Job Performance Measure

Locally Start-up the HPCI System to Control RPV Level

JPM Number: i

Revision Number: 0

Date:

Developed By:	_____	_____
	Instructor	**Date**
Validated By:	_____	_____
	SME or Instructor	**Date**
Review By:	_____	_____
	Operations Representative	**Date**
Approved By:	_____	_____
	Training Department	**Date**

JPM was not developed and was replaced before development.

Job Performance Measure

Energize the “B” RPS Bus with Reserve Power

JPM Number:

Revision Number:

Date:

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 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, or simulator)

_____ 4. Initial setup conditions are identified.

_____ 5. Initiating and terminating cues are properly identified.

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

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

_____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____

_____ 9. Pilot test the JPM:
a. verify cues both verbal and visual are free of conflict, and
b. ensure performance time is accurate.

_____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.

_____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

Job Performance Measure (JPM)

Revision Record (Summary)

1. **Revision 00,** This JPM is developed IAW guidelines established in NUREG 1021 Rev 8 ES-301 and Appendix C. This JPM meets the criteria of Category B.1 "Control Room Systems," for RO/SRO candidates.

   JPM revised to match procedure changes.

2. **Revision 01,** This JPM is being revised to reflect procedure revisions.

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Job Performance Measure (JPM)

INITIAL CONDITIONS

- Unit 1(2) is operating steady state at 30% power.
- The **"B" RPS bus is on its reserve power supply and will be placed on the "B" RPS MG set.**
- The control room has made preparations so that the RPS bus can be de-energized and transferred to the "B" RPS MG set (SRM shorting links are installed). No surveillances are in progress.
- All MSIV DC power indicating lights have been verified ON.
- HCU Scram pilot solenoid fuses at panel 2201(2)-22A are NOT blown.
- The circuit breaker for the main feed to the "B" MG set at MCC 19-2(29) - 2 is closed.
- The 1(2)-0595-107A and 1(2)-0595-107B relays have been verified energized.
- Step C.3 has been completed and all currents are 50 ma DC.
- This JPM is not time critical. Delete this!!!

INITIATING CUE
Place the Unit _____ "B" RPS bus on its reserve power supply.

Provide examinee with:

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 at the bottom of the page. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

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.

Job Performance Measure (JPM)

JPM Start Time: _____

	PERFORMANCE	OBJECTIVE STANDARDS	SAT UNSAT N/A
EVALUATOR: The candidate must call the control room to inform them that the "B" RPS bus is about to be de-energized, if so, provide the necessary cues.			
	Obtains procedure to use.	Selects QOP 7000-01.	[ ] [ ] [ ]
*F.1.b. (1)	Close Motor Starter control switch.	Positions Motor Starter control switch to close.	[ ] [ ] [ ]
*F.1.b.(3)	Place VOLTAGE TRANSFER SWITCH in GEN position	VOLTAGE TRANSFER SWITCH placed in GEN position.	[ ] [ ] [ ]
*F.1.b.(4)	Wait 60 seconds after starting RPS MG Set.	Ensure wait period of 60 seconds.	[ ] [ ] [ ]
*F.1.b.(4)	Press Auxiliary Reset Button and hold until voltage builds up (approximately 10 seconds).	Presses Auxiliary Reset Button and holds until voltage builds up.	[ ] [ ] [ ]
F.1.b.(5)(a)	Verify power to EPA 1(2) B-1.	Verifies EPA 1(2) B-1 "Power In" light lit.	[ ] [ ] [ ]
CUE: Point to "Power In" light and state: This light is lit.			
*F.1.b.(5)(b)	Close circuit breaker 1(2) B-1.	Positions 1(2) B-1 EPA breaker to close.	[ ] [ ] [ ]
F.1.b.(5)(c)	Verify POWER OUT indication lit.	Checks POWER OUT indication.	[ ] [ ] [ ]
CUE: Point to "Power Out" light and state: This light is lit.			
F.1.b.(6)(a)	Verify power to EPA 1(2) B-2.	Verifies EPA 1(2) B-2 EPA "Power In" light lit.	[ ] [ ] [ ]
CUE: Point to "Power In" light and state: This light is lit.			
*F.1.b.(6)(b)	Close circuit breaker 1(2) B-2.	Positions 1(2) B-2 EPA breaker to close.	[ ] [ ] [ ]

Job Performance Measure (JPM)

	PERFORMANCE	OBJECTIVE STANDARDS	SAT UNSAT N/A
F.1.b.(6)(c)	Verify POWER OUT indicator lit.	Verifies POWER OUT indication lit.	[ ] [ ] [ ]
CUE: Point to "Power Out" light and state: This light is lit. **EVALUATOR: The candidate may elect to call the control room to inform that the "B" RPS bus is about to be de-energized, if so, provide the necessary cues.**			
*F.1.b.(7)	Open reserve feed breaker.	At RPS "B" panel, opens reserve feed breaker.	[ ] [ ] [ ]
CUE: Breaker is open.			
*F.1.b.(9)	Close normal feed breaker.	Positions normal feed breaker to normal posittion.	[ ] [ ] [ ]
CUE: Breaker is closed.			
F.1.b.(10)	Verify RPS generator and bus voltages are normal.	Verify RPS generator and bus voltage is 114 to 121 VAC.	[ ] [ ] [ ]
CUE: Point to 118 VAC when meter is checked.			
*F.1.b.(11)	Lock the reserve feed breaker in the OFF position.	At RPS "B" panel uses key to "lock" reserve feed breaker in the OFF position.	[ ] [ ] [ ]
*F.1.b.(12)	Return key to Shift Manager's Key cabinet.	Returns key to cabinet.	[ ] [ ] [ ]
CUE: You have received a call from the Control Room stating they will have the NSO perform step F.4. **EVALUATOR: The candidate should inform you that the task is complete.**			

*CRITICAL STEP

JPM Stop Time:_____

Job Performance Measure (JPM)

Operator's Name: _____

Job Title: NLO RO SRO STA

SRO Cert Delete these!!

JPM Title: Energize the "B" RPS Bus with Reserve Power

JPM Number: LP-009-I Revision Number: 00

Task Number and Title:

SN-0500-P04 (Freq: LIC=I NF=I) Given an operating reactor plant following an inadvertent trip of an RPS MG set, place the RPS bus on reserve power, restart the MG set and transfer the RPS bus from reserve power to the MG set in accordance with QOP 7000-01.

K/A Number and Importance:

K/A:	**212000 A2.02**	**Rating:**	**3.7/3.9**
K/A:	**212000 G.2.1.30**	**Rating:**	**3.9/3.4**

Suggested Testing Environment: Plant

Actual Testing Environment: Simulator Plant
Control Room

Testing Method: Simulate **Faulted:** Yes No
Perform **Alternate Path:** Yes No

Time Critical: Yes No

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

References:

QOP 7000-01 Rev. 31, Reactor Protection System MG Sets

Job Performance Measure (JPM)

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

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

Comments:_____
_____
_____
_____
_____
_____
_____
_____
_____

Evaluator's Name: _____(Print)

Evaluator's Signature: _____ Date: _____

Job Performance Measure (JPM)

INITIAL CONDITIONS

- Unit 1(2) is operating steady state at 30% power.
- The “B” RPS MG set is being removed from service for repairs and the “B” RPS bus will be placed on its reserve power supply.
- The control room has made preparations so that the RPS bus can be de-energized and transferred to its reserve feed (SRM shorting links are installed). No surveillances are in progress.
- All MSIV DC power indicating lights have been verified ON.
- HCU Scram pilot solenoid fuses at panel 2201(2)-22A are NOT blown.
- The high side and low side reserve feed circuit breakers at MCC 15-2(25-2) are closed however, both the reserve feed EPA breakers are open.
- The 1(2)-0595-107A and 1(2)-0595-107B relays have been verified energized.
- Step C.3 has been completed and all currents are 50 ma DC.
- This JPM is not time critical.

INITIATING CUE
Place the Unit _____ “B” RPS bus on its reserve power supply.

Job Performance Measure

Start 1/2 RBCCW Pump and Heat Exchanger for Operation to Unit 1

JPM Number:

Date:

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE:	All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 and 11 below.

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_____ 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, or simulator)

_____ 4. Initial setup conditions are identified.

_____ 5. Initiating and terminating cues are properly identified.

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

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

_____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____

_____ 9. Pilot test the JPM:
a. verify cues both verbal and visual are free of conflict, and
b. ensure performance time is accurate.

_____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.

_____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

INITIAL CONDITIONS

- 1A RBCCW Pump is supplying RBCCW for Unit1.
- ½ RBCCW Pump and ½ RBCCW Heat Exchanger is to be put in service on Unit 1 to supplement the cooling loads already being supplied by 1A RBCCW Pump and Heat Exchanger.
- ½ RBCCW Pump and ½ RBCCW Heat Exchanger are not required for Unit 2 operation.
- Venting of the ½ RBCCW Heat Exchanger is not necessary.
- Desired RBCCW temperature is 80 degrees F.
- You have been instructed to place ½ RBCCW Pump and ½ RBCCW Heat Exchanger in service supplying cooling water to Unit 1.

INITIATING CUE

Place ½ RBCCW Pump and ½ RBCCW Heat Exchanger in service supplying cooling water to Unit 1.

Provide Examinee With:
A copy of QCOP 3700-02.

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.
- Denotes critical elements of a critical step.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section at the bottom of the page. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

JPM Start Time: __

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.4.b.(1)	Verify ½ RBCCW PMP U-2 SUCT VLV FROM UNIT 2 is locked closed.	Verifies that suction valve is locked closed.	___	___	___
CUE: If valve is not locked closed, indicate that the valve IS locked closed.					
F.4.b.(2)	Verify ½ RBCCW PMP U-2 DISCH VLV TO UNIT 2 is locked closed.	Verifies that discharge valve is locked closed.	___	___	___
CUE: If valve is not locked closed, indicate that the valve IS locked closed.					
*F.4.c.(1)	Open 1-3799-68, ½ RBCCW PMP U-1 SUCT VLV FROM UNIT1.	Opens suction valve.	___	___	___
CUE: ?					
*F.4.c.(2)	Open 1-3799-66, ½ RBCCW PMP U-1 DISCH VLV FROM UNIT1.	Opens discharge valve.	___	___	___
CUE: ?					
*F.4.d.	Throttle open ½-3799-150C, ½ RBCCW PMP VENT VLV.	Throttles open the vent valve.	___	___	___
CUE: ?					
*F.4.d.(1)	Close ½-3799-150C.	Verifies a continuous stream of water issues from the valve before closing the vent valve.	___	___	___
CUE: After valve is open for 10 seconds, indicate that water is streaming from the valve.					
*F.4.e.	Start ½ RBCCW Pump.	Starts pump at Panel 912-1.	___	___	___
CUE: Indicate at Panel that the pump start light indicates ON.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.4.e.	Verify that system pressure is greater than 40 psig.	Verifies system pressure.	___	___	___
CUE: Indicate that system pressure is approximately 55 psig.					
F.8.b.(1)	Verify 2-3799-84, ½ RBCCW HX U-2 SIDE RBCCW INLET VLV FROM UNIT 2 is locked closed.	Verifies that the inlet valve is locked closed.	___	___	___
CUE: If valve is not locked closed, indicate that the valve IS locked closed.					
F.8.b.(2)	Verify 2-3799-80, ½ RBCCW HX U-2 SIDE RBCCW OUTLET VLV TO UNIT 2 is locked closed.	Verifies that the outlet valve is locked closed.	___	___	___
CUE: If valve is not locked closed, indicate that the valve IS locked closed.					
*F.8.c.(1)	Open 1-3999-64 SERV WTR TO ½ RBCCW HX SV valve.	Opens 1-3999-64.	___	___	___
CUE: ?					
*F.8.c.(2)	Open 1-3999-68 SERV WTR TO TCV-1/2-3904 SV valve.	Opens 1-3999-68.	___	___	___
CUE: ?					
*F.8.c.(3)	Open 1-3999-67 SERV WTR FROM TCV-1/2-3904 SV valve.	Opens 1-3999-67.	___	___	___
CUE: ?					
F.8.e.	Flush Service Water through the ½ RBCCW Heat Exchanger.	Flushes Service Water through the ½ RBCCW Heat Exchanger for 10 minutes by adjusting the temperature controller setpoint and ensuring that TCV-1/2-3904 fully opens.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE: ?					
CUE: Indicate that 10 minutes has passed.					
F.8.e.(1)	Close TCV ½-3904.	Closes TCV ½-3904 by placing the temperature controller setpoint at high end, full scale, setting.			
CUE: ?					
*F.8.f.(1)	Open 1-3799-84, ½ RBCCW HX U-1 SIDE RBCCW INLET VLV.	Opens Heat Exchanger inlet valve.			
CUE: ?					
*F.8.f.(2)	Open 1-3799-80, ½ RBCCW HX U-1 SIDE RBCCW OUTLET VLV.	Opens Heat Exchanger outlet valve.			
CUE: ?					
*F.8.i	Set temperature controller for TCV ½-3904 to maintain 80 degrees F.	Sets temperature controller to 80 degrees F.			
CUE: Indicate that the temperature controller is now set to 80 degrees F.					
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Start 1/2 RBCCW Pump and Heat Exchanger for Operation to Unit 1.
JPM Number:
Task Number and Title:
Given that 1A RBCCW Pump and Heat Exchanger is already in service on Units 1, start 1/2 RBCCW Pump and Heat Exchanger for Operation to Unit 1 to supplement the flow already being provided.
K/A Number and Importance:
K/A: **Rating:**

Suggested Testing Environment: Plant

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

Testing Method: ☒ Simulate ☐ Perform
Alternate Path**:** ☐ Yes ☒ No
SRO Only**:** ☐ Yes ☒ No

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 45 minutes **Actual Time Used:** ____ minutes

References: QCOP 2300-08, Rev. 20, HPCI LOCAL MANUAL OPERATION

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

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

Comments:_____
_____
_____
_____
_____
_____
_____

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ Date: _____

INITIAL CONDITIONS

{Student Copy}

- 1A RBCCW Pump is supplying RBCCW for Unit1.
- ½ RBCCW Pump and ½ RBCCW Heat Exchanger is to be put in service on Unit 1 to supplement the cooling loads already being supplied by 1A RBCCW Pump and Heat Exchanger.
- ½ RBCCW Pump and ½ RBCCW Heat Exchanger are not required for Unit 2 operation.
- Venting of the ½ RBCCW Heat Exchanger is not necessary.
- Desired RBCCW temperature is 80 degrees F.
- You have been instructed to place ½ RBCCW Pump and ½ RBCCW Heat Exchanger in service supplying cooling water to Unit 1.

INITIATING CUE

Place ½ RBCCW Pump and ½ RBCCW Heat Exchanger in service supplying cooling water to Unit 1.