Job Performance Measure

Perform an Emergency Boration

JPM Number: SIM-101

Revision Number: 2020 NRC

Date: 10/19/2019

Developed By:	Dan Burton /S/ Instructor	10/19/2019 Date
Validated By:	Dale Burchfield /S/ SME or Instructor	12/3/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/3/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/3/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BwOA PRI-2 Rev: 103

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revision.

Revision 2011, Verify latest procedure revision.

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

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

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

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

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

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

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

Revision 2020 NRC, This JPM is a LORT bank JPM (N-097d). Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template. Changed the initiating cue from MODE 3 to MODE 5 and changed the failure from an emergency boration flow meter failure & 1CV110B valve failure to a Boric Acid transfer pump trip.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-4 or equivalent IC, MODE 5 or use IC-0 that was written below.

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. Place simulator in RUN.
3. Verify/start 1A CV pump.
4. Verify 1B CV pump C/S in PULLOUT.
5. **IMF CV03** to trip the Boric Acid transfer pump.
6. Verify/perform the following:
   - Reset SER & remove excess paper from SER printer.
   - Reset/clear PPC.
   - Remove flags.
7. When the above steps are completed for this and other JPMs to be run concurrently, then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
8. This completes the setup for this JPM.
9. Take snapshot/write IC-0, if desired.
10. Reset the simulator between each examinee's JPMs.

JPM SUMMARY

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

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

JPM Title: **Perform an Emergency Boration**
JPM Number: **SIM-101** Revision Number: **2020 NRC**
Task Number and Title: **R-OA-033, Respond to Events Requiring Emergency Boration**
Task Standard: **Attempt to emergency borate using the Boric Acid transfer pump (will NOT start). Then emergency borate using the RWST as the suction source for the CV pump and establish maximum charging flow.**
K/A Number and Importance: **APE024 AA1.17 - 3.9 /3.9**
Suggested Testing Environment: **Simulator**
Alternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s):
1. 1BwOA PRI-2, Rev. 103, EMERGENCY BORATION

Materials:
1. 1BwOA PRI-2

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

Testing Method: ☐ Simulate ☒ Perform

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

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

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

Comments: _____

_____

_____

_____

_____

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is in MODE 5 with a bubble in the PZR.
3. The Shutdown Margin Surveillance has just failed with RCS Boron concentration 58 ppm below the required SDM boron concentration.

INITIATING CUE

1. The US has directed you to perform an Emergency Boration in accordance with 1BwOA PRI-2, EMERGENCY BORATION.
2. The US will determine the amount of the boration once the boration is established.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to 1BwOA PRI-2.	Locate and open 1BwOA PRI-2.	___	___	___
CUE	After examinee locates procedure, provide a copy. As SM, acknowledge request for SM evaluation of Emergency Plan conditions.				
2	Check at least 1 CV pump running.	Check 1A CV pump RUN light LIT.	___	___	___
3	Establish boration flow from the BAT.	• Open 1CV8104. - OR - • Open 1CV110A and 1CV110B.	___	___	___
4	Start Boric Acid (BA) transfer pump.	Take control switch for 1AB03P (Boric Acid transfer pump) to CLOSE (will NOT start).	___	___	___
CUE	As US, acknowledge the BA pump trip.				
NOTE	**Alternate Path Begins Here**				
***5**	**@ Align alternate boration flowpath from the RWST.**	Perform the following to align alternate boration flowpath from the RWST: *(Procedure Adherence)* ○ STOP the BA transfer pump (did NOT start). • **OPEN 1CV112D and/or 1CV112E.**	___	___	___
***6**	**Isolate suction from the VCT.**	Close at least one of the following VCT outlet valves: *(Procedure Adherence)* • **CLOSE 1CV112B and/or 1CV112C.**	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***7**	**Maximize letdown and charging flow.** **Add Flow Range**	Maximize letdown and charging flow by: *(Procedure Adherence)* ○ Maximize letdown flow (all valves already open, may fully open 1CV131). • **RAISE 1FK-0121 controller demand to maximize charging flow while maintaining charging flow indication (1FI-121A) on scale. (150 – 200 gpm*)**	___	___	___
8	Align CV pump discharge flowpath.	Perform the following to align CV pump discharge flowpath: • Check OPEN 1CV8105. • Check OPEN 1CV8106. • Check in-service charging to REGEN HX isol valve – OPEN (1CV8324A or B). • Check in-service charging to RC loop isol valve OPEN (1CV8146 or 1CV8147).	___	___	___
CUE	After Step is completed, as US, inform the examinee that another NSO will complete 1BwOA PRI-2. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is in MODE 5 with a bubble in the PZR.
3. The Shutdown Margin Surveillance has just failed with RCS Boron concentration 58 ppm below the required SDM boron concentration.

INITIATING CUE

1. The US has directed you to perform an Emergency Boration in accordance with 1BwOA PRI-2, EMERGENCY BORATION.
2. The US will determine the amount of the boration once the boration is established.

Exelon Generation

Job Performance Measure

Align Ventilation Systems for Emergency Operation

JPM Number: SIM-224

Revision Number: 2020 NRC

Date: 10/17/2019

Developed By:	Dan Burton /S/ Instructor	10/17/2019 Date
Validated By:	Frank Davito /S/ SME or Instructor	12/4/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/4/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/4/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BwEP-0 Rev: 304
Procedure BwOP VA-5 Rev: 24
Procedure BwOP VA-6 Rev: 18

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions

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

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

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

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

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

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

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

Revision 2019 NRC, This JPM was MODIFIED for ILT Class 2018-1 SRO NRC Exam. This JPM is an ILT bank JPM (SIM-222) that was modified to require the examinee to open the 0B VA plenum inlet damper (0C VA plenum inlet damper failed closed) prior to manually starting the 2nd Auxiliary Building Charcoal Booster Fan.

Revision 2020 NRC, This JPM is an ILT bank JPM (SIM-224). Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template. This JPM was randomly selected from 5 other Safety Function #2 bank JPMs. This JPM was last used on the ILT Class 18-1 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. Establish the conditions of IC-21, 100% power, equilibrium Xenon, BOL.

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. Place simulator in RUN.
3. Verify VA plenums 0A and 0C in-service, 0B VA plenum in standby (0VA085Y closed).
4. **IOR ZDI0VA086Y CLS** – to fail close the 0C VA plenum inlet damper (prevents 0C plenum fans from starting).
5. Verify/stop ALL 6 Auxiliary Building Charcoal Booster Fans (control switches in NAT) and BOTH Fuel Handling Building Charcoal Booster Fans (control switches in NAT).
6. Perform the following on 0PM02J:
   - **0A VC train** – start the chilled water pump & chiller; place charcoal absorber on-line.
   - **0B VC train** – start the M/U fan; place charcoal absorber on-line.
   - Stop ALL VA supply and exhaust fans (control switches in NAT).
   - Close 1SX112A/114A & 1SX112B/114B; leave each C/S in AUTO.
   - Close all 6 WO valves on 1PM06J to trip the 1A Cnmt chiller & chilled water pump.
7. Verify/perform the following:
   - Reset SER & remove excess paper from SER printer.
   - Reset/clear PPC.
   - Remove flags.
8. When the above steps are completed for this and other JPMs to be run concurrently, then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
9. This completes the setup for this JPM.
10. Take snapshot/write IC-0, if desired.
11. Reset the simulator between each examinee's JPMs.

JPM SUMMARY

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

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

JPM Title: **Align Ventilation Systems for Emergency Operation**
JPM Number: **SIM-224** Revision Number: **2020 NRC**
Task Number and Title: **R-EF-013, Actuate the Engineered Safety Features**
Task Standard: **Manually align 2 Auxiliary Building charcoal booster fans for emergency operation (plenum 0A and plenum 0B after opening plenum inlet damper). Manually align a Fuel Handling Building charcoal booster fan for emergency operation.**
K/A Number and Importance: **013 A4.01 - 4.5/4.8**
Suggested Testing Environment: **Simulator**
Alternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s):

1. 1BwEP-0, Rev. 304, REACTOR TRIP OR SAFETY INJECTION
2. BwOP VA-5, Rev. 24, AUX BUILDING CHARCOAL BOOSTER FAN OPERATION
3. BwOP VA-6, Rev. 18, FUEL HANDLING BUILDING CHARCOAL BOOSTER FAN OPERATION

Materials:

1. 1BwEP-0
2. BwOP VA-5
3. BwOP VA-6

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**: _____

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

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. An RCS LOCA is in progress on Unit 1.
3. 1BwEP-0, REACTOR TRIP OR SAFETY INJECTION, is in progress.

INITIATING CUE

1. The US has directed you to perform steps 6 & 7 of Attachment B of 1BwEP-0.
2. Another NSO will monitor the remainder of the Main Control Board panels and address alarms as necessary.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	**ELEMENT**	**STANDARD**	**SAT**	**UNSAT**	**Comment Number**
1	Refer to 1BwEP-0, Attachment B, steps 6 & 7.	Refer to 1BwEP-0, Attachment B, steps 6 & 7.	___	___	___
CUE	Provide a copy of 1BwEP-0, Attachment B, steps 6 & 7 to the examinee.				
NOTE	The examinee may elect to immediately start the Aux Building Charcoal Booster Fans rather than starting the fans per BwOP VA-5. OP-AA-101-111, ROLES AND RESPONSIBILITIES OF ON-SHIFT PERSONNEL, step 4.7.2, directs Reactor Operators to manually INITIATE safety system's automatic actions **when** operating parameters exceed the system's automatic initiation setpoints and automatic initiation does **not** occur. If the examinee elects to immediately start the Aux Building Charcoal Booster Fans, refer to JPM steps 2 & 3 and N/A JPM steps 4 - 6. If the examinee elects to start the Aux Building Charcoal Booster Fans per BwOP VA-5, refer to JPM steps 4 - 6 and N/A JPM steps 2 & 3.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number

*2	**Verify Aux Building Ventilation Aligned for Emergency Operation** (1BwEP-0, Attachment B, step 6).	Perform the following at 0PM02J (Plenum A): *(Procedure Adherence)*
		• **Start ONE fan in Plenum A as follows:**
		  • **START 0VA03CA.**
		  ○ Verify 0VA022Y OPEN (NOT FULLY CLOSED).
		  ○ Verify 0VA020Y CLOSED.
		- OR -
		  • **START 0VA03CB.**
		  ○ Verify 0VA023Y OPEN (NOT FULLY CLOSED).
		  ○ Verify 0VA436Y CLOSED.
			___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	The examinee may NOT attempt to start Plenum C fans if 0VA086Y is noted as failed closed.				
NOTE	**Alternate Path Begins Here**				

***3**	**@ Verify Aux Building Ventilation Aligned for Emergency Operation** (1BwEP-0, Attachment B, step 6).	Perform the following at 0PM02J (Plenums B/C): *(Procedure Adherence)*
		○ Attempt to start ONE fan in Plenum C (neither fan will start with 0VA086Y closed).
		○ Place 0VA086Y control switch in CLOSE.
		• **Open 0VA085Y.**
		• **Start ONE fan in Plenum B as follows:**
		  • **START 0VA03CC.**
		  ○ Verify 0VA024Y OPEN (NOT FULLY CLOSED).
		  ○ Verify 0VA021Y CLOSED.
		- OR -
		  • **START 0VA03CD.**
		  ○ Verify 0VA025Y OPEN (NOT FULLY CLOSED).
		  ○ Verify 0VA437Y CLOSED.
			___	___	___

CUE	If reported, US acknowledges that 0VA086Y has failed closed.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	**Alternate Path Begins Here**				

*4	**@ Verify Aux Building Ventilation Aligned for Emergency Operation** (BwOP VA-5).	Perform the following at 0PM02J (Plenums A/B/C): *(Procedure Adherence)*
		○ Verify no Aux Building Charcoal Booster Fans are running in selected plenums.
		○ Verify 0VA084Y open (YES) and 0VA086Y open (NO).
		• **Open 0VA085Y.**
		○ Note that 0VA086Y is closed with its control switch in open.
		○ Place 0VA086Y C/S in CLOSE.
		○ Verify following dampers closed for Plenum C:
		  ○ 0VA052YA/B.
		  ○ 0VA438YA/B.
		○ Verify damper interlock positions for fans to be started:
		  ○ Plenum A – 0VA03CA – 0VA023YA/B CLOSED.
		  ○ Plenum A – 0VA03CB – 0VA022YA/B CLOSED.
		  ○ Plenum B – 0VA03CC – 0VA025YA/B CLOSED.
		  ○ Plenum B – 0VA03CD – 0VA024YA/B CLOSED.
			___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	After examinee locates procedure, provide a copy. If reported, US acknowledges that 0VA086Y has failed closed.				
***5**	**Verify Aux Building Ventilation Aligned for Emergency Operation** (BwOP VA-5).	Perform the following at 0PM02J (Plenum A): *(Procedure Adherence)* ○ Verify Aux Building Charcoal Booster Fan transfer switch in REMOTE. ○ 0VA03CA/B indicating lights LIT. • **Start ONE fan in Plenum A as follows:** • **START 0VA03CA.** ○ Verify 0VA022Y OPEN/THROTTLED. ○ Verify 0VA020Y CLOSED. - OR - • **START 0VA03CB.** ○ Verify 0VA023Y OPEN/THROTTLED. ○ Verify 0VA436Y CLOSED.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*6	**Verify Aux Building Ventilation Aligned for Emergency Operation** (BwOP VA-5).	Perform the following at 0PM02J (Plenum B): *(Procedure Adherence)* ○ Verify Aux Building Charcoal Booster Fan transfer switch in REMOTE. ○ 0VA03CC/D indicating lights LIT. • **Start ONE fan in Plenum B as follows:** • **START 0VA03CC.** ○ Verify 0VA024Y OPEN/THROTTLED. ○ Verify 0VA021Y CLOSED. - OR - • **START 0VA03CD.** ○ Verify 0VA025Y OPEN/THROTTLED. ○ Verify 0VA437Y CLOSED.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	The examinee may elect to immediately start a Fuel Handling Building (FHB) Charcoal Booster Fan rather than starting a fan per BwOP VA-6. OP-AA-101-111, ROLES AND RESPONSIBILITIES OF ON-SHIFT PERSONNEL, step 4.7.2, directs Reactor Operators to manually INITIATE safety system's automatic actions **when** operating parameters exceed the system's automatic initiation setpoints and automatic initiation does **not** occur. If the examinee elects to immediately start a FHB Charcoal Booster Fan, refer to JPM step 7 and N/A JPM step 8. If the examinee elects to start a FHB Charcoal Booster Fan per BwOP VA-6, refer to JPM step 8 and N/A JPM step 7.					

*7	**Verify Fuel Handling Building Ventilation Aligned for Emergency Operation** (1BwEP-0, Attachment B, step 7).	Perform the following at 0PM02J: *(Procedure Adherence)*
		• **Align ONE train of FHB Charcoal Absorbers as follows:**
		  • **START 0VA04CA.**
		  ○ Verify 0VA060Y OPEN.
		  ○ Verify 0VA057Y OPEN (NOT FULLY CLOSED).
		  ○ Verify 0VA051Y CLOSED.
		- OR -
		  • **START 0VA04CB.**
		  ○ Verify 0VA055Y OPEN.
		  ○ Verify 0VA062Y OPEN (NOT FULLY CLOSED).
		  ○ Verify 0VA435Y CLOSED.
			___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	**Alternate Path Begins Here**				
*8	**@ Verify Fuel Handling Building Ventilation Aligned for Emergency Operation** (BwOP VA-6).	Perform the following at 0PM02J: *(Procedure Adherence)* ○ Verify/open desired FHB Exh Plenum Pre-filter (ONE train): ○ Plenum A – 0VA058Y & 0VA059Y. ○ Plenum B – 0VA053Y & 0VA054Y. ○ Verify/close the opposite FHB Exh Plenum Pre-filter: ○ Plenum A – 0VA058Y & 0VA059Y. ○ Plenum B – 0VA053Y & 0VA054Y. ○ Verify/close the flow control damper for the FHB Charcoal Booster Fan NOT to be started: ○ 0VA057Y (for 0VA04CA). ○ 0VA062Y (for 0VA04CB). • **Start ONE FHB Charcoal Booster Fan as follows:** • **START 0VA04CA.** ○ Verify 0VA057Y OPEN. ○ Verify 0VA060Y OPEN. ○ Verify 0VA051Y CLOSED. - OR - • **START 0VA04CB.** ○ Verify 0VA062Y OPEN. ○ Verify 0VA055Y OPEN. ○ Verify 0VA435Y CLOSED.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	After examinee locates procedure, provide a copy.				
9	Inform Unit Supervisor that 1BwEP-0, Attachment B, steps 6 & 7 are complete.	Inform Unit Supervisor that 1BwEP-0, Attachment B, steps 6 & 7 are complete. • Two Aux Building Charcoal Booster Fans and a Fuel Handling Building Charcoal Booster Fan were manually started (did NOT auto-start).	___	___	___
CUE	As US, acknowledge report of completing 1BwEP-0, Attachment B, steps 6 & 7. Another NSO will complete the procedure. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. An RCS LOCA is in progress on Unit 1.
3. 1BwEP-0, REACTOR TRIP OR SAFETY INJECTION, is in progress.

INITIATING CUE

1. The US has directed you to perform steps 6 & 7 of Attachment B of 1BwEP-0.
2. Another NSO will monitor the remainder of the Main Control Board panels and address alarms as necessary.

Job Performance Measure

Startup a Turbine Driven Feedwater Pump

JPM Number: SIM-402Sa

Revision Number: 2020 NRC

Date: 10/18/2019

Developed By:	Dan Burton /S/ Instructor	10/18/2019 Date
Validated By:	Dale Burchfield /S/ SME or Instructor	12/4/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/4/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/4/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure BwOP FW-1 Rev: 43
Procedure BwOP FW-9 Rev: 8
Procedure BwAR 1-16-A4 Rev: 54

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions

Revision 2011, Update to latest procedure revisions

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

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

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

Revision 2015, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template. Step F.5.u updated to 2000 rpm and Step F.5.v bullets added.

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2020 NRC, This JPM was MODIFIED for the ILT Class 2019-1 NRC Exam. Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template. This JPM is a LORT bank JPM (N-058) that was significantly modified for the Ovation modification changes associated with the new digital FW control system. Additionally, this JPM was also modified to be an Alternate Path JPM (uncontrolled rise in FW pump speed with a resulting high vibration condition).

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-16 or equivalent IC or use IC-0 that was written below.

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. Place simulator in RUN.
3. Start the 4th CD/CB pump per BwOP CD/CB-1.
4. Trip the 1B MFP.
   - Verify BwOP FW-1 steps F.1 through F.4 are completed.
   - Verify 1FW012B control switch is in the CLOSE position.
5. Verify 1B MFP turning gear is running (match targets).
6. Take snapshot/write IC-0, if desired.
7. Verify/perform the following:
   - Reset SER & remove excess paper from SER printer.
   - Reset/clear PPC.
   - Remove flags.
8. Open **19-1 NRC JPM SIM-402Sa.ssf** from the thumb drive and place the ssf in run.
9. When requested by the JPM evaluator, release ssf command box **SIM-402Sa Malfunctions** and ensure the following are inserted:
   - **MF SLIM4ManPB DISABLED** – prevents manual control of the 1B MFP speed controller.
   - **MF SLIM4LocalPB DISABLED** – prevents local control of the 1B MFP speed controller.
   - **MF SLIM4SpIncPB PRESSED** – raises the speed setter control auto setpoint between 5000-5500 RPM.
   - **Delete MF SLIM4SpIncPB.**
   - **MF PN1163 ON** – turns on FW PUMP TURB VIB alarm (1-16-A4).
   - **OR ZAO1VRTS002EP1 7.8** – fails vibration #1 pen on the 1B MFP vibration recorder.
   - **OR ZAO1VRTS002EP2 7.1** – fails vibration #2 pen on the 1B MFP vibration recorder.
10. When the above steps are completed for this and other JPMs to be run concurrently, then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
11. This completes the setup for this JPM.
12. Reset the simulator between each examinee's JPMs.

JPM SUMMARY

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

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

JPM Title: **Startup a Turbine Driven Feedwater Pump**
JPM Number: **SIM-402Sa** Revision Number: **2020 NRC**
Task Number and Title: **R-FW-003, Startup the Main Feedwater System (including FW pumps)**
Task Standard: **Reset/latch the 1B FW pump, open the pump recirc valve and open the low pressure and high pressure stop valves. Recognize an uncontrolled rise in 1B FW pump speed along with a high vibration condition and trip the 1B FW pump.**
K/A Number and Importance: **059 A4.01 - 3.1/3.1**
Suggested Testing Environment: **Simulator**
Alternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s):

1. BwOP FW-1, Rev. 43, STARTUP OF A TURBINE DRIVEN MAIN FEEDWATER PUMP
2. BwOP FW-9, Rev. 8, OPERATION OF A TURBINE DRIVEN FEEDWATER PUMP TURNING GEAR
3. BwAR 1-16-A4, Rev. 54, FW PUMP TURB VIB

Materials:

1. BwOP FW-1
2. BwOP FW-9

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **21** 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. Unit 1 is at 50% power.
3. The 1A-1D CD/CB pumps and the 1C FW pump are running.
4. The off-going NSO reported that the 1B FW pump HP and LP stop valves and governor valves are closed and BwOP FW-1, STARTUP OF A TDFWP, is complete through step F.4.
5. An EO is briefed and standing by at the 1B FW pump.

INITIATING CUE

1. The US has directed you to start the 1B FW pump remotely and raise turbine speed to 3200 RPM.
2. Continue BwOP FW-1 at step F.5. Do NOT perform step F.5.q until the FW System Engineer is present in the Control Room.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to BwOP FW-1.	Open BwOP FW-1 to step F.5.	___	___	___
CUE	Provide a copy of a marked-up BwOP FW-1 & FW-9 to the examinee. If asked: All Prerequisites, Precautions, Limitations and Actions have been met.				
2	Shutdown 1B FW Pump Turning Gear per BwOP FW-9.	Shutdown 1B FW Pump Turning Gear per BwOP FW-9 as follows: • Place 1B FW Pump Turning Gear Handswitch in PULL-TO-LOCK (PULLOUT).	___	___	___
CUE	Once the procedure is located, provide a copy of the procedure.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3	**Reset/latch the 1B FW pump.**	Perform the following to reset/latch the 1B FW pump: *(Procedure Adherence)* • **On Ovation graphic 6062, SELECT the TURBINE LATCH (RESET).** • ACTIVATE the popup by selecting the header. • **SELECT CONFIRM.** ○ SELECT EXIT. ○ VERIFY annunciator 1-16-B1, FW PUMP 1B TRIP, reset. ○ Dispatch an EO to PERFORM a turbine walkdown to check for EH leaks or other potential problems. ○ VERIFY/OPEN 1CD210A/B. ○ START a 4th CD/CB pump (4 pumps already running). • **VERIFY/PLACE 1FW012B in MANUAL at 0% demand using soft SLIM on OWS graphic 6060/6065.** • **PLACE 1FW012B control switch to the MODULATE position.** • **SLOWLY THROTTLE 1FW012B to full OPEN using the soft SLIM.** The prior substep may not be critical; if alarm is received and level deviation is recovered, it would only be a procedural error for comment.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***3**	Reset/latch the 1B FW pump (continued)	○ Monitor FW pump suction pressure & HDT level control. ○ VERIFY/PLACE 1FW012B Soft SLIM in AUTO. ○ VERIFY 1FW012B indicates FULL OPEN. ○ MONITOR hotwell level on 1LI-CD042/089.	___	___	___
CUE	EO reports 1B FW pump walkdown completed, no EH leaks or other problems exist.				
***4**	**OPEN 1B FW Pump Low Pressure Stop Valve.**	Perform the following to OPEN 1B FW Pump Low Pressure Stop Valve using OWS graphic 6062: *(Procedure Adherence)* ○ Dispatch an EO to VERIFY/OPEN 1MS072A and 1MS079A. • **Open FW 12B** • **SELECT the Low Press Stop Valve OPEN button.** • ACTIVATE the popup by selecting the header. • **SELECT CONFIRM.** ○ SELECT EXIT. ○ VERIFY Low Press Stop Valve OPEN light is lit.	___	___	___
CUE	EO reports 1MS072A and 1MS079A are open.				
CUE	If asked as the EO for position of the Low Pressure Stop Valve, provide a cue using the actual position indication of the stop valve.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*5	**OPEN 1B FW Pump High Pressure Stop Valve.**	Perform the following to OPEN 1B FW Pump High Pressure Stop Valve using OWS graphic 6062: *(Procedure Adherence)* • **SELECT the High Press Stop Valve OPEN button.** • ACTIVATE the popup by selecting the header. • **SELECT CONFIRM.** ○ SELECT EXIT. ○ VERIFY High Press Stop Valve OPEN light is lit.	___	___	___
CUE	If asked as the EO for position of the High Pressure Stop Valve, provide a cue using the actual position indication of the stop valve.				
CUE	If asked, the FW System Engineer has just arrived on site.				
CUE	**AFTER both stop valves are open, CUE the simulator operator to insert the 1B FW pump failures that will cause an uncontrolled rise in 1B FW pump speed with a high vibration condition.**				
NOTE	**Alternate Path Begins Here**				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*6	**@ Respond to an uncontrolled rise in 1B FW pump speed/high vibration.**	Respond to an uncontrolled rise in 1B FW pump speed/high vibration as follows: *(Conservative Bias)* ○ Determine that the 1B FW pump speed is rising uncontrollably. ○ Refer to BwAR 1-16-A4 and perform the following actions: ○ Inform US to inform System Engineering of vibration issue. ○ Check 1B FW pump vibration recorder at 1PM02J (vibration > 5 mils). • **Manually trip the 1B FW pump.**	___	___	___
CUE	If asked as the EO, after 1B FW pump speed exceeds 5000 RPM, report that there is a very loud noise coming from the 1B FW pump turbine.				
CUE	If asked for 1B FW pump vibration at 1PM12J, report 7.5 mils on both detectors.				
CUE	If asked as the EO to trip the 1B FW pump locally, report 1B FW pump failed to trip.				
CUE	This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are an extra NSO.
2. Unit 1 is at 50% power.
3. The 1A-1D CD/CB pumps and the 1C FW pump are running.
4. The off-going NSO reported that the 1B FW pump HP and LP stop valves and governor valves are closed and BwOP FW-1, STARTUP OF A TDFWP, is complete through step F.4.
5. An EO is briefed and standing by at the 1B FW pump.

INITIATING CUE

1. The US has directed you to start the 1B FW pump remotely and raise turbine speed to 3200 RPM.
2. Continue BwOP FW-1 at step F.5. Do NOT perform step F.5.q until the FW System Engineer is present in the Control Room.

Job Performance Measure

Place 1A RH Train in Shutdown Cooling

JPM Number: SIM-410P

Revision Number: 2020 NRC

Date: 10/16/2019

Developed By:	Dan Burton /S/ Instructor	10/16/2019 Date
Validated By:	Frank Davito /S/ SME or Instructor	12/3/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/3/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/3/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure BwOP RH-6 Rev: 59

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions

Revision 2011, Update to latest procedure revisions

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

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

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

Revision 2015, Revision includes current revisions of referenced procedures and current revision of TQ-JA-150-02 JPM Template. Enhanced Simulator Setup Instructions as requested from 2014 comments.

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2020 NRC, This JPM is an LORT bank JPM (N-049). Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template. Changed JPM initial conditions from MODE 4 to MODE 5.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-4, MODE 5, 195ºF, 350 psig or use IC-0 that was written below.

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. Place simulator in RUN.
3. Start the U-0 CC pump (3 CC pumps running).
4. **IRF CC33 38** to set CC flow to 1B RH HX 5000-5500 gpm (**NOTE:** '**38**' may need to be varied).
5. **IRF CC34 41** to set CC flow to 1A RH HX 5000-5500 gpm (**NOTE:** '**41**' may need to be varied).
6. Turn ON BOTH train of SVAG breakers.
7. Re-energize 1RH8701B, RC Loop 1A to RH Pump 1A Loop Isolation Valve:
   - **IRF ED065B CLOSE** to close the breaker to 1RH8701B.
   - Place valve placard upside down.
8. Verify/perform the following:
   - Reset SER & remove excess paper from SER printer.
   - Reset/clear PPC.
   - Remove flags.
9. When the above steps are completed for this and other JPMs to be run concurrently, then validate if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
10. This completes the setup for this JPM.
11. Take snapshot/write IC-0, if desired.
12. Reset the simulator between each examinee's JPMs.

JPM SUMMARY

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

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

JPM Title: **Place 1A RH Train in Shutdown Cooling**
JPM Number: **SIM-410P** Revision Number: **2020 NRC**
Task Number and Title: **R-RH-001, Startup the RH System**
Task Standard: **Manually align the 1A RH train system valves, then start the 1A RH pump.**
K/A Number and Importance: **005 A4.01 - 3.6/3.4**
Suggested Testing Environment: **Simulator**
Alternate Path: ☐Yes ☒No SRO Only: ☐Yes ☒No Time Critical: ☐Yes ☒No
Reference(s):
1. BwOP RH-6, Rev. 59, PLACING THE RH SYSTEM IN SHUTDOWN COOLING

Materials:
1. BwOP RH-6 (marked-up through step 1).

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **18** minutes **Actual Time Used:** _____ minutes

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

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

Comments: _____

_____

_____

_____

_____

_____

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is in MODE 5, RCS temperature at ~195ºF and RCS pressure at ~350 psig.
3. 1BwGP 100-5, PLANT SHUTDOWN AND COOLDOWN, is in progress at step 59.
4. 3 CC pumps are running.
5. 1B RH train is in shutdown cooling.
6. 1A RH train has been sampled and its boron concentration is 2300 ppm with the RCS boron concentration at 2200 ppm. No 1A RH train chemical additions are required.
7. 1RH8701B, RC Loop 1A to RH Pump 1A Loop Isolation Valve, was energized last shift.
8. Unit 2 is at full power.

INITIATING CUE

1. The US has directed you to place the 1A RH train in shutdown cooling per BwOP RH-6, PLACING THE RH SYSTEM IN SHUTDOWN COOLING, starting at step F.2, step F.1 is complete.
2. All BwOP RH-6 Prerequisites, Precautions, and Limitations & Actions have been met.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to BwOP RH-6.	Open BwOP RH-6 to step F.2.	___	___	___
CUE	Provide a marked-up copy of BwOP RH-6.				
2	Verify SX aligned to U-0 CC Heat Exchanger.	VERIFY SX aligned to U-0 CC HX as follows: • VERIFY/OPEN 1SX005. • VERIFY/OPEN 0SX146. • Dispatch an EO to THROTTLE OPEN 0SX007 to maintain shell side outlet temperature between 60 and 100ºF.	___	___	___
CUE	EO acknowledges throttling 0SX007 to maintain shell side outlet temperature 60-100ºF.				
*3	**Align CC to the 1A RH Heat Exchanger.**	Align CC to 1A RH HX as follows: *(Procedure Adherence)* • **OPEN 1CC9412A.** ○ VERIFY CC flow is between 5000-5500 gpm.	___	___	___
4	Verify RH boron concentration is greater than RCS boron concentration.	Perform one of the following: • Call Chemistry to verify RH boron concentration is > RCS boron concentration. • Refer to cue sheet.	___	___	___
CUE	If Chemistry is called, report RH boron concentration is 2300 ppm with the RCS boron concentration at 2200 ppm.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
5	Verify if a chemical addition is necessary prior to placing 1A RH train on line.	Perform one of the following: • Contact Chemistry to verify no chemical additions are required. • Refer to cue sheet.	___	___	___
CUE	If Chemistry is contacted, report no chemical additions are required.				
6	Verify/OPEN 1CS001A and 1CS001B.	VERIFY/OPEN 1CS001A and 1CS001B.	___	___	___
7	STROKE 1RH606 and 1RH618.	STROKE the following valves for the 1A RH train: • Stroke 1RH606 and 1RH618.	___	___	___
CUE	If an EO is dispatched to observe the valve strokes, report that each valve stroked smoothly with no problems noted.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*8	**Align 1A RH pump suction from the 1A RC loop hot leg.**	Align 1A RH pump suction from the 1A RC loop hot leg as follows: *(Configuration Control)* ○ CHECK RCS temperature < 350ºF on highest operable wide range temp indicator. ○ CHECK RCS pressure < 360 psig on 1PI-403A or 1PI-403. ○ RETURN TO SERVICE 1RH8701B (previously energized). ○ PLACE 1A RH pump C/S in PTL. ○ VERIFY 1SI8811A CLOSED. ○ VERIFY 1CV8804A CLOSED. • **CLOSE 1SI8812A.** ○ VERIFY 1CS009A CLOSED. • **CLOSE 1RH606 (pot @ 0% demand).** ○ VERIFY 1RH618 CLOSED in manual. ○ VERIFY aligned RHUT level ≥ 40%. ○ Open 1SI2015A. • **OPEN 1RH8701A.** • **OPEN 1RH8701B.** ○ VERIFY 1SI8809A OPEN. ○ Check 1RH610 OPEN and in AUTO.	___	___	___
CUE	If asked, EO reports breaker to 1RH8701B is closed. Radwaste EO reports level in RHUT aligned to relief valve header = 60%. EO reports 1SI2015A open.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
9	Maintain 1A RH pump miniflow valve (1RH610) open.	Perform the following to maintain 1A RH pp miniflow valve open: • Place C/S for 1RH610 in OPEN position.	___	___	___
10	Check 1A RH pump discharge valve open.	Dispatch an EO to VERIFY/ LOCK OPEN 1RH8724A.	___	___	___
CUE	EO reports 1RH8724A is Locked Open.				
11	Close 1A RH Discharge Header X-tie Valve (1RH8716A).	Close 1RH8716A.	___	___	___
12	Check RCS Hot Leg Temperature.	Check RCS Hot Leg Temperature < 260°F.	___	___	___
***13**	**Start the 1A RH pump.**	**Start the 1A RH pump.** *(Procedure Adherence)*	___	___	___
CUE	As EO, if asked, report a good start on the 1A RH pump. Another NSO will complete the procedure. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is in MODE 5, RCS temperature at ~195ºF and RCS pressure at ~350 psig.
3. 1BwGP 100-5, PLANT SHUTDOWN AND COOLDOWN, is in progress at step 59.
4. 3 CC pumps are running.
5. 1B RH train is in shutdown cooling.
6. 1A RH train has been sampled and its boron concentration is 2300 ppm with the RCS boron concentration at 2200 ppm. No 1A RH train chemical additions are required.
7. 1RH8701B, RC Loop 1A to RH Pump 1A Loop Isolation Valve, was energized last shift.
8. Unit 2 is at full power.

INITIATING CUE

1. The US has directed you to place the 1A RH train in shutdown cooling per BwOP RH-6, PLACING THE RH SYSTEM IN SHUTDOWN COOLING, starting at step F.2, step F.1 is complete.
2. All BwOP RH-6 Prerequisites, Precautions, and Limitations & Actions have been met.

Job Performance Measure

Swap Containment Chillers

JPM Number: SIM-512

Revision Number: 2020 NRC

Date: 10/21/2019

Developed By:	Dan Burton /S/ Instructor	10/21/2019 Date
Validated By:	Dale Burchfield /S/ SME or Instructor	12/4/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/4/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/4/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure BwOP VP-1 Rev: 56
Procedure BwOP VP-2 Rev: 17

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

Revision Record (Summary)

Revision 2020 NRC, This JPM is a new JPM written for the ILT Class 19-1 NRC exam. Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any IC with the 1A Cnmt Chiller running or use IC-0 that was written below.

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. Place simulator in RUN.
3. Verify/close 1SX112B/114B.
4. Place 1SX147B C/S in the OPEN position.
5. Verify/perform the following:
   - Reset SER & remove excess paper from SER printer.
   - Reset/clear PPC.
   - Remove flags.
6. When the above steps are completed for this and other JPMs to be run concurrently, then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
7. This completes the setup for this JPM.
8. Take snapshot/write IC-0, if desired.
9. Reset the simulator between each examinee's JPMs.

Exelon Generation

JPM SUMMARY

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

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

JPM Title: **Swap Containment Chillers**
JPM Number: **SIM-512** Revision Number: **2020 NRC**
Task Number and Title: **R-VP-001: Startup the Containment Cooling System**
Task Standard: **Shutdown the 1A Cnmt Chiller and 1A Cnmt Chilled Water Pump, align 1B train SX cooling valves, then start the 1B Cnmt Chilled Water Pump and 1B Cnmt Chiller.**
K/A Number and Importance: **022 A4.02 - 3.2 /3.1**
Suggested Testing Environment: **Simulator**
Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s):

1. BwOP VP-1, Rev. 56, RCFC REFRIGERATION UNIT AND CHILLED WATER SYSTEM STARTUP
2. BwOP VP-2, Rev. 17, RCFC REFRIGERATION UNIT AND CHILLED WATER SYSTEM SHUTDOWN

Materials:

1. BwOP VP-1
2. BwOP VP-2

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **18** 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 at power.
3. A small oil leak has developed on the 1A Cnmt Chiller.

INITIATING CUE

1. The US has directed you to shutdown the 1A Cnmt Chiller and 1A Cnmt Chilled Water Pump from 0PM02J per BwOP VP-2.
2. Then start the 1B Cnmt Chilled Water Pump and 1B Cnmt Chiller from 0PM02J per BwOP VP-1.
3. An EO is briefed and standing by at the 1A Cnmt Chiller.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to BwOP VP-2.	Locate and open BwOP VP-2.	___	___	___
CUE	After examinee locates procedure, provide a copy. As EO, if asked, report both Cnmt Chiller Local/Remote switches are in the REMOTE position.				
***2**	**Shutdown the 1A Cnmt Chiller from 0PM02J** (step F.3).	Shutdown the 1A Cnmt Chiller from 0PM02J (step F.3) by performing the following: *(Procedure Adherence)* ○ Verify/place Capacity Control Switch, located inside Local Control Panel, in AUTO. ○ Verify/place 1A Cnmt Chiller control switch in AFTER CLOSE at 0PM02J. ○ Verify 1A Cnmt Chiller Local/Remote switch at Local Control Panel is in REMOTE. • **Place 1A CNMT Chiller (1WO01CA) control switch to AFTER TRIP/PULLOUT.** ○ Direct the EO to verify guide vanes have closed.	___	___	___
CUE	EO reports that the Capacity Control Switch is in AUTO. EO reports that the 1A Cnmt Chiller Local/Remote switch is in REMOTE. As EO, if asked, report a good shutdown of the 1A Cnmt Chiller. EO reports 1A Cnmt Chiller guide vanes have closed.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3	**Shutdown the 1A Cnmt Chilled Water Pump from 0PM02J.**	Shutdown the 1A Cnmt Chilled Water Pump at 0PM02J by performing the following: *(Procedure Adherence)* • **Place 1A Cnmt Chilled Water Pump (1WO01PA) control switch to AFTER TRIP/PULLOUT.**	___	___	___
CUE	As EO, if asked, report a good shutdown of the 1A Cnmt Chilled Water Pump. As US, if asked, the oil heater will remain energized.				
4	Refer to BwOP VP-1.	Locate and open BwOP VP-1.	___	___	___
CUE	After examinee locates procedure, provide a copy. EO reports all Prerequisites, Precautions and Limitations & Actions are complete. EO reports BwOP VP-1 steps 1, 2 and 5 are complete.				
*5	**Align SX cooling valves for the 1B Cnmt Chiller.**	Align SX cooling valves for the 1B Cnmt Chiller at 0PM02J/1PM06J by performing the following: *(Procedure Adherence)* • **OPEN 1SX112B/114B.** ○ Verify/open 1SX147B. ○ Verify/open 1SX016B. ○ Verify/open 1SX027B.	___	___	___
6	Align chilled water valves for the 1B Cnmt Chiller.	Align chilled water valves for the 1B Cnmt Chiller at 1PM06J by performing the following: • Verify/open 1WO006A/B. • Verify/open 1WO020A/B. • Verify/open 1WO056A/B.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*7	**Start the 1B Cnmt Chilled Water Pump from 0PM02J.**	Start the 1B Cnmt Chilled Water Pump at 0PM02J by performing the following: *(Procedure Adherence)* • **Place 1B Cnmt Chilled Water Pump (1WO01PB) control switch to AFTER CLOSE.**	___	___	___
CUE	As EO, if asked, report a good start of the 1B Cnmt Chilled Water Pump.				
8	Perform local actions prior to starting the 1B Cnmt Chiller.	Perform local actions prior to starting the 1B Cnmt Chiller. Direct the EO to perform the following:	___	___	___
	Step F.7	• THROTTLE chilled water flow to maintain 2950-3050 gpm at 1FIS-WO027.			
	Step F.8	• Verify chiller oil level is ≥ 25% in the sightglass.			
	Step F.9	• Perform a lamp test at the chiller control panel.			
	Step F.10	• Verify proper oil temperature to start chiller.			
	Step F.11	• Perform steps within the control panel.			
CUE	EO reports chilled water flow at 1FIS-WO027 is 3000 gpm (no throttling required). EO reports chiller oil level is 50% in the sightglass. EO reports lamp test completed satisfactorily. EO reports chiller oil reservoir temperature is 145ºF on 1TI-WO065 and compressor Low Oil Temp alarm is NOT lit. EO reports Electrical Demand Selector at 60% demand, Capacity Control switch is in AUTO and Program Timer is within 2 division marks on the wheel of the zero mark.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
9	Perform local actions prior to starting the 1B Cnmt Chiller (continued). Step F.12 Step F.13	Perform local actions prior to starting the 1B Cnmt Chiller (continued). Direct the EO to perform the following: • Verify Purge Control Unit is in Adaptive Mode. • Verify/reset safety indicators.	___	___	___
CUE	EO reports LCD on the Purge Control Unit displays ADAPTIVE mode. EO reports DEPRESSING the RESET pushbutton for 2 seconds, then releasing (NO Trip lights are LIT).				
*10	**Start the 1B Cnmt Chiller.**	Start the 1B Cnmt Chiller at 0PM02J by performing the following: *(Procedure Adherence)* • **Place 1SX147B control switch in AUTO.** ○ Verify/place Local START/STOP switch at Local Control Panel to STOP. ○ Verify/place Local/Remote control switch at Local Control Panel is in REMOTE. ○ Record initial data (Att. B). • **Place 1B Cnmt Chiller (1WO01CB) control switch to AFTER CLOSE** (start signal).	___	___	___
CUE	EO reports Local START/STOP switch at Local Control Panel in STOP. EO reports Local/Remote control switch at Local Control Panel is in REMOTE. EO reports that initial (T=0) data has been recorded on Attachment B.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
11	Verify program timer starts the 1B Cnmt Chiller. Step F.17 Step F.18 1B Cnmt Chiller starts, Step F.19 Step F.20 Step F.21	Verify program timer starts the 1B Cnmt Chiller. Direct the EO to perform the following: • Verify the Program Timer Light at Local Control Panel illuminates. • Verify the oil pump starts in ~ 23 seconds. • Verify the compressor starts in ~ 28 seconds AFTER the oil pump starts. • Verify the Program Timer Light goes OFF. • Verify oil pressure indicator, 1PI-WO064, remains between 6-40 psig.			
CUE	EO reports Program Timer Light at Local Control Panel is lit. EO reports oil pump started in ~ 23 seconds. EO reports a good start on the 1B Cnmt Chiller (NOTE: started in ~ 28 seconds AFTER the oil pump started). EO reports Program Timer Light is OFF. EO reports oil pressure indicator, 1PI-WO064, is 25 psig.				
CUE	Another NSO will complete the procedure. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is at power.
3. A small oil leak has developed on the 1A Cnmt Chiller.

INITIATING CUE

1. The US has directed you to shutdown the 1A Cnmt Chiller and 1A Cnmt Chilled Water Pump from 0PM02J per BwOP VP-2.
2. Then start the 1B Cnmt Chilled Water Pump and 1B Cnmt Chiller from 0PM02J per BwOP VP-1.
3. An EO is briefed and standing by at the 1A Cnmt Chiller.

Job Performance Measure

Unload and Shutdown 1A Diesel Generator

JPM Number: SIM-600

Revision Number: 2020 NRC

Date: 10/22/2019

Developed By:	Dan Burton /S/ Instructor	10/22/2019 Date
Validated By:	Frank Davito /S/ SME or Instructor	12/4/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/4/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/4/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure BwOP DG-11T1 Rev: 8
Procedure 1BwOSR 3.8.1.2-1 Rev: 46

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions

Revision 2011, Update to latest procedure revisions

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

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

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

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

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

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2020 NRC, This JPM is a LORT bank JPM (N-020). Verified current revision of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-21 or any IC where bus 141 is powered from its SAT (offsite) or use IC-0 that was written below.

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. Place simulator in RUN.
3. Parallel 1A DG per 1BwOSR 3.8.1.2-1. Place the Auto Reclose Circuit Arm Selector Switch in the Surveillance Test position.
4. Raise load to 5200 KW.
5. Acknowledge all alarms. Ensure all local alarms are reset using **RF EG06 RESET**.
6. When the above steps are completed for this and other JPMs to be run concurrently, then validate if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
7. Verify/perform the following:
   - Reset SER & remove excess paper from SER printer.
   - Remove flags.
8. This completes the setup for this JPM.
9. Take snapshot/write IC-0, if desired.
10. Reset the simulator between each examinee's JPMs.

Exelon Generation

JPM SUMMARY

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

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

JPM Title: **Unload and Shutdown 1A Diesel Generator**
JPM Number: **SIM-600** Revision Number: **2020 NRC**
Task Number and Title: **R-DG-015, Operate Emergency Diesel Generator**
Task Standard: **Unload the 1A DG by lowering load, open the 1A DG output breaker, then place the 1A DG start switch in stop.**
K/A Number and Importance: **064 A4.07 - 3.4/3.4**
Suggested Testing Environment: **Simulator**
Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s):

1. BwOP DG-11T1, Rev. 8, DIESEL GENERATOR START/STOP LOG
2. 1BwOSR 3.8.1.2-1, Rev. 46, 1A DIESEL GENERATOR OPERABILITY SURVEILLANCE

Materials:

1. BwOP DG-11T1 (marked-up copy through 1A DG start)
2. 1BwOSR 3.8.1.2-1 (marked-up copy through step F.6)

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 Assist NSO.
2. Both units are at power.
3. 1A Diesel Generator has been running for 255 minutes at 5200 KW.

INITIATING CUE

1. The US has directed you to shutdown the 1A Diesel Generator from the Control Room per 1BwOSR 3.8.1.2-1, 1A DIESEL GENERATOR OPERABILITY SURVEILLANCE, step F.7. An EO is standing by at the 1A Diesel Generator.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Refer to 1BwOSR 3.8.1.2-1.	Open 1BwOSR 3.8.1.2-1 to step F.7.	___	___	___
CUE	If asked, 1A DG Start Mode Selector switch is in FAST.				
***2**	Unload the 1A Diesel Generator to 1400 KW while maintaining < 1000 KVARs.	Using the 1A Diesel Generator Gov Adj control switch, reduce load as follows: • Go from full load to ~4100 KW (wait ~2 minutes prior to continuing). • Record clock time 1A DG KW output < ~4950 KW. ○ Calculate total time 1A DG KW output ≥ ~4950 KW and ≤ ~5500 KW. • Go from ~4100 KW to ~2750 KW (wait ~2 minutes prior to continuing). • Go from ~2750 KW to ~1400 KW (wait ~15 minutes prior to continuing). • Load established between 1200 KW and 1600 KW. ○ Maintain ≤ ~1000 KVARs throughout the unloading process using the Volt Adj control switch.	___	___	___
CUE	After load reaches ~4100 KW and the examinee pauses for the 2 minute wait, cue that 2 minutes has elapsed. After load reaches ~2750 KW and the examinee pauses for the 2 minute wait, cue that 2 minutes has elapsed. After load reaches ~1400 KW and the examinee pauses for the 15 minute wait, cue that 15 minutes has elapsed.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	JPM steps 3 & 4 may be performed concurrently with JPM step 2.				
3	Dispatch an EO to restart the Fuel Oil Transfer Pump previously secured.	Dispatch an EO to restart the Fuel Oil Transfer Pump previously secured.	___	___	___
CUE	An EO has been dispatched and has restarted the previously secured Fuel Oil Transfer Pump.				
4	Dispatch an EO to read/record differential pressures for running Fuel Oil Transfer Pumps.	Dispatch an EO to read differential pressures for running Fuel Oil Transfer Pumps and record in the comments section of BwOP DG-11T2.	___	___	___
CUE	An EO has recorded the DPs for the running Fuel Oil Transfer Pumps. If asked, DPs are between 1.2 to 1.5 psid.				
NOTE	BwOP DG-11T2 is being maintained locally at the 1A DG by the EO.				
***5**	**Reduce 1A Diesel Generator load to ≤ 250 KW.**	**Reduce load on the 1A Diesel Generator to ≤ 250 KW using the Gov. Adj control switch.** *(Procedure Adherence)*	___	___	___
NOTE	DG load must be reduced to ≤ 250 KW before breaker 1413 is opened.				
6	Adjust 1A Diesel Generator reactive load to ~zero KVARS.	Adjust 1A Diesel Generator reactive load to ~zero KVARs using the Volt Adj control switch.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***7**	**Open 1A Diesel Generator output breaker, ACB 1413.**	Perform the following: *(Procedure Adherence)* ○ **Open ACB 1413.** ○ Record time ACB 1413 was opened on BwOP DG-11T1. ○ Wait ~5 minutes prior to stopping the 1A DG.	___	___	___
CUE	After breaker 1413 is open and the examinee pauses for the 5 minute wait, cue that 5 minutes has elapsed.				
8	Place 1A DG ACB 1413 Auto Reclose Circuit Arm Selector switch in NORM position.	○ At 1PM01J, place the Auto Reclose Circuit Arm Selector switch in NORM position. ○ Obtain verification.	___	___	___
NOTE	When asked, provide verification (initial the step in the procedure).				
***9**	**Shutdown the 1A Diesel Generator from the Control Room.**	Perform the following to shutdown the 1A Diesel Generator from the Control Room: *(Procedure Adherence)* ○ Verify the Start Mode Selector switch is in FAST. ○ Verify DG air receiver pressures are > 175 psig prior to stopping the DG. ○ Verify the Control Mode Selector switch is in REMOTE. ○ **Place the 1A DG start switch in STOP.** ○ Check the STOP light illuminated.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	EO reports 1A DG Start Mode Selector switch is in FAST. EO reports BOTH 1A DG air receiver pressures are 220 psig. EO reports Control Mode Selector switch is in REMOTE. Another NSO will complete BwOP DG-11T1 and complete the 1A DG Shutdown. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Both units are at power.
3. 1A Diesel Generator has been running for 255 minutes at 5200 KW.

INITIATING CUE

1. The US has directed you to shutdown the 1A Diesel Generator from the Control Room per 1BwOSR 3.8.1.2-1, 1A DIESEL GENERATOR OPERABILITY SURVEILLANCE, step F.7. An EO is standing by at the 1A Diesel Generator.

Exelon Generation

Job Performance Measure

Perform a Calorimetric Surveillance

JPM Number: SIM-702

Revision Number: 2020 NRC

Date: 10/22/2019

Developed By:	Dan Burton /S/ Instructor	10/22/2019 Date
Validated By:	Dale Burchfield /S/ SME or Instructor	12/4/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/4/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/4/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BwOSR 3.3.1.2-1 Rev: 19

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2018, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template. Adapted from LORT JPM N-006b for ILT 17-1.

Revision 2020 NRC, This JPM is an ILT bank JPM (SIM-702). Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template. This JPM was randomly selected from 4 other Safety Function #7 bank JPMs. This JPM was last used on the ILT Class 17-1 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-21 or equivalent 100% power IC or use IC-0 that was written below.

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. Place simulator in RUN.
3. Adjust Tave to be 0.1 - 0.2°F above Tref.
4. Simulator needs to run for at least 10 minutes.
5. Ensure PPC screen alignments are normal for the selected IC.
6. Adjust gain pot on PR channel N-42 to indicate 99.0% at 1PM07J.
7. Verify/adjust other 3 PRNIs = 100% at 1PM07J.
8. Lock gain pots in position.
9. Ensure rods in AUTO.
10. Verify/perform the following:
    - Reset/clear PPC.
    - Remove flags.
11. Ensure/clear recorders.
12. Ensure/clear calculator.
13. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
14. This completes the setup for this JPM.
15. Take snapshot/write IC-0, if desired.
16. Reset the simulator between each examinee's JPMs.

JPM SUMMARY

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

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

JPM Title: **Perform a Calorimetric Surveillance**

JPM Number: **SIM-702** Revision Number: **2020 NRC**

Task Number and Title: **R-NI-004, Perform Calorimetric Calculation**

Task Standard: **Perform a calorimetric using the PPC, determine that PRNI channel N-42 (NR-42) reads out-of-spec low, then adjust the PRNI channel 42 gain to restore the PRNI channel N-42 reading to an acceptable value.**

K/A Number and Importance: **015 A1.01 - 3.5/3.8**

Suggested Testing Environment: **Simulator**

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

Reference(s):

1. 1BwOSR 3.3.1.2-1, Rev. 19, POWER RANGE HIGH FLUX SETPOINT DAILY CHANNEL CALIBRATION (COMPUTER CALORIMETRIC)

Materials:

1. 1BwOSR 3.3.1.2-1

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **31** 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. Both Units are at power under steady state conditions.
3. All systems and controls are normal for the present conditions.

INITIATING CUE

1. The US has directed you to perform a calorimetric using the PPC per 1BwOSR 3.3.1.2-1, POWER RANGE HIGH FLUX SETPOINT DAILY CHANNEL CALIBRATION (COMPUTER CALORIMETRIC).

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	PR N42 should be reading 99%.				
1	Refer to 1BwOSR 3.3.1.2-1.	Refer to 1BwOSR 3.3.1.2-1. On Data Sheet D-2: • Record Date and Time in Block 1. • Record Gross MWe in Block 2. • Record Control Bank C & D positions in Block 2. • Sign for ALL prerequisites satisfactorily addressed in Block 2. • Record the INITIAL % power from the NIS drawers in Block 3.	___	___	___
NOTE	Provide a copy of the procedure to the examinee.				
CUE	If asked, all Prerequisites, Precautions and Limitations & Actions are met.				

2	Access the PPC Program for the Calorimetric.	Access the PPC program for the Calorimetric as follows: • Review manually entered point values. ➢ From the Main Menu page, SELECT User Functions. ➢ From User Functions menu, SELECT Point Summaries. ➢ On POINTS WITH SUBSTITUTED VALUES line, SELECT All. ➢ SELECT Get Report. ➢ Print if desired. ➢ REVIEW report against list of Calorimetric Program Inputs provided in Appendix B. ➢ On POINTS DELETED FROM PROCESSING line, SELECT All. ➢ SELECT Get Report. ➢ Print if desired. ➢ REVIEW report against list of Calorimetric Program Inputs provided in Appendix B. ➢ Verify any off scan or manually entered values that affect the calorimetric are correct for present conditions (NONE). ➢ VERIFY minimum of 15 minutes elapsed for manual entry (N/A – NO manual entries).	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
2	Access the PPC Program for the Calorimetric (con't).	• From the Main Menu page, SELECT Operator Demandable. • Select Calorimetric. • Review Alert status for input points out of scan or poor quality (NONE highlighted). • N/A - steps F.4.e/f/g.			
3	Create Calorimetric Report from the PPC. (This step is not Critical)	Perform the following to create a Calorimetric Report from the Plant Process Computer: *(Procedure Adherence)* • Select the Calculation Method Control Screen. ○ Verify current calculation method is 1 or 3. ○ N/A - step F.4.j. • Print the Calorimetric Calculation Method Control page.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	**Alternate Path Begins Here**				
***4**	**@ Determine if an adjustment is required for each operable power range channel.**	Determine if an adjustment is required for each operable power range channel as follows: *(Procedure Adherence)* • **Record the 10 minute reactor power % value from the Calorimetric Calculation Method Control printout in Block 5.** • **Determine the power difference by subtracting the Calorimetric power from the NIS power for each channel and record in block 6.** (Power difference should be recorded to one decimal point) • **Determine that an adjustment is necessary:** o Check "NO" boxes for channels NR-41, NR-43, and NR-44 in block 7. • **Check "YES" for channel NR-42 in block 7.**	___	___	___
NOTE	All block 6 numbers are positive numbers and less than 2% except for NR-42 which is negative. Current reactor power is above P-8 (30%).				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*5	**Determine the amount to adjust Channel NR-42.**	Determine the amount to adjust Channel NR-42 as follows: *(Procedure Adherence)* • **Record the present percent power reading from NR-42 NIS drawer in block 8.** • **Record the power difference calculated in step 6 in block 9.** • **Subtract the power difference from the current reading to determine the indicated power level to adjust to and record in block 10.** ○ Obtain review/approval authorization from SM or designee signature in block 11.	___	___	___
CUE	SM/US (designee) concurs with the NI adjustment (sign block 11).				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*6	**Adjust Channel NR-42.**	Adjust Channel NR-42 as follows: *(Procedure Adherence)* • Place the Rod Control System in MANUAL. • **Adjust the GAIN potentiometer on Drawer B of NR-42 until the indicated power equals the calculated value of block 10.** ○ Reset any rate trip present. • **Indicate "YES" in block 14 for channel NR-42.** ○ Restore Rod Control System to AUTO when Tave is within 1.0°F of Tref.	___	___	___
CUE	The Unit 1 NSO will restore Rod Control to AUTO.				
7	Attach the computer printout behind Data Sheet D-2 and complete block 17.	Complete Data Sheet D-2 as follows: • Obtain SM/designee review of data. • Attach the computer printout behind Data Sheet D-2. • MARK "YES" in both boxes of block 17. • Report completion of surveillance to US.	___	___	___
CUE	As SM/designee, if asked, acknowledge review of data.				
CUE	As US, acknowledge completion of surveillance. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are an Extra NSO.
2. Both Units are at power under steady state conditions.
3. All systems and controls are normal for the present conditions.

INITIATING CUE

1. The US has directed you to perform a calorimetric using the PPC per 1BwOSR 3.3.1.2-1, POWER RANGE HIGH FLUX SETPOINT DAILY CHANNEL CALIBRATION (COMPUTER CALORIMETRIC).

Job Performance Measure

Respond to an RCP Thermal Barrier Leak

JPM Number: SIM-801

Revision Number: 2020 NRC

Date: 10/23/2019

Developed By:	Dan Burton /S/ Instructor	10/23/2019 Date
Validated By:	Frank Davito /S/ SME or Instructor	12/4/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/4/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/4/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 1BwOA PRI-6 Rev: 110
Procedure BwAR 1-7-E4 Rev: 52
Procedure BwAR 1-2-A5 Rev: 10

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions.

Revision 2011, Verify latest procedure revisions.

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

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

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

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

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

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2019, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template. Simulator setup instructions revised.

Revision 2020 NRC, This JPM is an ILT bank JPM (SIM-801). Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-16 or any IC in Modes 1-3 or use IC-0 that was written below.

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. Place simulator in RUN.
3. Energize one set of PZR B/U heaters and stabilize PZR pressure.
4. Open SmartScenario file **19-1 NRC JPM SIM-801.ssf** from the thumb drive and place the ssf in run.
5. Release ssf command box **SIM-801 Setup/Malfunctions** and ensure the following are inserted:
   - **MF AN01I** – turns off the RMS alarm.
   - **OR ZDI1CC685 OPEN** – fails 1CC685 open.
   - **MF CC09 231** – causes a 231 gpm thermal barrier flow signal.

   The 2 remaining items must be MANUALLY released from SmartSummary when requested by the evaluator:
   - **IMF CC07B 40 when the examinee after the examinee has been handed the cue sheet** (initiates the thermal barrier leak).
   - **IRF CC45 0 when asked to CLOSE 1CC9496B** (isolates the 1B RCP thermal barrier CC line).

     When 1CC9438 valve position is < 0.01, MF CC09 will be auto deleted (DMF CC09). This removes the failed thermal barrier flow signal.
6. Forward the SER alarm printer paper.
7. Verify/perform the following:
   - Reset/clear PPC.
   - Remove flags.
8. On the SER terminal: clear the recent messages and bring up an alarm summary.
9. Take snapshot/write IC-0, if desired.
10. When the above steps are completed for this and other JPMs to be run concurrently, then validate, if not previously validated, then concurrently run JPMs using the JPM Validation Checklist.
11. This completes the setup for this JPM.
12. Reset the simulator between each examinee's JPMs.

Exelon Generation

JPM SUMMARY

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

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

JPM Title: **Respond to an RCP Thermal Barrier Leak**
JPM Number: **SIM-801** Revision Number: **2020 NRC**
Task Number and Title: **R-OA-061, Respond to a loss of CC to RCP oil/thermal barrier coolers**
Task Standard: **Respond to an RCP Thermal Barrier CC flow high condition, attempt to close 1CC685 (failed open), close 1CC9438, locally close the thermal barrier isolation valve, then re-open 1CC9438.**
K/A Number and Importance: **008 A4.01 - 3.3/3.1**
Suggested Testing Environment: **Simulator**
Alternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s):

1. 1BwOA PRI-6, Rev. 110, COMPONENT COOLING MALFUNCTION
2. BwAR 1-7-E4, Rev. 52, RCP THERM BARR CC WTR FLOW HIGH LOW
3. BwAR 1-2-A5, Rev. 10, CC SURGE TANK LEVEL HIGH LOW

Materials:

1. 1BwOA PRI-6
2. BwAR 1-7-E4
3. BwAR 1-2-A5

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**: _____

EVALUATOR NOTE: Cue the simulator operator to insert the thermal barrier leak just prior to handing the CUE sheet to the examinee.

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is stable in the current mode.
3. Annunciator 1-7-E4, RCP THERM BARR CC WTR FLOW HIGH LOW, has just alarmed.

INITIATING CUE

1. Respond to the annunciator 1-7-E4 alarm.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	Examinee may attempt to CLOSE 1CC685 at any time since 1CC685 did not automatically close on high flow.				
NOTE CUE	Examinee will refer to BwAR 1-7-E4 which will direct response per 1BwOA PRI-6 (below) and 1BwOA PRI-1. **If the examinee notes the reference to 1BwOA PRI-1, provide the following CUE:** **Another NSO will perform actions of 1BwOA-PRI-1; you will perform actions of 1BwOA PRI-6.**				
1	Refer to BwAR 1-7-E4 which has the operator refer to 1BwOA PRI-6, COMPONENT COOLING MALFUNCTION.	Refer to BwAR 1-7-E4: ○ Attempt to CLOSE 1CC685 (BwAR automatic action; 1CC685 will NOT close). • Determine a high flow condition exists. • REFER to 1BwOA PRI-6, COMPONENT COOLING MALFUNCTION.	___	___	___
CUE	After 1BwOA PRI-6 is located, provide a copy to the examinee.				
2	Monitor RCP Seal Cooling.	Monitor RCP Seal Cooling: • Recognize that seal injection flow is in-service (1B seal injection flow is HIGH). • Determine all RCP bearing temperatures are normal.			

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
3	Check CC surge tank level.	Check CC surge tank level: • Check CC surge tank level (1LI-670/676) > 13%. • Check CC surge tank level STABLE (NO - rising). • GO TO Attachment B, step 1. • Determine CC surge tank level is RISING and GO TO step 5. ○ Respond to BwAR 1-2-A5, CC SURGE TANK LEVEL HIGH LOW (dispatch EO to drain CC surge tank).	___	___	___
4	Check for leakage from RCP Thermal Barrier.	Check for leakage from RCP Thermal Barrier: ○ Annunciator 1-7-E4 - LIT. - OR - ○ Seal Injection flow - ANY ABNORMALLY HIGH. • Determine 1B RCP has abnormally high seal injection flow/annunciator 1-7-E4 is LIT.	___	___	___
5	Check seal injection flow between 8 and 13 gpm per pump.	Check seal injection flow between 8 and 13 gpm per pump: • Attempt to throttle 1CV121 and 1CV182 to obtain between 8 and 13 gpm seal injection flow per RCP (if possible).	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	**Alternate Path Begins Here**				
*6	**@ Check 1CC685 closed.**	Check 1CC685 closed: *(Control Board Awareness)* ○ Check 1CC685 CLOSED (NO). ○ Take control switch for 1CC685 to CLOSE (will NOT close, may have been previously attempted). • **Manually close 1CC9438.** ○ Notify SRO that 1CC685 is inoperable/failed open.	___	___	___
CUE	US acknowledges 1CC685 failure/Tech Spec evaluation.				
*7	**Restore CC to unaffected RCPs at SM discretion by locally closing RCP Thermal Barrier CC outlet valve to isolate affected RCP.**	Restore CC to unaffected RCPs at SM discretion by locally closing RCP Thermal Barrier CC outlet valve to isolate 1B RCP. *(Procedure Adherence)* ○ Dispatch operator to enter Cnmt to locally close 1CC9496B. • **After 1CC9496B closure, open 1CC9438.**	___	___	___
CUE	If asked, SM desires the 1B RCP thermal barrier CC line to be isolated.				
NOTE	**When directed by the examinee, CUE the simulator operator to close 1CC9496B.**				
CUE	After the simulator operator closes 1CC9496B, EO reports 1CC9496B is closed.				
CUE	As US, if asked about re-opening 1CC9438/Tech Spec 3.6.3 concern with 1CC685 failed open, inform the examinee that the Cnmt penetration can be re-opened while a plant evaluation is being made.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	Another NSO will complete 1BwOA PRI-6. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are the Unit 1 Assist NSO.
2. Unit 1 is stable in the current mode.
3. Annunciator 1-7-E4, RCP THERM BARR CC WTR FLOW HIGH LOW, has just alarmed.

INITIATING CUE

1. Respond to the annunciator 1-7-E4 alarm.

Job Performance Measure

Locally Reset Phase A

JPM Number: IP-206

Revision Number: 2020 NRC

Date: 10/29/19

Developed By:	Dan Burton /S/ Instructor	10/29/2019 Date
Validated By:	Frank Davito /S/ SME or Instructor	12/5/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/5/2019 Date
Approved By:	Dane Brunswick /S/ Training Department	12/5/2019 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 2BwOA PRI-5 Rev: 106
Procedure 2BwEP ES-1.1 Rev: 300

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions

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

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

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

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

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

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

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

Revision 2019, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2020 NRC, This JPM is a LORT bank JPM (N-066). Verified current revision of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. N/A, In-Plant JPM.

JPM SUMMARY

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

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

JPM Title: **Locally Reset Phase A**

JPM Number: **IP-206** Revision Number: **2020 NRC**

Task Number and Title: **R-EF-003, Reset the Engineered Safety Features**

Task Standard: **Reset Phase A train B in the MCR, then reset Phase A train A in the AEER by properly placing jumpers in the correct location in 2PA09J.**

K/A Number and Importance: **013 A4.02 - 4.3/4.4**

Suggested Testing Environment: **In-Plant**

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

Reference(s):

1. 2BwOA PRI-5, Rev. 106, CONTROL ROOM INACCESSIBILITY, ATTACHMENT E, ESF MANUAL BLOCK OR RESET
2. 2BwEP ES-1.1, Rev. 300, SI TERMINATION

Materials:

1. 2BwEP ES-1.1, Step 2 (placekeep through step 1)
2. 2BwOA PRI-5, Attachment E
3. Laser Pointer

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

Testing Method: ☒ Simulate ☐ Perform

Estimated Time to Complete: **18** 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**: _____

Prior to administration of this JPM, check-out 2PA09J, 2PA10J and at least 2 other keys that the examiner will maintain for the duration of the JPM.

INITIAL CONDITIONS

1. You are an extra NSO.
2. An inadvertent SI occurred, and the crew transitioned from 2BwEP-0 to 2BwEP ES-1.1.
3. SI has been reset on both trains per step 1 of 2BwEP ES-1.1.

INITIATING CUE

1. You have been directed to reset Containment Isolation per step 2 of 2BwEP ES-1.1.

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.

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 2BwEP ES-1.1, step 2.	Refer to 2BwEP ES-1.1, step 2.	___	___	___
NOTE	Provide a copy of 2BwEP ES-1.1, step 2 to the examinee.				
***2**	**Reset Containment Isolation per 2BwEP ES-1.1.**	Reset Containment Isolation per 2BwEP ES-1.1 by performing the following: *(Procedure Adherence)* ○ Depress Phase A Train A Reset Pushbutton. • **Depress Phase A Train B Reset Pushbutton.** ○ Depress BOTH Phase B Reset Pushbuttons (Phase B did NOT actuate). ○ Verify Phase A alarm has cleared/reset (NO). ○ Inform the US of the Phase A reset issue and determine that Phase A must be reset per 2BwOA PRI-5, Attachment E.	___	___	___
CUE	If asked, SM is evaluating for Emergency Plan conditions. BOTH Phase A Reset Pushbuttons have been depressed. If asked, Annunciator 2-5-B7, CNMT PHASE A ISOLATION, did NOT clear. If checked, train A SER point 0017 is in alarm AND train B SER point 2190 has reset. If required, the US will prompt the NSO for the next course of action (reset Phase A locally). The examinee may conservatively reset BOTH trains locally.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	**Alternate Path Begins Here**				
3	@ Refer to 2BwOA PRI-5, Attachment E.	Locate and open 2BwOA PRI-5, Attachment E. Determine if entry can be made into the U-2 AEER. • Obtain status report from Fire Brigade Leader/Rad Protection, determine that AEER is accessible. Obtain the following: • Key to ESF cabinet 2PA09J (examiner has this key). • 2 jumpers from cabinet at RSP or MCR. • Necessary safety equipment (None required; must remove all metal from hands/wrists and any body part that will break the cabinet plane).	___	___	___
CUE	After examinee locates procedure, provide a copy of 2BwOA PRI-5, ATT E. As RP/Fire Brigade Chief, report the AEER is accessible; no fire or Rad issues exist.				
NOTE	**PROMPT the use of a LASER pointer to show the location of required actions inside electrical cabinets.** If actually going to the RSP, have the examinee locate the jumpers and keys, but do NOT allow them to be removed from the cabinet.				
CUE	**Inform examinee that all required actions in 2PA09J are to be simulated and make every effort to NOT touch any component or break the plane of 2PA09J.**				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***4**	**Reset Train A of Containment Isolation Phase A at 2PA09J.**	In the rear of LOGIC cabinet 2PA09J, LOCATE and PLACE one jumper across TB504 points 7 and 8: *(Configuration Control)* ○ Verify/turn OFF the switch on the jumper. • **Place jumper across TB504 points 7 and 8.** • **Turn jumper switch ON.**	___	___	___
CUE	Switchable jumper installed on TB504 across points 7 and 8. When performed, jumper switch is turned ON.				
***5**	**Unlatch Train A Containment Isolation Phase A Slave Relays at 2PA09J.**	In the rear of OUTPUT cabinet 2PA09J, LOCATE and PLACE one jumper across TB644 points 3 and 4: *(Configuration Control)* ○ Verify/turn OFF the switch on the jumper. • **Place jumper across TB644 points 3 and 4.** • **Turn jumper switch ON.**	___	___	___
CUE	Switchable jumper installed on TB644 across points 3 and 4. When performed, jumper switch is turned ON.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
6	Check relays for Train A of Containment Isolation Phase A DEENERGIZED.	In the front of cabinet 2PA09J, CHECK the following relays DEENERGIZED: • K605. • K606. • K607. • K612. • K613. • K614.	___	___	___
NOTE	For Westinghouse (old style relays), the post will be OUT when de-energized. For Cutler Hammer (new Style relays), the post will be IN when de-energized.				
CUE	As relays are checked, state that each relay is in its current state.				
7	Remove jumpers (can be performed in any order).	In the rear of LOGIC cabinet 2PA09J, LOCATE and REMOVE jumpers as follows: ○ Jumper switches turned OFF. • Remove jumper from TB644. • Remove jumper from TB504.	___	___	___
CUE	Switches on jumpers are OFF. Jumpers are removed. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are an extra NSO.
2. An inadvertent SI occurred, and the crew transitioned from 2BwEP-0 to 2BwEP ES-1.1.
3. SI has been reset on both trains per step 1 of 2BwEP ES-1.1.

INITIATING CUE

1. You have been directed to reset Containment Isolation per step 2 of 2BwEP ES-1.1.

Exelon Generation

Job Performance Measure

Locally Start 2B AF Pump

JPM Number: IP-400S

Revision Number: 2020 NRC

Date: 10/29/19

Developed By:	Dan Burton /S/ Instructor	10/29/2019 Date
Validated By:	Dale Burchfield /S/ SME or Instructor	12/5/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/5/2019 Date
Approved By:	Dane Brunswick /S/	12/5/2019

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure BwOP AF-7 Rev: 49

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions

Revision 2011, Update to latest procedure revisions

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

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

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

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

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

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

Revision 2019, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2020 NRC, This JPM is a LORT bank JPM (N-107a). Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. N/A, In-Plant JPM.

JPM SUMMARY

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

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

JPM Title: **Locally Start 2B AF Pump**
JPM Number: **IP-400S** Revision Number: **2020 NRC**
Task Number and Title: **R-AF-001, Startup the Auxiliary FW System**
Task Standard: **Locally start both 2B AF pump lube oil pumps, start the 2B AF pump per BwOP AF-7 and then verify proper 2B AF pump operation.**
K/A Number and Importance: **EPEE05 EA1.1 - 4.1/4.0**
Suggested Testing Environment: **In-Plant**
Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s):

1. BwOP AF-7, Rev. 49, AUXILIARY FEEDWATER PUMP _B (DIESEL) STARTUP ON RECIRC

Materials:
1. BwOP AF-7

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 an extra NSO.
2. Unit 2 has just tripped in conjunction with an electrical fire in Unit 2 Remote Shutdown Panel.
3. 2A AF pump is OOS for maintenance.
4. 2B AF pump did NOT auto-start and cannot be manually started.
5. The crew has transitioned to 2BwFR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK.

INITIATING CUE

1. The US has directed you to perform a local emergency start of the 2B AF pump using BwOP AF-7, AUXILIARY FEEDWATER PUMP _B (DIESEL) STARTUP ON RECIRC.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1	Obtain copy of BwOP AF-7.	Locate and open BwOP AF-7.	___	___	___
CUE	After examinee locates procedure, provide a copy. If asked, another operator will perform BwOP AF-7T1.				
NOTE	**The examinee must perform steps F.11, F.12 and F.19 of BwOP AF-7 (steps 2-6 of the JPM) due to the warning on BwOP AF-7, page 8.**				
***2**	**Start Lube Oil pumps.**	START Lube Oil pumps at the Local Control Panel as follows: *(Procedure Adherence)* • **START Aux FW Pp 2B Gear Box Lube Oil Pp, 2AF01PB-C.** • **START Aux FW Pp 2B Lube Oil Pp, 2AF01PB-A.**	___	___	___
CUE	Gear box lube oil pump control switch is pointing to the right. Aux lube oil pump control switch is pointing to the right. If asked, on each lube oil pump start, pump/motor noise can be heard.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3	**Start 2B AF pump from the Local Control Panel.**	START 2B AF Pump from the Local Control Panel (2AF01J) as follows: *(Procedure Adherence)* • **PLACE the Engine Start Selector Switch to MANUAL.** • **DEPRESS and HOLD the START pushbutton.** ○ VERIFY Engine Starting Light indicates starting sequence is in process. ○ VERIFY Engine Running Light is ILLUMINATED when engine speed indicates 350 RPM. ○ RELEASE the START pushbutton. ○ CHECK engine speed between 1795-1845 RPM.	___	___	___
CUE	Engine Start Selector Switch is pointing to the left (MAN). If asked, the READY TO START is not lit. **NOTE:** In MAN position, this light will NOT be lit. Start pushbutton is being depressed and held. Engine start noises are heard. ENGINE STARTING light is lit. As RPM rises above 350 rpm, ENGINE RUNNING light is lit. Start pushbutton is released. Engine speed is 1805 rpm.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
4	Verify AF pump recirc flow > 85 gpm.	VERIFY AF pump recirc flow is > 85 GPM on 2FI-AF096.	___	___	___
NOTE	Large gray gauge located on wall to left of door.				
CUE	Recirc flow is 100 gpm.				
5	Verify 2SX178, SX Return Isol for 2B AF Pp Cooling Water – OPEN.	VERIFY 2SX178, SX Return Isol for 2B AF Pp Cooling Water – OPEN.	___	___	___
CUE	2SX178 is OPEN.				
6	Verify both Aux Lube Oil pump run lights NOT LIT.	Verify both Aux Lube Oil pump run lights NOT LIT: • Aux FW Pp 2B Gear Box Lube Oil Pp, 2AF01PB-C, RUN light – NOT LIT. • Aux FW Pp 2B Lube Oil Pp, 2AF01PB-A, RUN light – NOT LIT.	___	___	___
CUE	Aux FW Pp 2B Gear Box Lube Oil Pp, 2AF01PB-C, RUN light – NOT LIT. Aux FW Pp 2B Lube Oil Pp, 2AF01PB-A, RUN light – NOT LIT.				
CUE	An EO has arrived and will complete the remainder of the procedure. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are an extra NSO.
2. Unit 2 has just tripped in conjunction with an electrical fire in Unit 2 Remote Shutdown Panel.
3. 2A AF pump is OOS for maintenance.
4. 2B AF pump did NOT auto-start and cannot be manually started.
5. The crew has transitioned to 2BwFR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK.

INITIATING CUE

1. The US has directed you to perform a local emergency start of the 2B AF pump using BwOP AF-7, AUXILIARY FEEDWATER PUMP _B (DIESEL) STARTUP ON RECIRC.

Job Performance Measure

Locally Recover from a Loss of DC Bus 211

JPM Number: IP-601

Revision Number: 2020 NRC

Date: 10/30/19

Developed By:	Dan Burton /S/ Instructor	10/30/2019 Date
Validated By:	Frank Davito /S/ SME or Instructor	12/5/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/5/2019 Date
Approved By:	Dane Brunswick /S/	12/5/2019

Job Performance Measure

Locally Recover from a Loss of DC Bus 211

JPM Number: IP-601

Revision Number: 2020 NRC

Date: 10/30/19

Developed By:	Dan Burton /S/ Instructor	10/30/2019 Date
Validated By:	Frank Davito /S/ SME or Instructor	12/5/2019 Date
Reviewed By:	Jim Schneider /S/ Operations Representative	12/5/2019 Date
Approved By:	Dane Brunswick /S/	12/5/2019

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

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

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

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

_____ 4. Initial setup conditions are identified.

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

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

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

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure 2BwOA ELEC-1 Rev: 111

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

_____ 11. Verify performance time is accurate

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

_____ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

Revision Record (Summary)

Revision 2010, Change format and verify latest procedure revisions

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

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

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

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

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

Revision 2017, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

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

Revision 2019, Revision includes current revisions of referenced procedures and current revision of TQ-AA-150-J020 JPM Template.

Revision 2020 NRC, This JPM is a LORT bank JPM (N-034). Verified current revision of referenced procedure and current revision of TQ-AA-150-J020 JPM Template.

SIMULATOR SETUP INSTRUCTIONS

1. N/A, In-Plant JPM.

JPM SUMMARY

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

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

JPM Title: **Locally Recover from a Loss of DC Bus 211**
JPM Number: **IP-601** Revision Number: **2020 NRC**
Task Number and Title: **R-OA-007, Respond to a loss of DC power**
Task Standard: **Locally open the PMG Output breaker, then locally re-energize DC Bus 211.**
K/A Number and Importance: **APE058 AA1.03 - 3.1/3.3**
Suggested Testing Environment: **In-Plant**
Alternate Path: ☐Yes ☒No SRO Only: ☐Yes ☒No Time Critical: ☐Yes ☒No
Reference(s):
1. 2BwOA ELEC-1, Rev. 111, LOSS OF DC BUS UNIT 2

Materials:
1. 2BwOA ELEC-1, steps 16-26 (placekept through step 16.b)
2. Laser Pointer
3. Picture of PMG Output Breaker

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 Equipment Operator.
2. A loss of 125 VDC Bus 211 has occurred.
3. Unit 2 reactor was tripped.

INITIATING CUE

1. The Unit NSO directs you to locally trip the Unit 2 main generator PMG output breaker.

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

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	Due to safety concerns, the cabinet door for the U-2 main generator PMG output breaker will NOT be opened for this JPM (use picture). When performing these steps, simulate actions.				
NOTE	**If required, prompt the use of a laser pointer to show the location of actions inside electrical cabinets.**				
1	Locate U-2 Main Generator PMG Output Breaker.	Locate U-2 Main Generator PMG Output Breaker (426' J32 at 2MP09E).	___	___	___
NOTE	**Picture of PMG output breaker is to be used for the next step.**				
***2**	**Open PMG breaker cabinet door and depress the local trip pushbutton.**	Perform a local trip of the PMG output breaker as follows: *(Procedure Adherence)* • **Open PMG breaker cabinet door and depress the breaker trip pushbutton.** ○ Report to the MCR that you have locally tripped the Unit 2 PMG output breaker.	___	___	___
CUE	When the breaker is simulated tripped on the picture, indicate to the examinee that the U-2 Main Generator PMG output breaker displays Breaker Open. As the Unit 2 NSO, acknowledge the Unit 2 PMG output breaker trip.				
CUE	**AFTER the examinee has tripped the PMG output breaker, CUE the following:** • **The Control Room has ordered you to meet an extra SRO at DC Bus 211.** • **Once at DC Bus 211, the SRO informs you that EMD has completed meggering DC Bus 211 satisfactorily, and 2BwOA ELEC-1 Attachment A has been completed through step 16.b.** • **You need to continue restoration of DC Bus 211 per 2BwOA ELEC-1, Attachment A, starting at step 16.c.** • **Provide a copy of 2BwOA ELEC-1, Attachment A, steps 16-26.**				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
3	Refer to procedure 2BwOA ELEC-1 Attachment A, step 16.c.	• Locate and open 2BwOA ELEC-1 Attachment A to step 16.c. • Proceed to DC bus 211.	___	___	___
4	At DC Bus 211, check if power is available to DC Bus 211.	Check if power is AVAILABLE to DC Bus 211: ○ Battery charger 211 voltage > 110V DC on 2EI-DC030. - OR - ○ Battery 211 voltage > 110V DC. ○ Place the voltmeter switch (Cub CF1) to BAT. ○ Read battery voltage on BUS/CHGR VOLTMETER on 2EI-DC009.	___	___	___
CUE	2EI-DC030 = 128 VDC. When properly aligned, 2EI-DC009 = 129 VDC. If asked, breaker AF2 breaker status indication is BREAKER OPEN. If asked, breaker AF2 spring status indication is SPRING DISCHARGED.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
***5**	**Re-energize DC Bus 211.**	Re-energize DC bus 211 as follows: *(Procedure Adherence)* • **Close 125V DC Feed from Battery 211 breaker (Cub AF2).** ○ Check 125V DC feed from battery charger 211 (Cub AF1) in the ON position.	___	___	___
CUE	If informed, MCR acknowledges DC Bus 211 ready to be re-energized. After charging the AF2 breaker spring, if asked, breaker AF2 spring status indication is SPRING CHARGED. If asked, breaker AF2 breaker status indication is BREAKER CLOSED. If informed, MCR acknowledges DC Bus 211 is re-energized. 125V DC feed from battery charger 211 (Cub AF1) in ON position (12 o'clock position).				
CUE	After checking breaker AF1 status, inform examinee that another EO will continue in 2BwOA ELEC-1. This completes the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS

1. You are an extra Equipment Operator.
2. A loss of 125 VDC Bus 211 has occurred.
3. Unit 2 reactor was tripped.

INITIATING CUE

1. The Unit NSO directs you to locally trip the Unit 2 main generator PMG output breaker.


Breaker
Closed
Trip
Push
To
Close
Spring
Charged