Exelon Nuclear

Job Performance Measure

Letdown Orifice Operation

JPM Number: CRa (N-63)

Revision Number: 10

Date: 1/24/2013

Revised By:	Robert Peterson Instructor	3/18/2014 Date
Validated By:	Pat Comerford Operations Dept.	4/7/2014 Date
Approved By:	Brian Lewin Operations Representative	4/7/2014 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 BOP CV-9 Rev: 08
   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 (Signature on file)	1/24/13
SME / Instructor	Date
Robert F. Peterson	3/18/2014
SME / Instructor	Date

Revision Record (Summary)

Revision 10

- 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.
- Created from JPM No. N-63

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-100 (from IC-18, 75% power) (password nrc14)

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. Line up letdown via BOP CV-9 so that 75 gpm is established. (In IC-100)
3. Turn on a set of Pzr BU heaters. (In IC-100)
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. Letdown flow is currently 75 gpm

INITIATING CUE

1. You have been directed to raise letdown flow to 120 gallons per minute and then restore systems to automatic in accordance with BOP CV-9, “Letdown Orifice Isolation”, step 2.
2. Inform the US when complete.
3. Another NSO will respond to ALL other Control Room annunciators and conditions.

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

Information For Evaluator’s Use:

Task Standard: <u>PERFORM lineups of the CVCS</u>

UNSAT requires written comments on respective step.

* Denotes critical steps: 3, 5 & 6

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
1. Refer to BOP CV-9, Letdown Orifice Operation **Cue: All prerequisites are met**	o OPEN BOP CV-9, step F.2	____	____	____
NOTE **Provide the examinee with a copy of the BOP CV-9** The evaluator may judge the candidate by correctly performing the critical steps, and the candidates' competency by NOT receiving the following alarms: • 1-9-B1 LP LTDWN REL TEMP HIGH • 1-9-A1 REGEN HX LTDWN TEMP HIGH • 1-9-E2 LTDWN TEMP HIGH • 1-9-D3 CHG LINE FLOW HI LOW • 1-7-B2 RCP SEAL WTR INJ FLOW LOW				
2. Adjust 1CV121 in MANUAL to compensate for additional letdown flow	At 1PM05J: 1) Place 1CV121 in Manual 2) Raise charging flow to about 132 gpm using the raise pushbutton as indicated on 1FI-121A	____	____	____
*3. Place 1PCV-CV131 to manual and lower letdown pressure to ~180 psig.	At 1PM05J: • PLACE 1CV131 in MANUAL AND • LOWER letdown pressure to ~180 psig by raising output on 1PK-131	____	____	____
NOTE **The examinee may decide that step 4 is NOT required and go to step 5.**				

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
4. If required, ADJUST 1CC130A/B, as necessary	At 1PM05J: ○ Place 1TK-130 in MANUAL AND ○ RAISE Output	____	____	____
*5. Raise letdown flow from 75 gpm to 120 gpm letdown ***NOTE to Evaluator:*** Evaluate the alarms that annunciate to determine competency of manual operations of controls in previous 3 steps	At 1PM05J: • SIMULTANEOUSLY OPEN 1CV8149A AND • SIMULTANEOUSLY ADJUST PCV-1CV131 to maintain pressure ~370 psig	____	____	____
*6. Restore 1PCV-CV131 to AUTO	At 1PM05J: • PLACE 1CV131 in AUTO	____	____	____
NOTE **If examinee manipulated 1CC130A/B in manual to control letdown temperature perform step 7. If the valve was not manipulated and temperature is normal, step 7 may be bypassed.**				
7. Ensure 1CC130A/B is maintaining normal letdown temperature of about120 °F.	At 1PM05J: ° Check letdown temp. normal on 1TI-130 • Place 1TK-130 in AUTO	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
8. Adjust 1CV121, in manual to match charging and letdown flow while establishing PZR at program level. ***Cue: This JPM is completed.***	At 1PM05J: ○ Adjust 1CV121 in Manual ○ Verify charging flow is about 12 gpm greater than letdown flow and PZR level is trending to program. • Place 1FK-121 in AUTO ○ Informs US that 120 gpm letdown flow is in service (and system is restored to automatic).	____	____	____

RECORD STOP TIME: _____

JPM SUMMARY

Operator's Name: _____ **Job Title**: ☐ RO ☐SRO

JPM Title: Letdown Orifice Operation

JPM Number: CRa (N-63) Revision Number: 00

Task Number and Title: 4C.CV-01 PERFORM lineups of the CVCS

K/A Number and Importance: 004A4.06 3.6/3.1

Ability to manually operator and/or monitor in the control room: Letdown isolation and flow control valves

Suggested Testing Environment: Simulator

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

Reference(s):

BOP CV-9 Rev. 8 Letdown Orifice Operation

CRITICAL STEPS (*) 3, 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: _____

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Evaluator's Name: _____ (Print)

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

INITIAL CONDITIONS

1. You are the Unit 1 NSO.
2. Letdown flow is currently 75 gpm.

INITIATING CUE

1. You have been directed to raise letdown flow to 120 gallons per minute and then restore systems to automatic in accordance with BOP CV-9, “Letdown Orifice Isolation”, step 2.
2. Inform the US when complete.
3. Another NSO will respond to ALL other Control Room annunciators and conditions.

Exelon Nuclear

Job Performance Measure

Raise SI Accumulator Pressure (1SI8875B fails to close)

JPM Number: CRb (N-3a)

Revision Number: 3

Date: 9/22/2009

Revised By:	Lynn Sanders *	9/22/09
	Instructor	Date
Validated By:	Pat Comerford	4/7/2014
	Operations Dept.	Date
Approved By:	Brian Lewin	4/7/2014
	Operations Representative	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 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:

Lynn Sanders / Brian Clark 9/24/09
SME / Instructor Date

Robert F. Peterson 3/18/2014
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-101 (from IC-11) (password nrc14)

> 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. (In IC-101)

   (NOTE: if using a caep, the quotation marks must be straight (plain text) quotes, not “curly quotes” like Word uses.)

   a) trgset 3 "ZLO1SI8875B(2).gt.0"

   b) trg 3 “ior ZDI1SI8875B open”

   c) irf nt78 on

3) Put TR 57 on screen 2.

4) **During performance of this JPM, standby to MRF NT78 OFF at Evaluator’s direction if required.**

5) 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

6) 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, Accumulators LCOAR, has been initiated.
6. Annunciator 1-5-B2, ACCUM 1B PRESS HIGH LOW, is LIT.

INITIATING CUE

The Unit Supervisor directs you to restore the 1B SI Accumulator pressure to within the Technical Specification limits.

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

Information For Evaluator's Use:

Task Standard: ADJUST SI accumulator pressure.

UNSAT requires written comments on respective step.

* Denotes critical steps: 2, 4, 6 & 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.

RECORD START TIME: _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1. Refer to BOP SI-8, Increasing SI Accumulator Pressure ***Cue: All prerequisites have been met*** ***Cue: (if asked) There are no personnel in CNMT***	° LOCATE and OPEN BOP SI-8	____	____	____
*2. Align nitrogen tube trailer ***Cue: EO reports the Nitrogen Tube Trailer Manifold Discharge Valve is OPEN*** ***Cue: EO reports 0NT078 is OPEN***	DIRECT EO to OPEN: • Nitrogen Tube Trailer Manifold Discharge Valve • 0NT078	____	____	____
Evaluator's Note: **The following steps are located at 1PM06J.**				
3. VERIFY/CLOSE 1SI943, Accumulator vent control valve ***Cue: 1SI943 POT is set at 0.0***	° VERIFY/CLOSE 1SI943	____	____	____
*4. OPEN 1SI8880, Nitrogen supply isolation valve	• OPEN 1SI8880	____	____	____
5. Initiate 1BOL 5.1 ***Cue: 1BOL 5.1 has been initiated***	° INITIATE 1BOL 5.1	____	____	____
*6. OPEN 1SI8875B, 1B Accumulator Vent valve	Start raising accumulator pressure: • OPEN 1SI8875B	____	____	____
7. Monitor pressure increase	° Monitor pressure using 1PI-962 & 963	____	____	____
Evaluator's Note: **Alternate path is initiated in the following step.**				

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
8. CLOSE 1SI8875B, 1B Accumulator Vent valve when accumulator pressure is between 602 and 647 psig. ***Cue: Unit Supervisor acknowledges that 1SI8875B has failed to close***	Stop raising accumulator pressure o Attempt to CLOSE 1SI8875B when accumulator pressure is between 602 and 647 psig o Inform US of 1SI8875B failure to close			
Evaluator's Note: **1BOL 5.1 is not exited because 1CV8875B is open.** **IF the candidate instructs the EO to close 0NT078 to stop the pressure rise (ie, before they close 1SI8880), direct the Booth Operator to: MRF NT78 OFF.**				
*9. CLOSE a nitrogen supply isolation valve **Evaluator Note:** Closing <u>either</u> of these valves satisfies the critical task. It is expected the operator will close both.	• Close valve(s) to stop pressure rise o 1SI8880 on 1PM06J o 0NT078 at tube trailer by EO			
10. Isolate nitrogen tube trailer *(if not already done)* ***Cue: EO reports 0NT078 is CLOSED*** ***Cue: EO reports the Nitrogen Tube Trailer Manifold Discharge Valve is CLOSED***	DIRECT EO to CLOSE: • 0NT078 • Nitrogen Tube Trailer Manifold Discharge Valve			
Evaluator's Note: **IF Alarm 1-5-B2 reflashes due to high accumulator pressure (>647 #), and candidate asks for direction, CUE:** ***The Unit Supervisor directs you to maintain accumulator pressure within Tech Spec limits.***				

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
Contingency step ONLY if Alarm 1-5-B2 is present and 1B Accumulator pressure is >647#, otherwise N/A. 11. OPEN 1SI943, Accumulator vent control valve until Alarm 1-5-B5 clears, then reclose 1SI943. ***Cue: This JPM is completed***	• Alarm 1-5-B5 is NOT LIT.			

RECORD STOP TIME: _____

JPM SUMMARY

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

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

JPM Number: CRb (N-3a) Revision Number: 3

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

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

Ability to manually operate and/or monitor in the control room: valves.

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 (*) 2, 4, 6 & 9

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, Accumulators LCOAR, has been initiated.
6. Annunciator 1-5-B2, ACCUM 1B PRESS HIGH LOW, is LIT.

INITIATING CUE

The Unit Supervisor directs you to restore the 1B SI Accumulator pressure to within the Technical Specification limits.

Exelon Nuclear

Job Performance Measure

Synchronize DG to Bus (Will Not Load)

JPM Number: CRc (N-19a)

Revision Number: 00

Date: 1/24/2013

Revised By:	Bill Hochstetter Instructor	1/24/13 Date
Validated By:	Pat Comerford Operations Dept.	4/7/2014 Date
Approved By:	Brian Lewin Operations Representative	4/7/2014 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.

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 DG-11 Rev: 25
   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:

Robert F. Peterson 3/18/2014
SME / Instructor Date

_____ _____
SME / Instructor Date

Revision Record (Summary)

Revision 0

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-100 (from IC-18, 75% power) (password nrc14)

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. Override DG governor speed adjuster by: (In IC-100)
   - trgset 3 “zlo1hsdg026(3)>0”
   - Set trg 3 to neutral position (between Raise and Lower) of dialog box for “zdi1hsdg019”
3. Start 1A DG for loading per BOP DG-11, step F.1. (In IC-100)
   - Clear the local trouble alarm by MRF EG06 RESET.
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 an extra NSO.

2. The unit's ESF busses are being supplied by the SATs.

3. The 1A Diesel Generator has been running unloaded for approximately fifteen minutes after a manual start.

4. Jacket water and lube oil temperatures are acceptable for loading the diesel generator.

5. BOP DG-11 steps F.1 through F.4 have been completed as indicated.

INITIATING CUE:

The Unit Supervisor directs you to parallel and load the 1A Diesel Generator to 5400 KW per step F.5 of BOP DG-11, “Diesel Generator Startup”.

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

Information For Evaluator’s Use:

Task Standard: <u>Load The Diesel Generator</u>

UNSAT requires written comments on respective step.

* Denotes critical steps: 6, 7, 8, 9, & 11

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
1. Refer to BOP DG-11, Diesel Generator Startup ***Cue: All prerequisites have been met*** ***Cue: (If asked) The 1A DG was started per step F.1*** ***Cue: (If asked) The 1A DG was started fifteen minutes ago*** **Note: Provide the examinee a copy of BOP DG-11 and BOP DG-11T1.**	• LOCATE and OPEN BOP DG-11, step F.5	____	____	____
2. Notify Electric Operations of pending diesel generator parallel operation, estimated run time, and loading ***Cue: Electric Operations has been informed***	Notify Electric Operations	____	____	____
3. Auto Re-close Circuit Arm Selector Switch	At 1PM01J: • PLACE Auto Re-close Circuit Arm Selector Switch to SURV TEST	____	____	____
4. Verify DG operating properly	At 1PM01J, CHECK: • DG frequency • DG voltage	____	____	____
5. Verify the same voltage across each phase.	At 1PM01J, CHECK: • DG phase voltages	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*6. Turn on the 1A DG Feed to 141 Sync Selector switch.	At 1PM01J: • TURN Sync Selector switch for DG 1A Feed to 4KV Bus 141 to ON	____	____	____
*7. Adjust the incoming voltage.	At 1PM01J: • ADJUST incoming voltage SLIGHTLY HIGHER than running voltage using DG 1A Volt Adj control	____	____	____
*8. Adjust 1A DG speed.	At 1PM01J: • Adjust speed so synchroscope rotates SLOWLY in FAST DIRECTION using DG 1A Gov Adj control	____	____	____
*9. Synchronize the DG ***Cue: (If requested) NLO is locally monitoring temperatures per notes in BOP***	At 1PM01J: • PLACE control switch for ACB 1413 to CLOSE when synchroscope is slightly before 12 o'clock	____	____	____
10. Verify the synchroscope is locked in.	At 1PM01J: • VERIFY synchroscope "locks in" at 12 o'clock	____	____	____
*11. Immediately load the 1A DG to 1000 KW. **Note: The governor adjust switch is failed such that the diesel generator will NOT load.**	At 1PM01J: • IMMEDIATELY load DG to 1000 KW by going to RAISE on Gov Adj Control • OPEN output breaker (Based on NOTE prior to step that closes 1413)	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
12. Notify the US of the unsuccessful loading of the diesel ***Cue: The Unit Supervisor acknowledges the failure and will initiate an WR for maintenance to investigate.*** ***Cue: This JPM is completed.***	○ NOTIFY Unit Supervisor of the unsuccessful loading of the diesel	____	____	____

RECORD STOP TIME: _____

JPM SUMMARY

Operator's Name: _____ **Job Title**: ☐ RO ☐ SRO

JPM Title: Synchronize D/G to Bus (Will Not load)

JPM Number: CR-c (N-63) Revision Number: 00

Task Number and Title: 4C.DG-02 Load The Diesel Generator

K/A Number and Importance: 064A2.09 3.1/3.3

Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Synchronization of the ED/G with other electric power supplies.

Suggested Testing Environment: Simulator

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

Reference(s): BOP DG-11 Rev. 25

CRITICAL STEPS (*) 6, 7, 8, 9, & 11

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 an extra NSO.

2. The unit's ESF busses are being supplied by the SATs.

3. The 1A Diesel Generator has been running unloaded for approximately fifteen minutes after a manual start.

4. Jacket water and lube oil temperatures are acceptable for loading the diesel generator.

5. BOP DG-11 steps F.1 through F.4 have been completed as indicated.

INITIATING CUE:

The Unit Supervisor directs you to parallel and load the 1A Diesel Generator to 5400 KW per step F.5 of BOP DG-1111, “Diesel Generator Startup”.

Exelon Nuclear

Job Performance Measure

Turbine Driven Feedwater Pump Swap
(High Vibration)

JPM Number: CRd (N-80a)

Revision Number: 00

Date: 3/18/2014

Revised By:	Robert Peterson Instructor	3/18/2014 Date
Validated By:	Pat Comerford Operations Dept.	4/7/2014 Date
Approved By:	Brian Lewin Operations Representative	4/7/2014 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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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 FW-1 Rev: 18
   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:

Robert F. Peterson 3/18/2014

SME / Instructor Date

Revision Record (Summary)

Revision 0

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-100 (from IC-18, 75% power) (password nrc14)

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. Ensure MW OUT is selected.

3. Start the 4th CD/CB pump and 1A MFP. Take 1C MFP off line and reset trip when it has stopped. Open 1FW0012C recirc valve. (In IC-100)

4. Set up triggers for alarms and action as shown: (In IC-100)

   TRGSET 7 "zao1sifwtsc.gt.0.22" (TRUE when speed is greater than 1430 RPM)
   TRGSET 8 "zao1sifwtsc.gt.0.22"
   TRGSET 9 "zao1sifwtsc.gt.0.22"
   TRGSET 10 "zao1sifwtsc.gt.0.22"
   TRG 7: IMF PN1164 ON (1C TDFP High Vibration alarm)
   TRG 8: SET YCY2903_1O=1 (Allows PPC parameter to be set)
   TRG 9: SET YCY2903_1V=8 (PPC shows 8 MILS vibration on 1C TDFP Brg 2)
   TRG 10: IMF FW02B 300 (Trips the 1C TDFP after 5 minutes)

5. 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.

6. This completes the setup for this JPM.

INITIAL CONDITIONS

1. You are the Unit NSO.
2. The unit is at 75% power.
3. 1A and 1B FW pumps are online.
4. The 4th CD/CD pump was started in preparation for this pumps swap.
5. The 1C FW pump is NOT running.

INITIATING CUES

1. The US directs you to place the 1C FW pump on line and take 1A FW pump off line.
2. BOP FW-1, "STARTUP AND SWAPPING OF TURBINE DRIVEN FW PUMPS", has been completed through step 3.e, inclusive, of the main body. The trip test and reset of steps 3.d and 3.e were completed successfully.

Information For Evaluator's Use:

Task Standard: <u>Startup/shutdown a Main Feedwater Pump at Power</u>

UNSAT requires written comments on respective step.

* Denotes critical steps: 2, 3, 5 & 7

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 The examinee may want to trend bearing temperatures on the computer per the limitations and actions section of the procedure. TR-34 is snapped into NSO screen 1 on the desk, facing 1PM07J.				
1. Refer to BOP FW-1, Startup and Swapping of a Turbine Driven Main Feedwater Pump **Provide copy of BOP FW-1 placekept through step F.3.e.** **Cue:** ***All Prerequisites have been met***	OPEN BOP FW-1, step F.3.f.	____	____	____
***2**. Open LP stop valve	At 1PM04J: • DEPRESS and HOLD LP stop valve open pushbutton until backlit	____	____	____
***3**. Open HP stop valve	At 1PM04J: • DEPRESS and HOLD HP stop valve open pushbutton until backlit	____	____	____
4. Ensure manual speed control	At 1PM04J: • ENSURE speed setter control indicating light is lit	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***5**. Increase speed and maintain for at least 15 minutes.	At 1PM04J: • DEPRESS increase speed pushbutton to bring turbine to between 1500 and 2000 RPM. • HOLD speed for at least 15 minutes for warmup.	____	____	____
NOTE: This begins the Alternate Path. **Booth operator:** After reaching 1500 RPM), **Ensure Triggers insert 7, 8, 9 & 10 in order listed.** (Triggers are in IC-100) **TRG 7: IMF PN1164 ON** (1C TDFP High Vibration) **TRG 8: SET YCY2903_1O=1** (Allows next parameter to be set) **TRG 9: SET YCY2903_1V=8** (PPC shows 8 MILS vibration on 1C TDFP Brg 2) **TRG 10: IMF FW02B 300** (Trips 1C TDFP after 5 minutes)				
6. Respond to alarm **FW PUMP TURB VIB** (1-16-A4) ***Cue: Unit 2 Assist NSO reports 1VT-FW040 on 1PM12J: 1C TDFP #2 bearing vibration reads 8 MILs*** ***Cue: EO reports 1C TDFP is vibrating badly***	At 1PM12J, CHECK: • BAR 1-16-A4 • FW pump 1C vibration (1VT-FW040 is not modeled on the simulator) o Contact EO at 1C TDFP for vibration report	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***7.** Trip 1C TDFP	Limitation E.2: Immediately trip FW pump 1C if excessive vibration of 5 MILS is detected. At 1PM04J: • **PRESS Turbine Trip Pushbutton** ○ Verify Turbine Trip Alarm and backlight ILLUMINATE.	____	____	____
Evaluator Note: If Candidate does NOT trip the 1C TDFP within 5 minutes of receiving the report of high vibration, **MF FW02B** will automatically insert to trip the 1C TDFP. In the event the TDFP automatically trips because the candidate failed to take action, Critical Step #7 was not met. ***Cue: EO reports he tripped the 1C TDFP locally because of high vibration.***				
Cue: ***This JPM is completed***				

RECORD STOP TIME: _____

JPM SUMMARY

Operator's Name: _____ **Job Title**: ☐ RO ☐SRO

JPM Title: Swap a Turbine Driven Feedwater Pump (High Vibration)
JPM Number: CRd (N-80a) Revision Number: 00
Task Number and Title: 4C.FW-06 Startup/shutdown a Main Feedwater Pump at Power
K/A Number and Importance: 059A2.07 3.0/3.3
Ability to (a) predict the impacts of the following malfunctions or operations on the MFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Tripping of MFW pump turbine
Suggested Testing Environment: Simulator
Alternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s): 1BOP FW-1, Rev 18; BAR 1-16-A4
CRITICAL STEPS (*) 2, 3, 5 & 7
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 NSO.
2. The unit is at 75% power.
3. 1A and 1B FW pumps are online.
4. The 4th CD/CD pump was started in preparation for this pumps swap.
5. The 1C FW pump is NOT running.

INITIATING CUES

1. The US directs you to place the 1C FW pump on line and take 1A FW pump off line.
2. BOP FW-1, “STARTUP AND SWAPPING OF TURBINE DRIVEN FW PUMPS”, has been completed through step 3.e, inclusive, of the main body. The trip test and reset of steps 3.d and 3.e were completed successfully.

Exelon Nuclear

Job Performance Measure

Transfer Pressurizer Pressure Control to Automatic

JPM Number: CRe

Revision Number: 00

Date: 5/1/2014

Revised By:	Robert Peterson Instructor	5/1/2014 Date
Validated By:	Brian Lewin Operations Dept.	5/4/2014 Date
Approved By:	Brian Lewin Operations Representative	5/4/2014 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.

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: 56
   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:

Robert F. Peterson 5/1/2014

SME / Instructor Date

Revision Record (Summary)

Revision 0

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-101 (from IC-11) (password nrc14)

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

2. Verify/place all Pzr Backup Heaters are in AUTO and Variable Heater control switch is in AFTER CLOSE.

3. When RCS pressure is stable, place 1PK-455A, B & C in MANUAL.

4. Turn the pot for 1PK-455A to 3.5 (actual number not important, just significantly lower than 6.688).

5. Turn the pots for 1PK-455B & C to 4.5 (actual number not important, just significantly higher than 0).

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 1 Assist NSO.

2. Unit 1 is in 1BGP 100-1, Plant Heatup following a refueling outage.

3. RCS pressure is stable with pressure control in MANUAL.

INITIATING CUES

The Unit Supervisor has directed you to perform 1BGP 100-1, Step 67, Place Pressurizer Pressure Control in Automatic.

Information For Evaluator's Use:

Task Standard: CONTROL Pressurizer Pressure in Master Manual Mode (and switch to automatic control)

UNSAT requires written comments on respective step.

* Denotes critical steps: 3, 4 & 6

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
1. Refer to 1BGP 100-1, Step 67. **Note: Provide the examinee a copy of 1BGP 100-1, Step 67.**	OPENS 1BGP 100-1, Step 67.	____	____	____
2. Refer to 1BGP 100-1A1 for 1PK-455A potentiometer setting.	Refers to 1BGP 100-1A1 for pot setting of 6.688.	____	____	____
*3. Adjust 1PK-455A potentiometer to 6.688.	Adjusts 1PK-455A pot to 6.688 (acceptable range: 6.6-6.8).	____	____	____
*4. Place 1PK-455A in AUTO.	Places controller 1PK-455A in AUTO.	____	____	____
5. Set 1PK-455B and 1PK-455C potentiometers to 0.	Sets both1PK-455B and 1PK-455C pots to 0.	____	____	____
*6. Place 1PK-455B and 455C in AUTO.	Places controllers 1PK-455B and 455C in AUTO.	____	____	____
7. Place at least 2 Backup Heaters to ON.	Turns on at least 2 Backup heaters.	____	____	____
8. Verify/place the Variable Heater Control Switch to AFTER CLOSE position.	Verifies the Variable Heater Control Switch is in AFTER CLOSE.	____	____	____
9. Adjusts 1PK-455A potentiometer with controller in AUTO or MANUAL to maintain 2235 PSIG.	Monitors RCS or Pzr Pressure and verifies spray valves respond and pressure is trending to 2235 PSIG.	____	____	____

Cue (when pressure is trending towards being stabilized): This JPM is completed.

RECORD STOP TIME: _____

JPM SUMMARY

Operator's Name: _____ **Job Title**: ☐ RO ☐SRO

JPM Title: Transfer Pressurizer Pressure Control to Automatic

JPM Number: CRe Revision Number: 00

Task Number and Title: 4D.RY-02 CONTROL Pressurizer Pressure in Master Manual Mode (Pressure Controller in manual)

K/A Number and Importance: 010A3.02 3.6/3.5

Ability to monitor automatic operation of the PZR PCS, including: PZR pressure.

Suggested Testing Environment: Simulator

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

Reference(s): 1BGP 100-1, Rev 56

CRITICAL STEPS (*) 3, 4 & 6

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 1BGP 100-1, Plant Heatup following a refueling outage.

3. RCS pressure is stable with pressure control in MANUAL.

INITIATING CUES

The Unit Supervisor has directed you to perform 1BGP 100-1, Step 67, Place Pressurizer Pressure Control in Automatic.

Exelon Nuclear

Job Performance Measure

SX Flooding Requiring RCFC Isolation
(Running Train Leak)

JPM Number: CRf

Revision Number: 0

Date: 3/18/2014

Revised By:	Robert Peterson Instructor	3/18/2014 Date
Validated By:	Pat Comerford Operations Dept.	4/7/2014 Date
Approved By:	Brian Lewin Operations Representative	4/7/2014 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.

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 PRI-7 Rev: 106
   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:

Robert F. Peterson — 3/18/2014
SME / Instructor — Date

Revision Record (Summary)

Revision 0

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-100 (from IC-18, 75% power) (password nrc14)

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. Insert MF SW02A at 10 GPM. (In IC-100)

3. Acknowledge CNMT DRAIN LEAK DETECT FLOW HIGH alarm (1-1-A2). (In IC-100)

4. IMF PN1423 OFF and PN1427 OFF to prevent nuisance alarms from the effects of this realignment on the 1A CNMT chiller.

5. 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.

6. This completes the setup for this JPM.

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.

2. Unit 1 is experiencing a loss of Essential Service Water.

3. Cnmt Floor Drain Sump (1FT-RF008) indicates ~1.2 GPM flow.

INITIATING CUES

1. The Unit Supervisor has directed you to perform the actions necessary to isolate the leak per 1BOA PRI-7, Essential Service Water Malfunction, step 5.d.

Information For Evaluator's Use:

Task Standard: RESPOND to Essential Service Water malfunction

UNSAT requires written comments on respective step.

* Denotes critical steps: 6, 7 & 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.

RECORD START TIME_____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1. Refer to 1BOA PRI-7, step 5.d, Essential Service Water Malfunction **Note: Provide the examinee a copy of 1BOA PRI-7.**	LOCATE and OPEN 1BOA PRI-7, step 5.d	____	____	____
2. Shutdown the NON-running SX pump's train RCFCs.	Train 1B: • Stop 1B RCFC o Stop 1D RCFC	____	____	____
3. Close the associated RCFC train isolation valves.	Train 1B: • Close 1SX016B • Close 1SX027B	____	____	____
4. Check if the leak has stopped.	Leak has not stopped - CNMT sump recorders are still trending up.	____	____	____
5. Open the associated RCFC train isolation valves.	Train 1B • Open 1SX016B • Open 1SX027B	____	____	____
EVALUATOR: The operator MAY start the NON-running SX pump's train RCFCs 1B and 1D in High Speed.				
BOOTH OPERATOR: Candidate may elect to have the EO start the Aux Lube Oil Pump(s) for either or both SX pumps. The RFs are: • MRF SW03 ON for 1A SX pump • MRF SW04 ON for 1B SX pump				

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*6. Start the NON-running SX Pump and stop the running SX Pump.	• Start 1B SX Pump • Stop 1A SX Pump	____	____	____
EVALUATOR: The next realignment will cause the 1A CNMT chiller to trip on high condenser pressure after a few minutes. The alarms are overridden OFF to prevent a distraction. If the candidate addresses the need to realign the CNMT chiller or goes to check on the chiller status, provide the cue. ***CUE: An extra NSO will be assigned to realign the CNMT Chiller. Continue the assigned task.***				
*7. Shutdown the NON-running SX pump's train RCFCs.	Train 1A: • Stop 1A RCFC • Stop 1C RCFC	____	____	____
*8. Close the associated RCFC train isolation valves.	Train 1A: • Close 1SX016A • Close 1SX027A	____	____	____
9. Check if the leak has stopped.	Leak has stopped - CNMT sump recorders stop trending up.	____	____	____
10. Inform the US that leak is isolated. ***Cue: This JPM is completed.***	Inform US that SX leak has stopped and one train of RCFC has been isolated.	____	____	____

RECORD STOP TIME: _____

JPM SUMMARY

Operator's Name: _____ **Job Title**: ☐ RO ☐SRO

JPM Title: SX Flooding Requiring RCFC Isolation (Running Train Leak)
JPM Number: CRf Revision Number: 00
Task Number and Title: 4D.OA-69 RESPOND to Essential Service Water malfunction
K/A Number and Importance: 022A2.05 3.1/3.5
Ability to (a) predict the impacts of the following malfunctions or operations on the CCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Major leak in CCS.
Suggested Testing Environment: Simulator
Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s): 1BOA PRI-7 Rev 106
CRITICAL STEPS (*) 6, 7 & 8
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. Unit 1 is experiencing a loss of Essential Service Water.
3. Cnmt Floor Drain Sump (1FT-RF008) indicates ~1.2 GPM flow.

INITIATING CUES

1. The Unit Supervisor has directed you to perform the actions necessary to isolate the leak per 1BOA PRI-7, Essential Service Water Malfunction, step 5.d.

Exelon Nuclear

Job Performance Measure

Containment Release
(With Rad Alarm)

JPM Number: CRg

Revision Number: 02

Date: 3/18/2014

Revised By:	Robert Peterson Instructor	3/18/2014 Date
Validated By:	Pat Comerford Operations Dept.	4/7/2014 Date
Approved By:	Brian Lewin Operations Representative	4/7/2014 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.

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 VQ-6 Rev: 7
   Procedure BCP 400 TCNMT/ROUTINE Rev: 23
   Procedure BAR RM11-4-1AR12J Rev: 10
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:

Robert F. Peterson 3/18/2014

SME / Instructor Date

Revision Record (Summary)

Revision 2

Converted to current format and verified procedure steps. 3/18/2014 RFP

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-101 (from IC-11) (password nrc14)

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. Insert overrides and MF so CNMT pressure indicates 0.9 PSIG (in IC-101) SMDG CH6
   - IMF PN1259 ON *(CNMT Internal press HIGH alarm ON)*
   - IOR ZAO1PDIVP231 0.9 *(CNMT pressure indicated at 0.9#)*
   - IOR ZAO1PDIVP236 0.9
   - IOR ZAO1PIPC004 0.9
   - IOR ZAO1PIPC005 0.9
   - imf ch08a 0.9
   - imf ch08b 0.9
   - imf ch08c 0.9
   - imf ch08d 0.9
3. IMF RM05O to prevent automatic CNMT Vent Isolation actuation. (in IC-101)
4. Trgset 12 "zlo1vq05c(2).gt.0" to set trigger for rad monitor alarm when 1VQ05C is opened.
5. IMF RM01AP (12 10) 1.8 to cause 1AR12J to alarm 10 seconds after 1VQ05C is opened.
6. Place the “UNIT 1 CNMT GASEOUS RELEASE” placard on 0PM02J above the VQ valves.
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 Unit 1 Containment Vent Release Package is approved for release.

INITIATING CUES

The Unit Supervisor has directed you to perform a normal release without a purge fan, using BOP VQ-6, Containment Mini-Purge System Operation to vent Unit 1 Containment in accordance with step 6 of BCP 400-TCNMT/ROUTINE, Gaseous Effluent Release Form, Routine Containment Release. All containment release paperwork has been verified acceptable up to step 6.

Information For Evaluator's Use:

Task Standard: PERFORM Containment Vent

UNSAT requires written comments on respective step.

* Denotes critical steps: 5 & 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.

RECORD START TIME_____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE Provide the candidate with a copy of BCP 400-TCNMT/ROUTINE, Gaseous Effluent Release Form, Routine Containment Release completed up to step 6 with approval for release.				
1. Refer to BOP VQ-6, Containment Mini-Purge System Operation. ***Cue: Provide copy of BOP VQ-6 when candidate locates procedure book.***	• LOCATE and OPEN BOP VQ-6	____	____	____
2. Review BOP VQ-6, steps prior to main body. ***Cue: All prerequisites are met.***	• Review Prerequisites, Precautions, and Limitations and Actions	____	____	____
NOTE: Steps 3 and 4 may be performed in any order.				
3. Enter data into release form	Record on release form: • Unit 1 • Actual time • 0.9 PSIG	____	____	____
4. Verify aux building ventilation	• 0B VA Exhaust Fan is in operation.	____	____	____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*5. Open CNMT Mini-Flow Purge Exhaust Isolation valves.	At 0PM02J: • 1VQ005A OPEN light is LIT • 1VQ005B OPEN light is LIT • 1VQ005C OPEN light is LIT			
EVALUATOR NOTE Ten seconds after the release is started, 1AR12J, Unit 1 CNMT Fuel Handling Incident Rad monitor, will HIGH ALARM at 63.1 mRem/hour. This normally would result in a CNMT Vent Isolation Signal that normally would close the B train valve 1VQ005B, but the isolation signal is not generated and the valve fails to automatically close.				
6. Record the time the valves were opened and release began on the Gaseous Effluent Release Form.	• Record the start time of the release on the Gaseous Effluent Release Form. ○ Log in unit log			
NOTE: The alternate path starts here when a containment vent isolation signal from 1AR12J fails to close 1VQ005B.				

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
7. Respond to RM-11 alarm. **NOTE: If the candidate does not respond to RM-11 alarm then:** ***Cue: The Unit Supervisor directs you to respond to the RM-11 alarm.*** ***Cue: Grid 4, monitor 1AR12J is flashing red*** **Provide BAR RM11-4-1AR12J if candidate indicates they desire to check the alarm response.** ***Cue: (If asked) Annunciator CNMT VENT ISOLATION (1-5-C7) is NOT LIT.***	• Respond to RM-11 alarm • Determine alarming rad monitor ○ Refer to BAR RM11-4-1AR12J and BOP AR/PR-11 series for immediate and subsequent operator actions. • Recognize monitor is in interlock state and B train VQ valve should have closed automatically, but did not.			
Note: Applicant can use BAR RM11-2-1PR01J, RM11-4-1AR12J, or BOP VQ-6 Limitations and Actions E.2 as guidance to secure the Cnmt Release.				
*8. Stop release as directed per BAR or BOP. ***Cue: (if asked) CNMT pressure is now .75 psi***	• At 0PM02J Close at least ONE of the following: ○ 1VQ005A ○ 1VQ005B ○ 1VQ005C ○ Record data on Release Form			

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
9. Inform Supervisor of Rad monitor 1AR12J status, failure of auto Cnmt Vent Isolation, and that release was manually terminated. ***Cue: The Unit Supervisor / Shift Manager acknowledges condition of 1AR12J, failure of CNMT Vent Isolation auto actuation, manual termination.*** ***Cue: This JPM is completed.***	Notify Unit Supervisor of release termination.	____	____	____

RECORD STOP TIME_____

JPM SUMMARY

Operator's Name: _____ **Job Title**: ☐ RO ☐SRO

JPM Title: Containment Release (With Rad Alarm)

JPM Number: CRg Revision Number: 02

Task Number and Title: 4C.VQ-01 PERFORM Containment Vent

K/A Number and Importance: 072A3.01 Imp Factor: 2.9/3.1

Ability to monitor automatic operation of the ARM system, including: Changes in ventilation alignment.

Suggested Testing Environment: Simulator

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

Reference(s): BOP VQ-6 Rev 7 & BCP 400-TCNMT/ROUTINE Rev 23 & BAR RM11-4-1AR12J, Containment Fuel Handling ICDT Rev 10

CRITICAL STEPS (*) 5 & 8

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. A Unit 1 Containment Vent Release Package is approved for release.

INITIATING CUES

The Unit Supervisor has directed you to perform a normal release without a purge fan, using BOP VQ-6, Containment Mini-Purge System Operation to vent Unit 1 Containment in accordance with step 6 of BCP 400-TCNMT/ROUTINE, Gaseous Effluent Release Form, Routine Containment Release. All containment release paperwork has been verified acceptable up to step 6.

Exelon Nuclear

Job Performance Measure

Start Hydrogen Monitoring System

JPM Number: CRh

Revision Number: 01

Date: 3/24/2014

Revised By:	Robert Peterson Instructor	3/24/2014 Date
Validated By:	Pat Comerford Operations Dept.	4/7/2014 Date
Approved By:	Brian Lewin Operations Representative	4/7/2014 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 BOP PS-9 Rev: 4
   Procedure 1BEP-1 Rev: 202
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:

Robert F. Peterson 3/24/2014
SME / Instructor Date

Revision Record (Summary)

Revision 1

Converted to current format and verified procedure steps. 3/24/2014 RFP

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC-101 (from IC-11) (password nrc14)

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

2. VERIFY/CLOSE 1PS228A, 1PS228B, 1PS229A, 1PS229B (In IC-101)
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 an extra NSO in the control room during a LOCA event.
2. The crew has performed the actions contained in 1BEP-0, Reactor Trip or Safety Injection and is currently in 1BEP-1, Loss of Reactor or Secondary Coolant.
3. Containment Isolation Phase A has just been reset.

INITIATING CUE

Place the Hydrogen Monitors in service per BOP PS-9, Post LOCA Containment Hydrogen Monitoring System Operation.

Information For Evaluator's Use:

Task Standard: Operate the Hydrogen Analyzer

UNSAT requires written comments on respective step.

* Denotes critical steps: 2, 3 & 6

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
1. Refer to BOP PS-9, Post-LOCA Containment Hydrogen Monitoring System Operation Note: Step 1 may be performed at any time ***Cue: All prerequisites are met***	Locate and OPEN BOP PS-9, Post LOCA Cnmt Hydrogen Monitoring System Operation			
***2**. Open the following valves on 1PM11J. • 1PS228A Pri Cnmt Isol to H_2 Monitor • 1PS230A Return Cnmt Isol from H_2 Monitor • 1PS228B Pri Cnmt Isol to H_2 Monitor • 1PS229A Sec Cnmt Isol to H_2 Monitor • 1PS229B Sec Cnmt Isol to H_2 Monitor • 1PS230B Return Cnmt Isol from H_2 Monitor	• OPEN 1PS228A on 1PM11J • OPEN 1PS230A on 1PM11J • OPEN 1PS228B on 1PM11J • OPEN 1PS229A on 1PM11J • OPEN 1PS229B on 1PM11J • OPEN 1PS230B on 1PM11J			
3.** Direct EO to locally open the following valves at 1PS47J & 1PS48J • 1PS232A Manual Inlet Isol to H_2 Monitor • 1PS233A Manual Outlet Isol from H_2 Monitor • 1PS232B Manual Inlet Isol to H_2 Monitor • 1PS233B Manual Outlet from H_2 Monitor ***Cue: EO reports that valves have been locally Opened	• 1PS232A locally OPENED • 1PS233A locally OPENED • 1PS232B locally OPENED • 1PS233B locally OPENED			

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
5. Direct EO to locally verify the ALARM SET / NORMAL switch is set to NORMAL on 1PS43J & 1PS44J ***Cue: EO reports that switch is in NORMAL***	ALARM SET / NORMAL switch is set to NORMAL	____	____	____
6**. Place the ON-OFF switch on 1HSU-PS345 & 1HSU-PS346 on 1PM12J to the ON position. ***Cue: Four minutes have elapsed.	ON-OFF switch on 1HSU-PS345 & 346 on 1PM12J are ON.	____	____	____
7. Verify the H_2 & System Status Alarm lights on 1HSU-PS345 & 1HSU-PS346 are NOT ON.	H_2 & System Status Alarm lights are NOT ON.	____	____	____
8. Verify on 1PM06J 1EL-PS343 & 1EL-PS344 LO RANGE lights are ON. ***Cue: This JPM is completed.***	LO RANGE lights are ON.	____	____	____

RECORD STOP TIME_____

JPM SUMMARY

Operator's Name: _____ **Job Title**: ☐ RO ☐SRO

JPM Title: Start Hydrogen Monitoring System

JPM Number: CRh Revision Number: 01

Task Number and Title: 4C.PS-01 Operate the Hydrogen Analyzer

K/A Number and Importance: 029A2.04 2.5/3.2

Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Purge System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Health physics sampling of containment atmosphere.

Suggested Testing Environment: Simulator

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

Reference(s): BOP PS-9, Post LOCA Containment Hydrogen Monitoring System Operation
1BEP-1, Loss of Reactor of Secondary Coolant

CRITICAL STEPS (*) 2, 3 & 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 an extra NSO in the control room during a LOCA event.
2. The crew has performed the actions contained in 1BEP-0, Reactor Trip or Safety Injection and is currently in 1BEP-1, Loss of Reactor or Secondary Coolant.
3. Containment Isolation Phase A has just been reset.

INITIATING CUE

Place the Hydrogen Monitors in service per BOP PS-9, Post LOCA Containment Hydrogen Monitoring System Operation.