Exelon Nuclear

Job Performance Measure

Realign a Misaligned Rod

JPM Number: CR a

Revision Number: 00

Date: 12/28/2009

Revised By:	R. F. Peterson Instructor	12/28/2009 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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.

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

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

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

__RFP__ 4. Initial setup conditions are identified.

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

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

__RFP__ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

__RFP__ 8. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BOA Rod-3 Rev: 110

__RFP__ 9. Verify cues both verbal and visual are free of conflict.

__RFP__ 10. Verify performance time is accurate

__RFP__ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.

__RFP__ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

Brian Lewin/Robert Peterson	12/9/2015
SME / Instructor	Date
SME / Instructor	Date
SME / Instructor	Date

Revision Record (Summary)

Revision 00, Initial revision of JPM

Comment	Resolution
OTPS: Cues should be after actions. No critical steps identified. 2 steps labeled #8. KA should be 001K4.01	Moved cues. Identified critical steps. Fixed step numbering. I think chosen KA is a better fit.
Validators: The JPM should be complete after the rods are properly aligned and P/A converter is shut down.	Removed JPM steps after 11. Revised that JPM is complete at that point.

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-18, 75% power.
2. Place the Rod Mode select switch to CB D Bank Select, open the lift disconnect switches for all Control Bank D rods except M-4 and insert CB D M-4 from 180 steps to 174 steps.
3. Place Rode Mode select switch to Manual.
4. Reset the Urgent Failure Alarm.
5. Reset the Group Bank Indicator for CB D to 180 steps.
6. Allow simulator to run for 5 minutes or until temperature has stabilized. Adjust other parameters as needed, ie; charging or seal injection flowrates, etc.
7. Fill in Attachment A step 7.
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.

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. One hour ago, a blown rod control fuse resulted in Unit 1 Control Bank D M-4 inserting to 174 steps.
3. The failure has been corrected and control systems returned to their original alignment.
4. 1BOA Rod-3, Dropped or Misaligned Rod was entered and completed through Step 9. All required data has been recorded.
5. Extra NSOs are in the Miscellaneous Electrical Equipment Room standing by.

INITIATING CUE

The Unit Supervisor directs you to realign CB D M-4 to its bank.

Notify the Unit Supervisor when 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 5, 7 & 9**

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:	Supply candidate with 1BOA Rod-3, place-kept to, including, Step 9 and Attachment A for Step 7 filled in.				
1	Refer to 1BOA Rod-3, Dropped or Misaligned Rod	○ LOCATE and OPEN 1BOA Rod-3	___	___	___
2	Verify Reactor Power is proper for rod recovery.	• DRPI indicates affected rod is misaligned LESS than 12 steps.	___	___	___
CUE	If candidate asks, all applicable Tech Specs have been entered.				
3	Check affected rod for blown fuses **Cue: An extra NSO is in the Miscellaneous Electric Equipment Room with the required keys and reports CB D M-4 fuses have been replaced and checked NOT blown.**	• CB D M-4 fuses have been replaced and checked NOT blown.	___	___	___
4	Record affected bank position **Cue: The extra NSO reports:** • **The P/A Display has CB D selected** • **P/A reading for CB D is 180 steps** • **BOU reading is 528 steps, and DS1 is LIT,** • **DS2 is LIT and DS3 is NOT LIT.**	• Record P/A reading for CB D is 180 steps. • Record BOU reading is 528 steps. • Record DS1 is LIT, DS2 is LIT and DS3 is NOT LIT.	___	___	___
NOTE	Acknowledge requests for peer checks by the candidate.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***5**	**Prepare CB D for rod recovery** **CUE: Extra NSO has opened the CB D disconnect switches for CB D rods M-12, D-12, D-4 and H-8**	• Place Rod Bank Select Switch to CB D • At 1RD10J, open the disconnect switches for CB D rods M-12, D-12, D-4 and H-8 • Record CB D step counter as 180 steps • Record CB D DRPI reading of 174 steps	___	___	___
CUE	After the candidate places C0068 in test, inform the candidate that 10 minutes has passed.				
6	Place computer points in test	• Place Pt # C0068 IN TEST • Place Pt # U0052 IN TEST	___	___	___
***7**	**Set Group Step Counter to desired position**	• Set CB D Group Step Counter to 174	___	___	___
CUE	As US, acknowledge candidate's request to refer to TS 3.1.7				
8	Reset P/A Converter **Cue: the extra NSO reports** • **The P/A Display is for CB D** • **The P/A converter is set to 174 steps.**	• Direct extra NSO to set the P/A Converter to 174 steps at 1RD08J.	___	___	___
CUE	If asked, it has been 1 hour + (time since JPM start time) since the rods were misaligned, and all rod repairs are complete. QNE has determined CB D D-4 may be moved directly to desired position.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***9**	**Move affected rod into alignment**	• CB D Group Step Counter is at 180 steps • Rod Control Urgent Failure alarm is LIT when rod motion begins • Tave-Tref mismatch is within 3°F • Thermal power does not exceed 100%	___	___	___
10	Check status of Master Cycler **Cue:** The extra NSO reports DS1 is LIT, DS2 is LIT and DS3 is NOT LIT.	• DS1 is LIT, DS2 is LIT and DS3 is NOT LIT	___	___	___
11	Check rod is properly aligned. **CUE: The extra NSO reports P/A reading for CB D is 180 steps and BOU reading is 528 steps.** Directs extra NSO to place P/A converter display to OFF **Cue: The extra NSO reports P/A converter display is OFF**	• Rod D-4 matches CB D DRPI position • P/A reading for CB D is 180 steps • BOU reading is 528 steps. • P/A converter display is OFF	___	___	___
CUE	An extra NSO will complete 1BOA Rod-3 from this point. The JPM is complete.				
NOTE	**Remove computer points C0072 and U0052 from TEST. Close lift disconnects.**				

JPM Stop Time: _____

JPM SUMMARY

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

JPM Title: Realign a Misaligned Rod

JPM Number: CR a Revision Number: 00

Task Number and Title: R-GP-038: Operate the Control Rod Drive System in manual, automatic and bank select

K/A Number and Importance: 003AA1.02 Imp Factor 3.6/3.4

Suggested Testing Environment: Simulator

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

Reference(s): 1BOA Rod-3, Dropped or Misaligned Rod, Rev 110

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 1 Assist NSO.
2. One hour ago, a blown rod control fuse resulted in Unit 1 Control Bank D M-4 inserting to 174 steps.
3. The failure has been corrected and control systems returned to their original alignment.
4. 1BOA Rod-3, Dropped or Misaligned Rod was entered and completed through Step 9. All required data has been recorded.
5. Extra NSOs are in the Miscellaneous Electrical Equipment Room standing by.

INITIATING CUE

The Unit Supervisor directs you to realign CB D M-4 to its bank.

Notify the Unit Supervisor when complete.

Exelon Nuclear

Job Performance Measure

Perform Transfer to Hot Leg Recirc (1SI-8840 will not OPEN)

JPM Number: CR-b

Revision Number: 00

Date: 1/24/2013

Revised By:	Bill Hochstetter Instructor	1/24/2013 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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 ES-1.4 Rev: 200
   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:

Bill Hochstetter	1/24/2013
SME / Instructor	Date
Brian Lewin/Robert Peterson	12/9/2015
SME / Instructor	Date
SME / Instructor	Date

Revision Record (Summary)

Revision 0

- Applied new template TQ-JA-150-02 Rev.1
- Verified/ updated KAs and TPOs to current revision
- Validated 03/03/13 by Bill Hochstetter and Rob Lawlor, revised to make alternate path
- Created from JPM No. N-30.

SIMULATOR SETUP INSTRUCTIONS

1. Reset to an IC that establishes: LOCA and currently on Cold Leg Recirc

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. Turn annunciators to OFF.
3. IOR ZDI1SI8840(1) to CLS
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 1 NSO.
2. A large LOCA is in progress.
3. 1BEP-1 step 19 has been completed.
4. 5 hours 50 minutes has elapsed since SI was actuated.
5. The Shift Manager is aware of this procedure transition

INITIATING CUE

1. The Unit Supervisor has directed you to proceed with 1BEP ES-1.4, Transfer to Hot Leg Recirculation.

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: **2, 6-16, 18**

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: _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE If this JPM is performed on the simulator, only the cues underlined are required to be provided to the examinee Once the examinee references the procedure the evaluator may hand the candidate a copy of 1BEP ES-1.4				
1. Refer to 1BEP ES-1.4, Transfer to Hot Leg Recirculation **Note: This step may be performed at any time.**	o LOCATE and OPEN 1BEP ES-1.4	____	____	____
***2**. Place SVAG Valve Bus Feeds to Close.	At 1PM06J, CLOSE: • 480V Feed to Bus 131X1A/X2A • 480V Feed to Bus 132X2A/X4A	____	____	____
3. Close RH to cold legs isol valves.	At 1PM06J, CLOSE: • 1SI8809A • 1SI8809B	____	____	____
4. Check 1A RH pump running.	At 1PM06J: • CHECK RHR pump 1A RUNNING	____	____	____
5. OPEN Train A RH HX discharge crosstie header valve	At 1PM06J: • OPEN 1RH8716A	____	____	____
NOTE **Alternate Path JPM starts here**				
***6.** Open RH to hot legs isol valve.	At 1PM06J: • Recognize that 1SI8840 will **not** OPEN	____	____	____
***7.** CLOSE any open RH HX discharge crosstie header valve	At 1PM06J: • CLOSE 1RH8716A • CLOSE 1RH8716B	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***8.** OPEN RH to cold legs isol. valves	At 1PM06J: • OPEN 1SI8809A • OPEN 1SI8809B			
***9**. Stop SI pump 1A.	At 1PM06J: • STOP 1A SI pump			
***10.** Close SI pump 1A to cold legs isol valve.	At 1PM06J: • CLOSE 1SI8821A			
***11.** Open SI pump 1A to hot legs isol valve.	At 1PM06J: • OPEN 1SI8802A			
***12.** Start the 1A SI pump.	At 1PM06J: • START 1A SI pump			
***13.** Stop SI pump 1B.	At 1PM06J: o STOP 1B SI pump			
***14**. Close SI pump 1B to cold legs isol valve.	At 1PM06J: • CLOSE 1SI8821B			
***15.** Open SI pump 1B to hot legs isol valve.	At 1PM06J: • OPEN 1SI8802B			
***16**. Start the 1B SI pump.	At 1PM06J: • START 1B SI pump			
17. Check SI pumps to hot legs isol valves open	At 1PM06J, Verify OPEN o 1SI8802A o 1SI8802B			
***18.** Close SI pumps to cold leg isol valve	At 1PM06J: • CLOSE 1SI8835			
19. Place SVAG Valve Bus Feeds to TRIP.	At 1PM06J, TRIP o 480V Feed to Bus 131X1A/X2A o 480V Feed to Bus 132X2A/X4A			
Cue: <u>This JPM is completed</u>				

RECORD STOP TIME: _____

JPM SUMMARY

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

JPM Title: Align ECCS to Hot Leg Recirc

JPM Number: CR b Revision Number: 0

Task Number and Title: 4D.EP-15 TRANSFER ECCS to Hot Leg Recirculation

K/A Number and Importance: 011EA1.11 4.2/4.2

Suggested Testing Environment: Simulator

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

Reference(s):

1BEP ES1.4, Transfer to Hot Leg Recirculation (Rev. 200)

CRITICAL STEPS (*) 2, 6-16, 18

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: _____

Evaluator's Name: _____ (Print)

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

INITIAL CONDITIONS

1. You are the Unit 1 NSO.

2. A large LOCA is in progress.

3. 1BEP-1 step 19 has been completed.

4. 5 hours 50 minutes has elapsed since SI was actuated.

5. The Shift Manager is aware of this procedure transition

INITIATING CUE

1 The Unit Supervisor has directed you to proceed with 1BEP ES-1.4, Transfer to Hot Leg Recirculation.

Exelon Nuclear

Job Performance Measure

1A Safety Injection Pump ASME startup (with cavitation indication)

JPM Number: CR c

Revision Number: 01

Date: 06/09/2003

Revised By:	R. F. Peterson Instructor	10/6/2013 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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.

RFP	1.	Task description and number, JPM description and number are identified.
RFP	2.	Knowledge and Abilities (K/A) references are included.
RFP	3.	Performance location specified. (in-plant, control room, simulator, or other)
RFP	4.	Initial setup conditions are identified.
RFP	5.	Initiating cue (and terminating cue if required) are properly identified.
RFP	6.	Task standards identified and verified by SME review.
RFP	7.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
RFP	8.	Verify the procedure(s) referenced by this JPM reflects the current revision: • BOP SI-1, Safety Injection System Startup (Rev. 16) • 1BOSR 5.5.8.SI.5-1A, Group A IST Requirements for SI Pump 1SI01PA
RFP	9.	Verify cues both verbal and visual are free of conflict.
RFP	10.	Verify performance time is accurate
RFP	11.	If the JPM cannot be performed as written with proper responses, then revise the JPM.
RFP	12.	When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

Brian Lewin/Robert Peterson	10/6/2013
SME / Instructor	Date
Brian Lewin/Robert Peterson	12/9/2015
SME / Instructor	Date
SME / Instructor	Date

Revision Record (Summary)

Revision 00, Initial revision of JPM

Comment	Resolution
OTPS: Wrong critical steps identified. KA should be A4.01	Moved cues. Identified critical steps. Changed KA as identified. Added “ALTERNATE PATH BEGINS HERE” before step 14.

Simulator Setup Instructions

1. Reset to IC-18, 75% power.
2. Run CRccaep.cae which has the following actions:

This closes the 1A SI pump suction valve on a pump start|00:00:00|1

Trgset 2 "zlo1si01pa(3) > 0" |00:00:01|2

ior zloMLB544 (2) off|00:00:01|3

ior zlo1SI8923A1 off|00:00:02|4

ior zlo1SI8923A2 off|00:00:03|5

mrf ed053w (2) close|00:00:04|6

ior zdi1SI8923A (2) cls|00:00:05|7

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. 1BOSR 5.5.8.SI.5-1a for 1A Safety Injection pump is in progress
3. The Field Supervisor is in the field awaiting a start of the 1A Safety Injection pump for an ASME surveillance run.
4. An EO has been dispatched and is performing steps F.1, F.2, and F.3 of BOP SI-1

INITIATING CUE

The Unit Supervisor has directed you to start the 1A Safety Injection Pump on recirculation back to the RWST per BOP SI-1.

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: 13, 14**

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 If requested, provide the candidate with a copy of 1BOSR 5.5.8.SI.5-1A, Group A IST Requirements for SI Pump 1SI01PA				
1. Refer to BOP SI-1, Safety Injection System Startup.	• OPEN BOP SI-1	___	___	___
Cue: Provide BOP SI-1, placekept through step 3				
2. Review BOP SI-1, steps prior to main body. **Cue: Prerequisites have all been met.**	• Review Prerequisites, Precautions, and Limitations and Actions • Determine 1SI8821A desired status	___	___	___
Cue: (if asked) the Shift Manager desires the test be conducted with 1SI8821A closed.				
3. Verify EO has completed steps in field of BOP SI-1.	• Contact EO for status of steps F.1, F.2 and F.3 of BOP SI-1.	___	___	___
Cue: EO reports that Steps F.1, F.2 and F.3 of main body of BOP SI-1 are complete for the 1A Safety Injection pump, and the EO and Field Supervisor are ready for a start of the 1A Safety Injection pump.				

4. Align miniflow path for the 1A SI pump.	• Verify / Close the following valves:
	  • 1CV8804A
	  • 1SI8804B
	• Verify / Open the following valves:
	  • 1SI8814/8920 (need to use placard/SVAG valve lights)
	  1SI8813 (need to use placard/SVAG valve lights)
		___	___	___

5. Verify/Close 1SI8964	• Verify / Close 1SI8964 at 1PM11J	___	___	___

6. Verify/Open valves at 1PM06J to align the 1A SI pump	• Verify / Open the following valves at 1PM06J:
	  • 1SI8806 (need to use placard/SVAG valve lights)
	  • 1SI8923A
		___	___	___

7. Verify 1SI8888 closed	• Verify closed 1SI8888	___	___	___
8. Prepare for starting the 1A SI pump.	• Determine Mode of operation: procedure step 8 is applicable	___	___	___
Cue: Unit is in Mode 1				
9. Determine desired position of 1SI8821A	• 1SI8821A open light is LIT	___	___	___
Cue: (If asked) SM desires 1SI8821A be closed for the pump run.				

10. Initiate 1BOL 5.2	• Inform Unit 1 NSO and Unit 1 Unit Supervisor to Initiate LCOAR 1BOL 5.2.	___	___	___
Cue: The Unit 1 NSO and Unit Supervisor acknowledges entry into LCOAR 1BOL 5.2 for 1A SI pump.				
11. Close 1SI8821A at 1PM06J.	• 1SI8821A closed light is LIT.	___	___	___
12. Verify closed and de-energized 1SI8802A.	• 1SI8802A position lights are dark and, per placard SVAG valve indication, is closed.	___	___	___
NOTE Alternate path – upon 1A SI pump start, the pump suction valve, 1SI8923A will close. Valve status indications have been overridden so it appears the disk has separated from the stem. Cavitation indications will begin 1 to 2 minutes after pump start. Besides expected operating practice to not run a pump that's cavitating, amp readings will be fluctuating above Limitations and Action 4 of BOP SI-1. Candidate may desire to monitor 1A SI pump running indications on the HMI.				
NOTE: Alternate path starts 1 to 2 minutes after the pump is started, amps will fluctuate from about 40 to 60A and discharge pressure and recirc flow (on HMI) will drop				
***13. Start the 1A SI pump**.	• Start the 1A SI pump and monitor discharge pressure and amps.	___	___	___
Cue: (If asked) The local EO will maintain BOP SI-1T1.				
ALTERNATE PATH BEGINS HERE.				
***14. Identify cavitation indications and shutdown the 1A SI Pump**	• STOP the 1A SI pump ◦ Inform the Unit Supervisor and PED of problem with 1A SI pump.	___	___	___
Cue: The Unit Supervisor acknowledges problem with 1A SI pump.				
Cue: (If asked) Acknowledge placing 1A SI pump in PTL to prevent auto start.				

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: 1A Safety Injection Pump ASME startup (with cavitation indication)

JPM Number: CR b Revision Number: 01

Task Number and Title: IV.C.SI-01

K/A Number and Importance: 006A2.04 K&A IMP: 3.4/3.8

Suggested Testing Environment: Simulator

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

Reference(s):

1. BOP SI-1, Safety Injection System Startup (Rev. 16).
2. 1BOSR 5.5.8.SI.5-1A, Group A IST Requirements for SI Pump 1SI01PA

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 1 Assist NSO.

2. 1BOSR 5.5.8.SI.5-1a for 1A Safety Injection pump is in progress

3. The Field Supervisor is in the field awaiting a start of the 1A Safety Injection pump for an ASME surveillance run.

4. An EO has been dispatched with the Field Supervisor and is performing steps F.1, F.2, and F.3 of BOP SI-1

INITIATING CUE

The Unit Supervisor has directed you to start the 1A Safety Injection Pump on recirculation back to the RWST per BOP SI-1.

Exelon Nuclear

Job Performance Measure

Respond to a RCP Seal Malfunction

JPM Number: CR d

Revision Number: 8

Date: 7/9/2010

Revised By:	R. F. Peterson Instructor	7/9/2010 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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.

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

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

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

RFP 4. Initial setup conditions are identified.

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

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

RFP 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

RFP 8. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BOA RCP-1 Rev: 105

RFP 9. Verify cues both verbal and visual are free of conflict.

RFP 10. Verify performance time is accurate

RFP 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.

RFP 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

Brian Lewin/Robert Peterson	12/9/2015
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

> 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 CV28C
3) CLOSE 1RE9170
4) IMF PN1311 OFF
5) IMF PN1313 OFF
6) IMF PN1316 OFF
7) When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
8) This completes the setup for this JPM.

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.

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: _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE **If BAR 1-7-B3 and/or C3 is NOT referenced, then step 1 may be bypassed.**				
1. Check seal injection flows	• CHECK all seal injection flows are stable at ~9 GPM	____	____	____
2. Determine affected RCP	• 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**	• LOCATE and OPEN 1BOA RCP-1	____	____	____
4. Check #1 seal DP	• 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: ○ Charging header pressure ○ VCT pressure • 1C RCP #1 seal leakoff flow recorder	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
6. Verify #1 seal leakoff flowpath ***Cue: EO reports seal return filter dP is 3 psid***	CHECK #1 seal leakoff isolation valves OPEN: • 1CV8141A • 1CV8141B • 1CV8141C • 1CV8141D CHECK #1 seal leakoff header isolation valves OPEN: • 1CV8100 • 1CV8112 CHECK VCT pressure LOCALLY CHECK seal return filter DP	____	____	____
7. Check seal injection flowpath	CHECK seal injection isolation valves OPEN: • 1CV8355A • 1CV8355B • 1CV8355C • 1CV8355D CHECK seal injection flow is between 8 and 13 gpm per pump CHECK alarm 1-7-A2, RCP SEAL WTR INJ FILTER DP HIGH is NOT LIT CHECK #1 seal leakoff is STILL LOW per Figure 1BOA RCP-1-1	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
8. Determine if 1C RCP operation may continue	• 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 CHECK #2 seal leakoff high flow alarms on SER: • SER point 1661 not alarm • SER point 1660 not alarm • **SER point 1659 IN ALARM** **GO TO step 10** • SER point 1658 not alarm	____	____	____
NOTE **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 RCDT.**				
*9 Check RCDT aligned ***Cue: RCDT pump switch at Rad Waste panel is in REMOTE*** ***Cue: 1RE1003 switch at Rad Waste panel is in AUTO***	CHECK either RCDT pump is available: • 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**	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
10. Direct RW operator to cycle open 1RE9163. ***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.*** ○ Utilize BOP RE-1 to align the RCDT pumps for automatic operation ○ **Open 1RE9170 at 1PM11J** ○ Verify: ○ 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 **Note: Provide the following cue(s) as requested** ***Cue: Rad Waste operator will monitor U-1 RCDT level*** ***Cue: PPC point L0150 is being monitored***	○ If the RCDT cannot be pumped down, direct RW Operator to cycle 1RE9163 ○ Align the RCDT pumps for automatic operation MONITOR RCDT for level increase: ○ RW panel ○ PPC point L0150	____	____	____
11. Check #3 seal operating conditions	CHECK RCP standpipe low level alarms: NONE in ALARM • RCP 1A • RCP 1B • RCP 1C • RCP 1D	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
12. Check RCP condition	CONTACT System Engineering to: • 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 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. 105

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

Respond To 1A SX Pump Trip (Standby Pump Trips)

JPM Number: CR e

Revision Number: 1

Date: 6/8/2009

Revised By:	Lynn Sanders Instructor	09/24/15 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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.

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

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

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

RFP 4. Initial setup conditions are identified.

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

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

RFP 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

RFP 8. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure BAR 1-2-A1 Rev 6
Procedure BHC 1-2-A1 Rev 0

RFP 9. Verify cues both verbal and visual are free of conflict.

RFP 10. Verify performance time is accurate

RFP 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.

RFP 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

Lynn Sanders	9/24/15
SME / Instructor	Date
Brian Lewin/Robert Peterson	12/9/2015
SME / Instructor	Date
SME / Instructor	Date

Revision Record (Summary)

Revision 00

1. New JPM
2. Operator Actions PRA Establish SX Crosstie across units.
3. The examinee will only direct the performance of 2 critical steps. The high PRA value of establish SX Crosstie across units justifies counting these steps as critical steps.
4. Validated 9/20/11 by Lynn Sanders and Mike McCue.
5. Validated 9/21/12 by Lynn Sanders and Mike McCue.
6. Validated 8/26/13 by Lynn Sanders and Steve Widolff, only change was procedure rev that did not affect JPM.
7. Validated 9/2/14 by Tim McDougal and Steve Boomgarden.

Revision 1

1. Added Prompts actions

SIMULATOR SETUP INSTRUCTIONS

NOTE:

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

1. Reset to a Mode 1 IC
2. Verify 1A SX is running
3. Insert malfunction PN1427 to off
4. Place the simulator in **RUN**.
5. On the Examiner's cue insert malfunction **SW01A** to trip the 1A SX pump
6. 15 seconds after 1B SX pump started, insert malfunction **SW01B** to trip the 1B SX pump
7. When Unit 2 NSO is requested to open 2SX005 modify remote function **SW07** to **100**

INITIAL CONDITIONS

You are the Unit1 NSO.

INITIATING CUE

Respond to alarms on 1PM06J.

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. **2 and 5**

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: _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE **When examinee is at 1PM06J, DIRECT the booth operator to trip the 1A SX pump.** **The examinee may refer to Prompt Actions or BAR 1-2-A1 at any time.**				
1. Perform Prompt Actions	o Prompt actions performed o BAR actions performed	____	____	____
***2.** Start 1B SX Pump	At 1PM06J: • Start 1B SX pump	____	____	____
NOTE **DIRECT the booth operator to trip the 1B SX pump 15 seconds after it was started.** **The Simulator Operator will act as the U2 NSO and will perform steps 3 and 5 when requested.**				
NOTE **The next step begins the alternate path steps**.				
3. Determines SX Pump tripped and DIRECTS U2 NSO to START the standby SX Pump on Unit 2 **Cue: Unit 2 NSO reports the Unit 2 Standby SX pump is running**	o DIRECTS U2 NSO to START the standby SX Pump on Unit 2	____	____	____
NOTE **Steps 3, 4 and 5 may be performed in any order.** **DIRECT the booth operator** to modify remote function **SW07** to **100** when Unit 2 NSO is requested to open 2SX005.				

ELEMENT	**STANDARD**	**SAT**	**UNSAT**	**Comment Number**
4. DIRECTS U2 NSO to OPEN 2SX005 **Cue: Unit 2 NSO reports 2SX005 is open.**	○ DIRECTS U2 NSO to OPEN 2SX005	____	____	____
***5.** Open 1SX005.	At 1PM06J: • Open 1SX005:	____	____	____

RECORD STOP TIME: _____

JPM SUMMARY

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

JPM Title: Respond To 1A SX Pump Trip (Standby Pump Trips)

JPM Number: CR e Revision Number: 1

Task Number and Title: R-OA-108 Respond to Essential Service Water Malfunction.

K/A Number and Importance: 076 A4.01 Imp Factor: 2.9/2.9

Suggested Testing Environment: Simulator

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

Reference(s): BHC 1-2-A1, BAR 1-2-A1

CRITICAL STEPS (*) 2 & 5

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

Testing Method: ☐ Simulate ☐ Perform

Estimated Time to Complete: 5 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

You are the Unit 1 NSO.

INITIATING CUE

Respond to alarms on 1PM06J.

Exelon Nuclear

Job Performance Measure

Align the SX towers for LOCA conditions (Require RCFC shutdown)

JPM Number: CR f

Revision Number: 00

Date: 09/30/2013

Developed By:	Robert Peterson Instructor	9/30/2013 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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.

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

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

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

__RFP__ 4. Initial setup conditions are identified.

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

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

__RFP__ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

__RFP__ 8. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BEP-0 Rev: 207
Procedure _____ Rev: _____
Procedure _____ Rev: _____

__RFP__ 9. Verify cues both verbal and visual are free of conflict.

__RFP__ 10. Verify performance time is accurate

__RFP__ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.

__RFP__ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

Brian Lewin/Robert Peterson	12/9/2015
SME / Instructor	Date
_____	_____
SME / Instructor	Date
_____	_____
SME / Instructor	Date

Revision Record (Summary)

Revision 00

New JPM

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-18, 75% power.
2. Ensure 0SX03CG is not running and its associated riser valve is closed.
3. Verify/open all other riser valves 0SX163A-H
4. Verify/start 0C and 0D SX fans in low speed, all other SX fans (except 0G) in high speed.
5. Start all RCFC fans in low speed.
6. Insert the following malfunctions to fail 0C, 0D and 0G SX fans to start in high speed:
   - Imf sw07c
   - Imf sw07d
   - Imf sw07g
7. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
8. This completes the setup for this JPM.

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. A LOCA is in progress with containment spray actuated
3. 1BEP-0 is in progress.

INITIATING CUE

The Unit Supervisor directs you to align the SX towers per 1BEP-0, Attachment B, step 10.g.

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 8, 10, 12 & 14**

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	Verify/open all 8 SX tower riser valves	VERIFY/OPEN: • 0SX163A • 0SX163B • 0SX163C • 0SX163D • 0SX163E • 0SX163F • 0SX163H	___	___	___
2	Open 0SX163G SX tower riser valve	• OPEN 0SX163G	___	___	___
3	Verify/close all 4 hot water basin bypass valves	VERIFY/CLOSE: • 0SX162A • 0SX162B • 0SX162C • 0SX162D	___	___	___
NOTE:	**Steps 5 – 12 for the 3 faulted fans may be done in any order, as long as riser valve is closed when fan will not start in high speed.** **The 0C and 0D tower fans will need to be secured from low speed operation in order to start them in high speed. If vibration alarms are received on fan start, an EO may be dispatched to investigate.** **The 0C, 0D and 0G SX tower fans will not start in the following steps and therefore starts the alternate path required to accomplish the SX Tower alignment task. The examinee may attempt to start the fans a second time.**				
ALTERNATE PATH STARTS HERE					
4	Verify/start all 8 SX cooling tower fans in High Speed	Verify running in High Speed: • 0SX03CA • 0SX03CB • 0SX03CE • 0SX03CG • 0SX03CH	___	___	___
5	Stop 0SX03CC Low Speed fan	0SX03CC is stopped from Low Speed	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
6	Stop 0SX03CD Low Speed fan	0SX03CD is stopped from Low Speed	___	___	___
7	Attempt to start 0SX03CC High Speed fan	0SX03CC fails to start in High Speed	___	___	___
***8**	Close riser valve 0SX163C	0SX163C is closed	___	___	___
9	Attempt to start 0SX03CD High Speed fan	0SX03CD fails to start in High Speed	___	___	___
***10**	Close riser valve 0SX163D	0SX163D is closed	___	___	___
11	Attempt to start 0SX03CG High Speed fan	0SX03CG fails to start in High Speed	___	___	___
***12**	Close riser valve 0SX163G	0SX163G is closed	___	___	___
13	Check outside air temperature >76°F	Check air temperature on 0PM01J, or PPCS display	___	___	___
***14**	Stop all but 2 RCFCs	No more than 2 low speed RCFCs are running	___	___	___
15	Report status of task to US	Report 5 SX fans in High Speed with risers closed on tripped fans, and 2 RCFC's shutdown	___	___	___
CUE	**US acknowledges the report.**				
CUE	**This JPM is complete.**				

JPM Stop Time: _____

JPM SUMMARY

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

JPM Title: Align the SX towers for LOCA conditions (Require RCFC shutdown)

JPM Number: CR f Revision Number: 0

Task Number and Title: 4D.EP-19 Respond to Safety Injection Actuation

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

Suggested Testing Environment: Simulator

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

Reference(s): 1BEP-0

CRITICAL STEPS (*) 8, 10, 12, 14

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. A LOCA is in progress with containment spray actuated.
3. 1BEP-0 is in progress.

INITIATING CUE

The Unit Supervisor directs you to align the SX towers per 1BEP-0, Attachment B, step 10.g.

Exelon Nuclear

Job Performance Measure

Supply Non-ESF Bus from ESF Bus

JPM Number: CR g

Revision Number: 00

Date: 11/17/2015

Developed By:	Robert Peterson Instructor	11/17/2015 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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.

RFP	1.	Task description and number, JPM description and number are identified.
RFP	2.	Knowledge and Abilities (K/A) references are included.
RFP	3.	Performance location specified. (in-plant, control room, simulator, or other)
RFP	4.	Initial setup conditions are identified.
RFP	5.	Initiating cue (and terminating cue if required) are properly identified.
RFP	6.	Task standards identified and verified by SME review.
RFP	7.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
RFP	8.	Verify the procedure(s) referenced by this JPM reflects the current revision: Procedure 1BEP-0 Rev: 207
RFP	9.	Verify cues both verbal and visual are free of conflict.
RFP	10.	Verify performance time is accurate
RFP	11.	If the JPM cannot be performed as written with proper responses, then revise the JPM.
RFP	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 Revised format to current standard

Comment	Resolution
New JPM	

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-21, 100% power or other compatible IC.
2. IOR ZDI1HSAP196 TRIP to open Bus 144 UAT feed and defeat the ABT.
3. Actuate SI and stabilize the unit.

INITIAL CONDITIONS

1. You are the U-1 NSO.
2. The unit had a safety injection actuation.
3. Bus 144 failed to transfer to the SAT and the SAT feed breaker 1442 will not close. Bus 144 is intact.

INITIATING CUE

1. Align Bus 142 to supply Bus 144 using 1BEP-0, Step 23.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* **Denotes critical steps 3 & 8.**

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 1BEP-0, Step 23.	Locate and read 1BEP-0, Step 23.			
2	Place 0A Service Building Chiller switch in PULL OUT.	Dispatch EO to place 0A Service Building Chiller switch in PULL OUT.			
CUE	**EO reports 0A Service Building Chiller switch is in PULL OUT.**				
***3**	Place feeder breakers 1441 and 1442 in PULL OUT.	Feed breakers 1441 and 1442 are in PULL OUT.			
4	OPEN all 480V Transformer High and Low side breakers for Bus 144.	Open High side breakers 1445XY, 1445ZW, 1445BC and 1445VU. Open Low side breakers 134X1, 134Y1, 134Z1, 034W1, 134V1.			
5	OPEN PZR Heater Low side breakers at 1PM05J.	Open Group B Backup and Group C Variable Heater breakers.			
6	Reset SI Recirc Sump isolation valves at 1PM06J.	Press Reset Buttons on 1SI8811A and 1SI8811B.			
CUE	**SI Recirc Sump Isolation valves have been reset.**				
7	Place non-running equipment on Bus 144 in PULL OUT.	Place 0B WS Pump, 1B SAC and 1B CNMT Chiller in PULL OUT.			
***8**	Close Non-ESF to ESF crosstie breaker.	Close ACB 1421.			
CUE	**This JPM is complete.**				

JPM Stop Time _____

JPM SUMMARY

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

JPM Title: Supply Non-ESF Bus from ESF Bus (Post-LOCA)

JPM Number: CR g Revision Number: 00

Task Number and Title: R-OA-024 Energize an electrical bus.

K/A Number and Importance: 062A4.01 Imp Factor 3.3/3.1

Suggested Testing Environment: Simulator

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

Reference(s):

- 1BEP-0, Rev 207

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 12 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 U-1 NSO.
2. The unit had a safety injection actuation.
3. Bus 144 failed to transfer to the SAT and the SAT feed breaker 1442 will not close. Bus 144 is intact.

INITIATING CUE

1. Align Bus 142 to supply Bus 144 using 1BEP-0, Step 23.

Exelon Nuclear

Job Performance Measure

CW Pump Trip with discharge valve failure to auto close

JPM Number: CR h

Revision Number: 00

Date: 11/17/2015

Developed By:	Robert Peterson Instructor	11/17/2015 Date
Validated By:	J. O'Keefe SME or Instructor	12/9/2015 Date
Approved By:	B. Lewin Operations Representative	12/9/2015 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.

RFP	1.	Task description and number, JPM description and number are identified.
RFP	2.	Knowledge and Abilities (K/A) references are included.
RFP	3.	Performance location specified. (in-plant, control room, simulator, or other)
RFP	4.	Initial setup conditions are identified.
RFP	5.	Initiating cue (and terminating cue if required) are properly identified.
RFP	6.	Task standards identified and verified by SME review.
RFP	7.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
RFP	8.	Verify the procedure(s) referenced by this JPM reflects the current revision: Procedure BOP CW-2 Rev: 14 Procedure BAR 1-17-A13 Rev: 5
RFP	9.	Verify cues both verbal and visual are free of conflict.
RFP	10.	Verify performance time is accurate
RFP	11.	If the JPM cannot be performed as written with proper responses, then revise the JPM.
RFP	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 Revised format to current standard

Comment	Resolution
New JPM	

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-18, 75% power or other compatible IC.
2. MRF ED075C OPEN
3. IOR ZLO1CW001A2 ON
4. TRGSET 8 “ZDI1CW001A(1)>0”
5. TRGSET 9 “ZDI1CW001A(1)>0”
6. TRG 8 MRF ED075C CLOSE
7. TRG 9 DOR ZLO1CW001A2
8. IMF CW01A (TO TRIP THE 1A CW Pump)

INITIAL CONDITIONS

1. You are the U-1 NSO.
2. The unit is in MODE 1.

INITIATING CUE

1. Respond to alarms on 1PM03J.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* **Denotes critical steps 2, 3 & 4.**

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 BAR 1-17-A13 when Annunciator 1-17-A13 alarms.	Locate and read BAR 1-17-A13.			
2*	Close 1CW001A with handswitch.	Place and HOLD control switch to CLOSE for 1CW001A until valve position 1ZI-CW084 or indicating lights indicates closed.			
CUE	**If examinee gets 1BOA Sec-3, inform them the Unit Supervisor will implement that procedure.**				
3*	Throttle 1CW001B in the Closed direction.	Close 1CW001B until 1B CW pump DP indicates 38 to 50 PSID on 1PDI-CW014.			
4*	Throttle 1CW001C in the Closed direction.	Close 1CW001C until 1C CW pump DP indicates 38 to 50 PSID on 1PDI-CW015.			
CUE	**This JPM is complete.**				

JPM Stop Time _____

JPM SUMMARY

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

JPM Title: CW Pump Trip with discharge valve failure to auto close

JPM Number: CR h Revision Number: 00

Task Number and Title: R-OA-023 Respond to a loss of Main Circulating Water

K/A Number and Importance: 075A2.02 Imp Factor 2.5/2.7

Suggested Testing Environment: Simulator

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

Reference(s):

- BAR 1-17-A13, Rev 5

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 U-1 NSO.
2. The unit is in MODE 1.

INITIATING CUE

1. Respond to alarms on 1PM03J.