide examinee with a copy of 1BOA Elec-3				
1. Refer to 1BOA Elec-3 CUE: Provide examinee with copy of 1BOA Elec-3.	<ul style="list-style-type: none"> • Locate and Open 1BOA Elec-3 	_____	_____	_____
2. Determine affected Bus	<ul style="list-style-type: none"> ○ Check Bus 141 – Energized • Check Bus 142 – NOT energized 	_____	_____	_____
3. Implement 1BOA Elec-3, Attachment C for Bus 142	<ul style="list-style-type: none"> • Implement 1BOA Elec-3, Attachment C 	_____	_____	_____
4. Verify required loads energized on Bus 141	Verify the following loads energized on Bus 141: <ul style="list-style-type: none"> • Bus 131X • Bus 131Z • 1A CV pump • 1A RCFC • 1C RCFC • 1A CC pump • 1A SX pump • 0A VC Train • VA supply and exhaust fans 	_____	_____	_____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*5. Check Bus 142 not faulted	Place ACBs in Pull Out: <ul style="list-style-type: none"> • 1423 • 1421 • 1422 • 1424 Check Lockout Alarms are NOT LIT: <ul style="list-style-type: none"> • 1-22-A7 • 1-22-B8 • 1-22-B9 	_____	_____	_____
6. Limit Bus 142 loads	Place the following loads in Pull Out: <ul style="list-style-type: none"> • 1B CV pump • 1B RH pump • 1B SI pump • 1B CS pump • U-0 CC pump from Bus 142 • 1B CC pump • 1B SX pump • 0B VC Train <ul style="list-style-type: none"> • 0B VC Chiller ○ 0B VC Fans • 0B VA supply and exhaust fans 	_____	_____	_____
7. Check Unit 2 242-244 bus tie is OPEN. CUE: ACB 2421 is OPEN	<ul style="list-style-type: none"> • Direct U-2 NSO to verify that ACB 2421 is Open 	_____	_____	_____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8. Energize U-2 Reserve Feed CUE: (After sim operator closes ACB 2424) ACB 2424 is CLOSED.	<ul style="list-style-type: none"> Direct U-2 NSO to synch and close ACB 2424 	_____	_____	_____
*9. Synchronize ACB 1424	<ul style="list-style-type: none"> Place ACB 1424 Synch Switch to ON 	_____	_____	_____
*10. Close ACB 1424.	<ul style="list-style-type: none"> Close ACB 1424 	_____	_____	_____
11. Check Bus 142 is Energized	<ul style="list-style-type: none"> Check that Bus 142 ALIVE light is LIT 	_____	_____	_____
CUE: The US will direct the loading of Bus 142 as needed, and will refer to Tech Specs.				
CUE: This JPM is complete.				

RECORD STOP TIME: _____



JPM SUMMARY

Operator's Name: _____ Job Title: EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Supply ESF Bus from Reserve Feed Supply

JPM Number: CR f Revision Number: 0

Task Number and Title: R-OA-024 Energize an Electrical Bus

K/A Number and Importance: 062 A4.01 3.3

Suggested Testing Environment: Simulator

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

Reference(s):

1BOA Elec-3, Loss of 4KV ESF Bus, Rev 103

CRITICAL STEPS (*) 5, 9 & 10

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 Assist NSO.
2. Unit 1 is in Mode 1, steady state power.

INITIATING CUE

1. Bus 142 is de-energized.
2. 1B EDG failed to start.
3. The US has directed you to perform 1BOA Elec-3, Loss of 4KV ESF Bus, for Bus 142.

Exelon Nuclear

Job Performance Measure

Perform Calorimetric Using Process Plant Computer (NI Adjustment Required)

JPM Number: CR g (N-08a)

Revision Number: 0

Date: 08/20/2008

Developed By:	<u>Brian L Clark (<i>signature on file</i>)</u> Instructor	<u>8/20/2008</u> Date
Validated By:	<u>Marty J Jorgensen (<i>signature on file</i>)</u> SME or Instructor	<u>9/17/2008</u> Date
Reviewed By:	<u>William Kouba (<i>signature on file</i>)</u> Operations Representative	<u>9/18/2008</u> Date
Approved By:	<u>Robert M Meyer (<i>signature on file</i>)</u> Training Department	<u>9/19/2008</u> 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 8 and 12 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.
- See 5. Initiating cue (and terminating cue if required) are properly identified.
6. Task standards identified and verified by SME review.
- File 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- Copy 8. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BOSR 3.1.2-1 Rev: 16
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

<u>See File Copy</u>	
SME / Instructor	Date
<u>See File Copy</u>	
SME / Instructor	Date
<u>See File Copy</u>	
SME / Instructor	Date

Revision Record (Summary)

Revision 00

1. New JPM created from N-08 rev 8
2. Made changes listed in the validation comments

<u>Validation Comments for N08a</u>	
Validated 9/3/08 - Marty Jorgenson, Brian Clark	
Comment	Resolution
The simulator setup instructions should includes steps to verify HMI and alarm typer screens are clear. The HMI should be set to a trend page and the OPCON access pages should be set to main menu	Added steps
BOSR needs a signed cover sheet.	Added cover sheet

SIMULATOR SETUP INSTRUCTIONS

1. Reset 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. At 1PM07J adjust N44 to 99.0% and verify N41, N42, and N43 100.0%
3. Verify both HMI OPCON access pages are set to main menu
4. Verify point trends are displayed on both HMI screens
5. Verify alarm typer clear of all calorimetric information
6. 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
7. This completes the setup for this JPM

INITIAL CONDITIONS

- 1. You are the Unit NSO
- 2. The unit is in Mode 1.

INITIATING CUES

- 1. You have been directed by the Unit Supervisor to perform calorimetric per 1BOSR 3.1.2-1, using the Plant Process Computer.

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>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment #
<u>NOTE</u> Permission shall be obtained from the Unit NSO prior to using Process Plant Computer.				
<u>NOTE</u> If this JPM is performed on the simulator, only the cues <u>underlined</u> are required to be provided to the trainee.				
<u>NOTE</u> It is the intention of this JPM that it NOT be simulated but rather actually performed either in the simulator or at the plant.				
<u>NOTE</u> Provide trainee with a copy of <u>_BOSR 3.1.2-1</u> .				
1. Refer to <u>_BOSR 3.1.2-1</u> , Calorimetric Calculation Daily Surveillance Note: Step 1 may be performed at any time. <u>Cue: All prerequisites and precautions are met</u>	OPEN <u>_BOSR 3.1.2-1</u>	_____	_____	_____
2. Complete Data sheet D2 blocks 1	RECORD: Date Time Name	_____	_____	_____
3. Complete Data sheet D2 blocks 2 <u>Cue: Current generator output is 1245 MW</u> <u>Cue: Control Bank D at 221 steps</u> <u>Cue: All prerequisites are met</u>	RECORD: Gross MW Control bank positions Prerequisites met	_____	_____	_____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment #
*4. Complete Data sheet D2 block 3 <i>Cue: N41, N42, and N43 are 100.0% and N44 is 99.0%</i>	From 1PM07J RECORD NIS power for N41, N42, N43, and N44	<hr/>	<hr/>	<hr/>
<p><u>NOTE</u></p> <p>The procedure branches to step F.23 when using the process computer. The intention of this JPM is to do the same. Because the branching instruction is contained within a procedure note the trainee may miss the branch. If this happens, <i>Cue: The Unit Supervisor wants the calorimetric to be performed using the plant process computer.</i></p>				
5. Open the OPCON Main Menu <i>Cue: OPCON Main Menu is open.</i>	On OPCON page of HMI computer DEPRESS MENU key	<hr/>	<hr/>	<hr/>
6. Select option "23" calorimetric <i>Cue: Option 23 is selected</i>	SELECT option 23	<hr/>	<hr/>	<hr/>
7. Determine type of calorimetric to use <i>Cue: <u>(If asked) There are no flow inconsistencies.</u></i>	SELECT the 10 minute average long output	<hr/>	<hr/>	<hr/>
8. Select desired output device <i>Cue: 5 is entered</i>	Enter 5 to SELECT ALARM TYPER	<hr/>	<hr/>	<hr/>
9. Verify SG blowdown flow <i>Cue: <u>(if asked)SG blowdown rates are at the expected value</u></i>	Review SG blowdown flowrates	<hr/>	<hr/>	<hr/>
*10. Run the program <i>Cue: The Execute Key is depressed</i>	DEPRESS Execute	<hr/>	<hr/>	<hr/>

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment #
<p><u>NOTE</u></p> <p>When the candidate highlights the calorimetric calculation on the Alarm typer, direct the candidate to NOT select print, and provide the copy of the computer printout.</p>				
<p>11. Highlight calorimetric calculation on the Alarm Typer and select PRINT.</p> <p><u>Cue: Provide the Examinee with a copy of the computer print out</u></p>	<p>Print the calculation from the Alarm Typer.</p>	_____	_____	_____
<p><u>NOTE</u></p> <p>The Prerequisite Check may be performed on the OPCON screen or the Alarm Typer.</p>				
<p>12. Perform a Prerequisite check</p> <p><u>Cue: The Prerequisite Check is satisfactory.</u></p>	<p>Review Prerequisites and verify no unexpected deviations are present.</p>	_____	_____	_____
<p><u>NOTE</u></p> <p>Alternate path is initiated in the following step.</p>				
<p>13. Record NIS Indicated Power</p> <p><u>Cue: NIS N41, N42, and N43 = 100.0% NIS N44 = 99.2%</u></p>	<p>Obtain NIS Indicated Power for each power range from Data Sheet D2 block 3 and record on Data Sheet D8 block 26</p>	_____	_____	_____
<p>14. Record Percent Power</p> <p><u>Cue: Calorimetric Power = 99.9%</u></p>	<p>Obtain Percent Power from Computer Printout Screen for each Power Range NI on Data Sheet D8 Block 27.</p>	_____	_____	_____
<p>*15. Calculate the Power Difference</p>	<p>CALCULATE the Power Difference and record results on Data Sheet D8 block 28.</p> <p>(NIS Power – Calorimetric Power = Power Difference)</p>	_____	_____	_____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment #
16. Determine if NIS adjustments are required	Power Difference is positive and < 0.5% for channels N41, N42, and N43. Initial Data Sheet D8 block 29 for N41, N42, and N43.	_____	_____	_____
17. Obtain current percent power reading for channels to be adjusted. Cue: NIS N44 = 99.2%	At 1PM07J obtain current percent power reading for N44 and record reading on Data Sheet D8 block 30	_____	_____	_____
18. Determine power level to adjust to.	Subtract the Power Difference recorder in step F.28 from the current NIS reading record results on Data Sheet D8 block 31	_____	_____	_____
19. Place the Rod Control system in manual Cue: Rods are in Manual Cue: <u>(If asked)US acknowledges placing Rods in Manual.</u>	Place Rods in Manual	_____	_____	_____
*20. Adjust the out of tolerance channels. Cue: NIS N44 = 99.9%	Adjust the GAIN Potentiometer on the Power Range N44 Drawer B at 1PM07J to 99.91% to 100.41%	_____	_____	_____
21. Verify / Reset positive Rate trip Cue: (After Reset) The Positive Rate trip light is <u>not</u> lit.	Check Positive Rate trip light and reset if it is lit.	_____	_____	_____
22. Initial adjustment complete.	Initial adjustment complete for N44 on Data Sheet D8 block 34	_____	_____	_____
23. Return Rod control system to auto Cue: <u>(If asked)US acknowledges placing Rods in Auto.</u>	Place Rods in Auto	_____	_____	_____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment #
<i>Cue: <u>This JPM is completed</u></i>				

RECORD STOP TIME: _____

JPM SUMMARY

Operator's Name: _____ Job Title: EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Perform: Calorimetric Using Process Plant Compute (NI Adjustment Required)

JPM Number: N-08 Revision Number: 00

Task Number and Title: 4C.NI-05

K/A Number and Importance: 015A1.01 (3.5 / 3.8)

Suggested Testing Environment: Simulator

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

Reference(s): 1BOSR 3.1.2-1, Calorimetric Calculation Daily Surveillance (Rev. 16)

CRITICAL STEPS (*) 4, 10, 15 & 20

Actual Testing Environment: Simulator Control Room In-Plant Other

Testing Method: Simulate Perform

Estimated Time to Complete: 20 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 NSO
2. The unit is in Mode 1.

INITIATING CUES

1. You have been directed by the Unit Supervisor to perform calorimetric per 1BOSR 3.1.2-1, using the Plant Process Computer.



Exelon Nuclear

Job Performance Measure

Respond to a loss of Instrument Air

JPM Number: CR h

Revision Number: 0

Date: 7/7/2010

Revised By:

Instructor

Date

Validated By:

SME or Instructor

Date

Reviewed By:

Operations Representative

Date

Approved By:

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 8 and 12 below.

See File Copy

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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure 1BOA Sec-4 Rev: 106
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
9. Verify cues both verbal and visual are free of conflict.
10. Verify performance time is accurate
11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
12. 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 0

- New JPM

SIMULATOR SETUP INSTRUCTIONS

- 1) Reset to IC-7

<p>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.</p>
--

- 2) **IMF CV19** to fail RMCS.
- 3) **IMF CV16 8** to fail 1LT112A (VCT Level Transmitter) to 8%.
- 4) **IMF CV17 8** to fail 1LT185 (VCT Level Transmitter) to 8%.
- 5) **IMF RX13A, RX13B, RX13C 91** to fail Pressurizer Level to 91% indicated level.
- 6) **MRF zao1li462 80** to fail LI462 to 80% indicated level.
- 7) Close 1IA065 and 1IA066.
- 8) 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
- 9) This completes the setup for this JPM

SIMULATOR OPERATING INSTRUCTIONS

- 1) Maintain Pressurizer Level below 92% throughout this JPM.

INITIAL CONDITIONS

1. You are the Unit 1 NSO.
2. Unit 1 is in MODE 3.
3. 1IA065 and 1IA066 have failed closed due to an air line break.
4. Unit 1 Boric Acid Transfer Pump has tripped and cannot be restarted.

INITIATING CUE

The Unit Supervisor directs you to take actions in accordance with 1BOA SEC-4, Loss of Instrument Air, starting at step 3, while the other operators implement 0 and 2BOA SEC-4.

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.



RECORD START TIME: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Refer to 1BOA SEC-4, Loss of Instrument Air	<ul style="list-style-type: none"> ○ LOCATE and OPEN 1BOA SEC-4, Loss of Instrument Air 			
2. Control RCP Seal Injection	<ul style="list-style-type: none"> ● Check 1CV121 Not Failed OPEN ○ 1CV121 demand is at minimum and charging flow is at 52 GPM 			
3. Check VCT level	<ul style="list-style-type: none"> ● VCT level indicates less than 10% 			
*4. Open RWST to CV pump suction valves	<ul style="list-style-type: none"> ● Open at least ONE of these: 1CV112D & E 			
*5. Close VCT outlet valves	<ul style="list-style-type: none"> ● Close at least ONE of these: 1CV112B & C 			
<p><u>NOTE</u></p> <p>Alternate path is initiated in the following step.</p>				
*6 Maintain Pzr level	<ul style="list-style-type: none"> ● Because Pressurizer level is 91%: ● Verify 1CC685 is open. ● Stop 1A CV pump 			
7. Raise SX flow to CC heat exchanger	<ul style="list-style-type: none"> ● Direct EO or request US to direct EO to throttle open SX to CC heat exchanger valve (1SX007) 			
<p><i>Cue: This JPM is completed.</i></p>				

RECORD STOP TIME: _____



JPM SUMMARY

Operator's Name: _____ **Job Title:** EO RO SRO FS
 STA/IA SRO Cert

JPM Title: Respond to a loss of Instrument Air

JPM Number: CR h Revision Number: 0

Task Number and Title: R-OA-083 Recover from a Loss of Air.

K/A Number and Importance: 078 K3.02 3.4 / 3.6

Suggested Testing Environment: Simulator

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

Reference(s):

1BOA SEC-4, Rev 106, Loss of Instrument Air Unit 1

CRITICAL STEPS (*) 5 & 6

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 NSO.
2. Unit 1 is in MODE 3.
3. 1IA065 and 1IA066 have failed closed due to air line breaks.
4. Unit 1 Boric Acid Transfer Pump has tripped and cannot be restarted.

INITIATING CUE

The Unit Supervisor directs you to take actions in accordance with 1BOA SEC-4, Loss of Instrument Air, starting at step 3, while the other operators implement 0 and 2BOA SEC-4.