Job Performance Measure

Perform the MSIV Closure Timing Test

JPM Number:

Date:

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST
DELETE THIS Page!!!

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

CR JPM a.doc

Job Performance Measure (JPM)

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC <u>19</u> (rst __).

2. **IC Description:** The unit is operating < 75% power and < 97% FCL ~ 680 Mwe.

   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.

3. Run the setup Computer Aided Exercise _____-__ (jcae! _____-__)

4. **Manual Actuation:**

   Reduce power as necessary to ensure plant is less than 75%. ($\approx$ 680 Mwe) and <97% FCL.

   Annotate QCOS 0250-04 to indicate testing of AO 1-203-1A and AO 1-203-1B only. (Add second valve)

5. **Malfunctions:**

   Slow stroke 1-203-1B, valve strokes at >5.2 seconds. First valve times OK!

6. **Remotes:**

   None.

7. **Overrides:**

   None.

8. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs using the JPM Validation Checklist.

9. This completes the setup for this JPM.

Job Performance Measure (JPM)

INITIAL CONDITIONS

- The unit is operating at _____ power.

- The Unit Supervisor has directed the MSIV Closure Timing Test be performed on AO 1-203-1A due to a previous slow closure time.

- There are no personnel in the MSIV Room.

- This JPM is not time critical. Delete this!

INITIATING CUE

Perform the MSIV Closure Timing surveillance on AO 1-203-1A and AO 1-203-1B, (add this) IAW QCOS 0250-04.

Provide examinee with:

QCOS 0250-04 with steps D.1.a., b., & c. filled in, annotated for testing of MSIV AO 1-203-1A and MSIV AO 1-0250-04 (?) only in step D.1.b.

Electronic Stopwatch.

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
D.2.a.	Reactor power is <75%.	Verifies Reactor power <75%.	[ ]	[ ]	[ ]
D.2.b.	Flow control line is <97%.	Verifies FCL <97%.	[ ]	[ ]	[ ]
*H.1.a.	Determine that MSIV will be tested using "hot" criteria.	Determines that proper criteria for testing is "hot" criteria.	[ ]	[ ]	[ ]
H.2.a.	Activate "MSIV Test Mode" at Operator Work Station FWLC Measuring Point Display.	Activates "MSIV Test Mode."	[ ]	[ ]	[ ]
H.2.b.	Verify reactor level maintained	Observe water level ind. stable	[ ]	[ ]	[ ]
H.2.c.	Verify that "sum of individual steam flows" being used for total steam flow.	Verifies that green filled square at the DWS FWLL measuring point display labeled as "Act" indicated "sum of individual steam flows".	[ ]	[ ]	[ ]
H.3.a.	Verify open AO 1-203-1A.	Verifies AO 1-203-1A is open.	[ ]	[ ]	[ ]
*H.3.b.	•Close and time AO 1-203-1A.•	AO 1-203-1A Normal Control Switch positioned to close AND stop watch actuated to time the valve stroke.	[ ]	[ ]	[ ]
EVALUATOR NOTE: The stopwatch must be started at same time as control switch actuation.					
H.3.c.	Record closure time on Attachment "A".	Records closure time on step H.3.b. to nearest 1/100 of a second.	[ ]	[ ]	[ ]
CUE: Inform candidate that "Switch to Light" time for the MSIV is 5.1 seconds. Delete this, he should be able to read a stop watch!!					

Job Performance Measure (JPM)

	PERFORMANCE	OBJECTIVE STANDARDS	SAT UNSAT N/A
Add duplicate steps for stroking 'B' MSIV. 'B' MSIV will slow stroke!			
Attachment A	Unit Supervisor to evaluate whether valve is to be re-adjusted or retested.	Unit Supervisor evaluates.	[ ] [ ] [ ]
EVALUATOR: JPM will end with recognition by candidate that either further testing or valve adjustment is necessary before proceeded.			

*CRITICAL STEP

JPM Stop Time:_____

- -

Job Performance Measure (JPM)

Operator's Name: _____

Job Title: NLO RO SRO <mark>STA</mark> <mark>Delete!</mark>
<mark>SRO Cert Delete!</mark>

JPM Title: Perform the MSIV Closure Timing Test

JPM Number: _____ Revision Number: _____

Task Number and Title:

Given a reactor plant at power, conduct MSIV closure timing in accordance with QCOS 0250-04.

K/A Number and Importance:

K/A: 239001 A4.01 **Rating: 4.2/4.0**

Suggested Testing Environment: Simulator

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: <u>12</u> minutes **Actual Time Used:** _____ minutes

References:
QCOS 0250-04 Rev. 15, MSIV Closure Timing

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

(Student Copy)

- The unit is operating at _____ power.

- The Unit Supervisor has directed the MSIV Closure Timing Test be performed on AO 1-203-1A and AO 1-203-1B due to a previous slow closure time.

- There are no personnel in the MSIV Room.

- This JPM is not time critical. Delete!

INITIATING CUE

Perform the MSIV Closure Timing surveillance on AO 1-203-1A, IAW QCOS 0250-04.

Job Performance Measure

Roll The Turbine

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.

_____ 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

- The Control Room is performing a Unit 1 startup IAW QCGP 1-1, Normal Unit Startup.

- QCGP 1-1 has been performed up through and including F.7.r.

- First Stage Bowl upper inner surface temperature is greater than 360 degrees F.

- You have been instructed to roll the turbine and achieve a speed of 1800 rpm.

INITIATING CUE

Roll the Main Turbine and achieve a speed of 1800 rpm.

Provide Examinee With:
A copy of QCGP 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.

• 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
CUE: The announcement has just been made for the impending Main Turbine roll.					
*F.7.t.	Press FAST pushbutton on STARTUP RATE.	Depresses the FAST pushbutton on the 901-7 panel.	___	___	___
*F.7.u.	Press the 1800 rpm pushbutton on SPEED SET RPM.	Depresses the 1800 rpm pushbutton.	___	___	___
F.7.u.(1)	Verify that MAIN STOP VLV #2 opens.	Verifies MAIN STOP VLV #2 opens.	___	___	___
F.7.u.(2)	Verify that MAIN STOP VLVs #1, #3, and #4 ramp open.	Verifies that MAIN STOP VLV #2 reaches 100% open and then MAIN STOP VLVs #1, #3, and #4 begin to ramp open.	___	___	___
F.7.u.(3)	Verify COMBINED INTER STOP VLVs #1, #3, and #5 ramp open.	Verifies COMBINED INTER STOP VLVs #1, #3, and #5 begin to ramp open.	___	___	___
F.7.u.(4)	Verify COMBINED INTER STOP VLVs #2, #4, and #6 ramp open.	Verifies COMBINED INTER STOP VLVs #1, #3, and #5 reach 100% open and then COMBINED INTER STOP VLVs #2, #4, and #6 begin to ramp open.	___	___	___
F.7.u.(5)	Verifies CONTROL VLVs open.	After all MAIN STOP VLVs and COMBINED INTER VLVs are full open, verifies CONTROL VLVs opens and rolls the Turbine off the turning gear.	___	___	___
* F.7.v.	Press 180 RPM/Minute startup rate.	180 RPM/Minute startup rate depressed.	___	___	___
EVALUATOR: Candidate should select startup speed of 180 RPM/Minute based upon greater than 350 degrees First Stage Bowl upper inner surface temperature.					
F.7.w.	Verify that the Main Turbine is accelerating.	Verifies Main Turbine is accelerating at 180 RPM/Minute.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.7.x.	Verify Chest Warming has stopped.	Verifies that Chest Warming goes to zero as indicated on MAIN STOP VLV POS DEMAND FOR CHEST/SHELL WARMING indication.	___	___	___
F.7.y.	Ensure that Main Turbine vibration is acceptable.	Checks Main Turbine vibration on recorder 1(2)-5640-60, ECCENTRICITY AND VIBRATION, during acceleration.	___	___	___
EVALUATOR: Vibration monitor should read less than 10 mils.					
CUE: If vibration monitor is not reading less than 10 mils or has no signal, tell candidate that vibration monitor is indicating 8 mils.					
*F.7.z.	At critical speed, select FAST on STARTUP RATE.	When Main Turbine speed approaches the critical speed, select FAST on STARTUP RATE.	___	___	___
EVALUATOR: For Unit 1, critical speed is approximately 950 rpm; for Unit 2, critical speed is approximately 1100 rpm.					
*F.7.aa.	After the critical speed, depress 180 RPM/Minute startup rate.	Depresses the 180 RPM/Minute startup rate pushbutton after the Main Turbine has passed through the critical speed.	___	___	___
F.7.ab.	Verify the Turning Gear Motor is off.	Verifies that the Turning Gear Motor is off.	___	___	___
F.7.ac.(1)	Verify Turbine oil temperature is approximately 115 degrees F on TI 1(2)-5140-14, OIL COOLER OUTLET TEMP.	After Turbine speed levels out at approximately 1800 rpm, verifies turbine oil temperature.	___	___	___
F.7.ac.(1)	Verify that Turbine vibrations are less than 5 mils.	Turbine vibrations verified less than 5 mils.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
Add: Comment: Candidate will check vibration monitor at this step. If vibration monitor is not reading less than 5 mils or has no signal, tell candidate that vibration monitor is indicating 4 mils. **Delete!**					
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

Job Title: ☐ NLO ☐ RO ☐ SRO <mark>☐ STA ☐ SRO Cert Delete these</mark>

JPM Title: Roll the Main Turbine

JPM Number:

Task Number and Title:

Given that the plant is starting up and QCGP 1-1 has been completed up to and including stepF.7.r, roll the Main Turbine and achieve a speed of 1800 rpm.

K/A Number and Importance:

K/A: 295031.EA1.02   **Rating:**   4.5 / 4.5

Suggested Testing Environment: Plant

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

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

Time Critical: ☐ Yes   ☒ No

Estimated Time to Complete: _27_ 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}

- The Control Room is performing a Unit 1 startup IAW QCGP 1-1, Normal Unit Startup.

- QCGP 1-1 has been performed up through and including F.7.r.

- First Stage Bowl upper inner surface temperature is greater than 360 degrees F.

- You have been instructed to roll the turbine and achieve a speed of 1800 rpm.

INITIATING CUE

Roll the Main Turbine and achieve a speed of 1800 rpm.

Exelon Nuclear

Job Performance Measure

Perform the SBGT Monthly Operability Test With Failure of the Heater to Turn Off After Shutdown

JPM Number: <u>LS-042-I-F</u>

Revision Number: <u>10</u>

Date: <u>06/30/05</u>

Developed By: _____   _____
                       Instructor   **Date**

Validated By: _____   _____
                       SME or Instructor   **Date**

Review By: _____   _____
                       Operations Representative   **Date**

Approved By: _____   _____
                       Training Department   **Date**

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JOB PERFORMANCE MEASURE VALIDATION CHECKLIST
<mark>DELETE THIS PAGE!</mark>

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

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_____ 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

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Revision Record (Summary)

1. **Revision 6,**   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.

2. **Revision 7,**   JPM updated to reflect procedure changes.

3. **Revision 8,**   JPM updated to reflect procedure changes.

4. **Revision 9,**   This JPM is being revised to reflect new format changes, using Local Indicators for data, stopping JPM after Fault and procedure changes.

5. **Revision 10,**   JPM updated to reflect procedure changes and new estimated completion time.

<u>Delete this page too!</u>

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC <u>ANY</u> (rst __).

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. Run the setup Computer Aided Exercise _____-__ (jcae! _____-__)

3. **Manual Actuation**:

   SBGT Systems are lined up and in standby. On the 912-5 panel the mode select switch for the "A" is in STBY and "B" train is in the PRIM position.

   Malfunctions: NONE

   Remotes: NONE

   Overrides:

   Insert the following in order to simulate a failure of the heater to trip following train shutdown:
   trg 10 SBGBHTRON
   ior loil07503b2(10) ON
   ior loil07503b1(10) OFF

4. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs using the JPM Validation Checklist.

5. This completes the setup for this JPM.

This JPM must be able to run in parallel with other JPMs!

INITIAL CONDITIONS

- The plant is operating at _____ power.
- The SBGT systems are lined up for standby in accordance with QCOP 7500-01.
- Radiation Protection has been notified that SBGT will be started.
- NLO stationed at 1/2B SBGT for local actions.

INITIATING CUE

Perform the SBGT System Monthly Operability Test for the 1/2B train per QCOS 7500-05.

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.

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
H.2.a.	Record "B" SBGT start time.	Records current time.	___	___	___
H.2.b.	Verify open U-1 RB INLET DMPR TO SBGT AND/OR U-2 RB INLET DMPR TO SBGT	Determines both 1-7503 and 2-7503 are open by open lights being lit.	___	___	___
*H.2.c.	•Start "B" SBGTS.•	Positions "B" train mode selector switch to START.	___	___	___
H.2.d.(1)	Verify **closed** TURB BLDG CLG AIR DMPR.	Verifies 1/2-7504B CLOSED light lit.	___	___	___
H.2.d.(2)	Verify **open** INLET DMPR.	Verifies 1/2-7505B OPEN light lit.	___	___	___
H.2.d.(3)	Verify **on** SBGT AIR HTR.	Verifies 1/2-7503B ON light lit.	___	___	___
H.2.d.(4)	Verify **on** 1/2B SBGT FAN.	Verifies ½-7506B ON light lit.	___	___	___
H.2.d.(5)	Verify **open** SBGTS FAN DISCH DMPR.	Verifies 1/2-7507B OPEN light lit.	___	___	___
H.2.e.	Verify proper SBGTS flow.	Verifies 1/2-7541-13B indicates 3600-4400 scfm and records flow H.2.e.(1)	___	___	___
CUE: Inform the operator that 5 hours have passed.					
SIM OP NOTE: Override the 1/2B SBGT heater ΔT temp to 23°F by inserting override aoti 1754012b 58					
H.2.f.(1)	Record 1/2B SBGTS flow.	Records 1/2B SBGTS flow from 1/2-7541-34b	___	___	___
H.2.f.(2)	Determine 1/2B SBGTS inlet temp.	Remotely from SBGTS B heater diff. temp indicator on Panel 912-5 **OR** TI ½-7540-12B.	___	___	___
CUE: SBGT DT is 23°F.					
		Directs NLO to obtain "B" train upstream temp. from TI 1/2-7541-10B and records after cue.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE: "B" train upstream temperature is 82°F as indicated on TI-1/2-7541-10B.					
	Determine 1/2B SBGTS outlet temp.	Directs NLO to obtain "B" train outlet temp. from TI 1/2-7541-13B and records after cue.	___	___	___
CUE: "B" train downstream temperature is 105°F.					
EVALUATOR: If the operator questions the fact that TI-1/2-7540-12B does not indicate near 23°F, inform him/her that this is due to the JPM time compression.					
*	•Calculate heater dT.•	Determines htr dT is 23°F by subtracting inlet temp. from outlet temp. and records.	___	___	___
EVALUATOR: Sign the "verification by" for heater ΔT.					
H.2.g.	Determine htr differential temperature > 14°F.	Determines htr dt > 14°F. Checks step H.2.g.	___	___	___
H.2.h.	Record Demister dP (.95 ± .05(ave), 2.0(init WR) 1/2-7541-9B	Directs NLO to obtain and report Demister dP. Records on surv.	___	___	___
CUE: dP is 1.0 as indicated on the ½-7541-9B.					
H.2.i.	Record Rough Prefilter dP(.2(ave), 2.0(init IR)) ½-7541-12B	Directs NLO to obtain and report Rough Prefilter dP. Records on surv.	___	___	___
CUE: dP is 0.3 as indicated on the ½-7541-12B.					
H.2.j.	Record High Eff. Prefilt. dP(1.0(ave), 1.8(init. IR) ½-7541-14B	Directs NLO to obtain and report High Eff. Prefilt. dP. Records on surv.	___	___	___
CUE: dP is 1.1 as indicated on the ½-7541-14B.					
H.2.k.	Record Carbon Iodine Absorb. dP (.95 ± 15(ave), 2.0(init IR), 1/2-7541-16B	Directs NLO to obtain and report Carbon Iodine Absorb dP. Records on surv.	___	___	___
CUE: dP is 0.9 as indicated on the ½-7541-16B.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
H.2.1.	Record HEPA filter dP (1.0(ave), 1.8(init IR) 1/2-7541-18B	Directs NLO to obtain and report HEPA Filter dP. Records on surv.	___	___	___
CUE: dP is 1.0 as indicated on the ½-7541-18B.					
H.2.m.	Calculate total Differential Pressure.	Calculates total dP to be 3.3". Records on surv. Has number second verified.	___	___	___
EVALUATOR: Sign the verification for the Total DP.					
H.2.n.	Verify Total DP for SBGTS B is less than 6.0 inches of water.	Verifies total dP to be 3.3". Marks on surv.	___	___	___
H.2.o.	Perform an inspection of the SBGTS train to identify any discernable signs of leakage.	Directs the NLO to perform the inspection.	___	___	___
CUE: As the NLO, report that you do not see any discernable signs of leakage.					
CUE: "B" train has now been running for 10 hours. Secure "B" SBGTS.					
*H.2.p.	•Shutdown "B" SBGTS.•	Positions "B" train mode selector switch to OFF.	___	___	___
EVALUATOR: In the next step, if the operator asks for the US, inform him that he is around the back panels of U-1.					
*CAUTION	•Recognize failure of htr to turn off and restarts "B" SBGT Train.•	Recognizes "B" train air htr ON light lit for > 10 seconds THEN Restarts train by positioning "B" train mode selector switch to START.	___	___	___
	Inform US.	Tells the US that the htr did not stop after shutting down the train and the train was restarted.	___	___	___
CUE: I understand the heater failed to trip following train shutdown. Leave the "B" train operating. I will prepare a work request and call maintenance to trouble shoot and inform the SM and leave 'B' SBGT running until troubleshooting can commence.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE: The candidate may inform you the task is complete here.					
H.2.q.	Place 1/2 B Train in PRIM.	Positions 1/2B SBGT selector switch to PRIM.	___	___	___
H.2.r.(1)	Record stop time.	Records start time + 10.5 hours.	___	___	___
CUE: Give the candidate a time that is 10 hrs and 30 minutes later than the original time					

JPM Stop Time: _____

Operator's Name: _____

Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Perform the SBGT Monthly Operability Test with Failure of the Heater to Turn Off After Shutdown

JPM Number: LS-042-I-F Revision Number: 10

Task Number and Title: **SR-7500-P01** (Freq: LIC=B) Given SBGTS in a standby lineup, perform the monthly SBGTS monthly operability test and return SBGTS to a standby line up in accordance with QCOS 7500-05.

K/A Number and Importance:

K/A: 261000 A.3.04 **Rating: 3.0/3.1**

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: _17.5_ minutes **Actual Time Used:** _____ minutes

References: QCOS 7500-05, Rev. 26, SBGTS MONTHLY OPERABILITY TEST

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

- The plant is operating at _____ power.
- The SBGT systems are lined up for standby in accordance with QCOP 7500-01.
- Radiation Protection has been notified that SBGT will be started.
- NLO stationed at 1/2B SBGT for local actions.

INITIATING CUE

Perform the SBGT System Monthly Operability Test for the 1/2B train per QCOS 7500-05.

Job Performance Measure

Control Reactor Water level using RCIC

JPM Number:

Date:

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST
Delete this?

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

1. INITIAL CONDITIONS

- A plant transient has occurred which has resulted in the entry of QGA 100, RPV Control.

- The Reactor is scrammed and all rods have completely inserted.

- RPV level is at + 3" and stable.

- All Feedwater Pumps, HPCI, and RCIC are currently tripped due to previously receiving a Reactor Vessel Water Level – High signal.

- The Unit Supervisor requests that U1(2) RCIC be placed in service and used to restore RPV level to + 25" per QGA 100, RPV Level Control.

INITIATING CUE

Control RPV water level IAW QCOP 1300-02 using RCIC for injection to the RPV.
<mark>Hard Cards authorized? Do not start by pushing the start button!!! OR authorize use of RCIC PB but have PB fail. (alternate path) they will then start it using manual method!!</mark>

Provide examinee with:

QCOP 1300-02

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.

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.

- -

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	Provide candidate with copy of QCOP 1300-02.				
	EVALUATOR: Candidate should recognize that QCO) 1300-02 is not immediately applicable. Trip Recovery should initially be accomplished by QCOA 1300-01.				
*D.4	Depress INITIATION SIGNAL SEAL-IN AND RESET. <mark>NO! We should let them start it by manually operating these components not by simply pressing the push button!</mark>	Depresses INITIATION SIGNAL SEAL-IN AND RESET pushbutton.	___	___	___
	EVALUATOR: Candidate should now enter back into procedure QCOP 1300-02.				
F.4.b.	<mark>Verify</mark> the turbine vacuum pump has auto-started.	Verifies the turbine vacuum pump has auto-started.	___	___	___
F.4.c.	<mark>Verify</mark> open MO 1(2)-1301-61, STM TO TURB VLV.	Verifies MO 1(2)-1301-61 is open.			
F.4.d.	<mark>Verify</mark> RCIC turbine speed increasing.	Verifies RCIC turbine speed is increasing.			
F.4.e.	<mark>Verify</mark> open MO 1(2)-1301-60, MIN FLOW VLV.	Verify that MO 1(2)-1301-60 opens.			
F.4.f.	<mark>Verify</mark> closed AO 1(2)-1301-34 and 35, STM LINE DRAIN ISO VLVS.	Verify that AO 1(2)-1301-34 and 35 are closed.			
F.4.g.	<mark>Verify</mark> open MO 1(2)-1301-62, TURB CLG WTR VLV.	Verify that MO 1(2)-1301-62 is open.			
F.4.h	<mark>Verify</mark> open MO 1(2)-1301-48, PMP DISCH VLV.	Verify that MO 1(2)-1301-48 is open.			

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.4.i.	Verify open MO 1(2)-1301-49, PMP DISCH VLV.	Verify that MO 1(2)-1301-49 is open.			
F.4.j.	Verify RCIC Pump discharge flow increases to 400 gpm .	Verifies on FIC 1(2)-1340-1, PCIC FLOW CONTROLLER, that RCIC Pump discharge flow increases to 400 gpm.			
F.4.k.	Verify closed MO 1(2)-1301-60, MIN FLOW VLV.	Verify that MO 1(2)-1301-60 is closed.	___	___	___
*F.4.m	Adjust flow to achieve +25 inches water level.	Adjusts flow IAW step F.4.m to achieve +25 inches.			
	EVALUATOR: Candidate should raise level in a controlled manner to achieve approximately +25 inches level.				
	EVALUATOR: The candidate should inform you that the task is complete.				

JPM Stop Time: _____

VERIFY, VERIFY …. Verify! We must ensure they know how to start this system using panel switches!!!! Write this up using the lower half of the hard card!

Operator's Name: _____

Job Title: ☐NLO ☐ RO ☐ SRO <mark>☐ STA ☐ SRO Cert Delete these, not a license position</mark>

JPM Title: Resetting RCIC Isolation and Turbine Trip for Local Operations

JPM Number:

K/A Number and Importance:

K/A: 217000 A2.02 **Rating:** 3.8 / 3.7

Suggested Testing Environment: Plant

Actual Testing Environment: ☒ Simulator ☐ Control Room

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

Time Critical: ☐ Yes ■ No

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

References: QCOP 1300-09, Rev. 17, RCIC 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}

- A plant transient has occurred which has resulted in the entry of QGA 100, RPV Control.

- The Reactor is scrammed and all rods have completely inserted.

- RPV level is at + 3" and stable.

- All Feedwater Pumps, HPCI, and RCIC are currently tripped due to previously receiving a Reactor Vessel Water Level – High signal.

- The Unit Supervisor requests that U1(2) RCIC be placed in service and used to restore RPV level to + 25" per QGA 100, RPV Level Control.

INITIATING CUE

Control RPV water level IAW QCOP 1300-02 using RCIC for injection to the RPV.

QCNPS-JOB PERFORMANCE MEASURE

Operator's Name _____
(print)
THIS JPM IS IN A DIFFERENT FORMAT THAN OTHER JPMs
AFTER ONSITE VALIDATION, PUT IN SAME FORMAT AS OTHER JPMs.
JPM: LS-016-II   Rev: 5   Revision by: _Loren Mischke_

Station Approval:_____ Date:_____
(Ops Training Group Leader)

Operations Review:_____ Date:_____

Task Title:Bypass the Rod Worth Minimizer

Task References: S/R-0207-TP003K/A:201006 A3.02 Rating:3.5/3.4
K/A:201006 A4.01 Rating:3.2/3.4

License: NLO/RO/SRO   Suggested Testing Environment: **Simulator**
(Circle One)

Actual Testing Environment: Simulator ___   Plant ___   CR ___

Testing Method: Simulate ____   Perform ____

Estimated Time to Complete: **8.0 min.   STOP Time**   _____
                                           START Time   _____
Time Critical: NO __X__   YES _____   **ACTUAL Time**   _____

References:QCOP 207-2 Rev. 2ROD WORTH MINIMIZER BYPASS CONTROL

EVALUATION SUMMARY

1. Was the JPM completed within the maximum allotted time?

YES _____ NO _____

2. Was reasonable progress made at the maximum allotted time?

YES _____NO _____

3. Were all of the CRITICAL elements performed satisfactorily?

YES _____NO _____

The operator's performance is determined to be:

Satisfactory _____Unsatisfactory _____

COMMENTS/REMEDIATION: __Procedure revision does not change the
    content of this JPM__

__Evaluator's Name:_____

QCNPS-JOB PERFORMANCE MEASURE

<u>**PERFORMANCE OBJECTIVE**</u>   <u>**STANDARDS**</u>   <u>**SAT**</u>   <u>**UNSAT**</u>

<u>N/A</u>

      Signature:_____   Date:_____
          JPM SIMULATOR SETUP REQUIREMENTS

JPM: LS-16-II

IC#: 21 (or any other that will support this task.)

IC Description:The unit is operating at near rated power.

Manual Actuations:-Prepare a Caution Card IAW QOP 207-2 step F.2.a.
-Obtain a copy of OD-7, option 2 before putting in   the below
            malfunction and overrides.
         -Verify RWM blocks enabled to full.

Malfunctions:RD 19; FAILURE OF ALL RPIS INPUTS TO THE RWM
(imf rd19)

Remotes: NONE

Overrides:"A" and "B" RWM ready light.
        (ior zlohs10207ardy off)
        (ior zlohs10207brdy off)

QCNPS-JOB PERFORMANCE MEASURE

	PERFORMANCE OBJECTIVE	**STANDARDS**	**SAT**	**UNSAT**
N/A				

QCNPS-JOB PERFORMANCE MEASURE

INITIAL CONDITIONS

-Reactor power is _____ percent of rated and in the process of a
     normal unit shutdown.
-RWM MODE SWITCH is in NORMAL.
-RWM TRANSFER SWITCH is selected to "A", with the "A" ON LINE light
     lit.
-Both RWM "A READY" and "B READY" lights are extinguished.
-Annunciator 901-5-B-3, ROD WORTH MIN BLOCK is illuminated.
-This JPM is not time critical Delete this!

Initiating Cue: Bypass the Rod Worth Minimizer IAW QCOP 207-2, due to
               failed RPIS inputs.

START TIME _____

Provide examinee with: QCOP 207-2, now, and a copy of OD-7, option 2,
                  when directed by cue.

Follow-up question:

Candidate's Answer:

Follow-up question:

Candidate's Answer:

Follow-up question:

Candidate's Answer:

Additional Questions/Comments:

QCNPS-JOB PERFORMANCE MEASURE

PERFORMANCE OBJECTIVE		STANDARDS	SAT	UNSAT
N/A				
F.1.a.	Determines that both RWM computers are inoperable.	Initials the blank provided for step F.1.a.	[]	[]
F.2.a.	Prepare a Caution Card to read, "RWM IN BYPASS."	Asks US for Caution Card and attaches card to Rod Movement Control Switch.	[]	[]

CUE:Provide the prepared Caution Card to the Examinee when requested.

*F.2.b.	Place the RWM switch in bypass.	Moves the RWM mode switch to bypass.	[]	[]
F.2.b.	Sign off step as complete.	Enters date, and time in the blank provided.	[]	[]
F.3.(1)(a)	Demands OD-7 Option 2 from the process computer.	Obtains printout of OD-7 and attaches to the procedure and initials step F.3.(1)(a).	[]	[]

EVALUATOR: Provide the operator with a copy of OD-7, Option 2.

F.3.(2)	Verifies rod pattern is correct.	Compares rod positions in the previous group moved	[]	[]

QCNPS-JOB PERFORMANCE MEASURE

PERFORMANCE OBJECTIVE	**STANDARDS**	**SAT**	**UNSAT**

N/A

          and
the present group
          and
the next group to
be moved to the
OD-7 printout of
positions
          and
initials step
F.3.(2).

**EVALUATOR: The candidate should inform you that he has completed the
task.**

Stop Time: _____

QCNPS-JOB PERFORMANCE MEASURE

<u>CANDIDATE'S COPY</u>

<u>INITIAL CONDITIONS</u>

-Reactor power is _____ percent of rated and in the process of a
    normal unit shutdown.
-RWM MODE SWITCH is in NORMAL.
-RWM TRANSFER SWITCH is selected to "A", with the "A" ON LINE light
    lit.
-Both RWM "A READY" and "B READY" lights are extinguished.
-Annunciators 901-5-B-3, ROD WORTH MIN BLOCK is illuminated.
-This JPM is not time critical

Exelon Nuclear

Job Performance Measure

Shutdown the U-1 Diesel Generator with Early Trip

JPM Number: <u>LS-035-I-F</u>

Revision Number: <u>05</u>

Date: <u>09/06/05</u>

Developed By: _____   _____
         Instructor   **Date**

Validated By: _____   _____
         SME or Instructor   **Date**

Review By: _____   _____
         Operations Representative   **Date**

Approved By: _____   _____
         Training Department   **Date**

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST
DELETE THIS PAGE!

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

CR JPM f.doc

Revision Record (Summary)

1. **Revision 01,**   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.

2. **Revision 02,**   JPM revised to reflect procedure changes.

3. **Revision 03,**   JPM revised to reflect editorial changes to Setup Instructions.

4. **Revision 04,**   JPM revised to update expected completion time based upon JPM usage. JPM verified correct to Revision 18 of reference procedure QCOP 6600-03 Revision 18. Revision also incorporated noted pen and ink changes.

5. **Revision 05,**   JPM revised to clarify notes and cues.

<u>DELETE THIS PAGE!</u>

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC <u>21</u> (rst <u>21</u>).

2. **IC Description:** 100%

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.

3. Run the setup Computer Aided Exercise _____-__ (jcae! _____-__)

4. **Manual Actuations:**

   - Start-up, synchronize, and load the U-1 diesel generator to 1000 kw and 500 Kvars in accordance with QCOP 6600-02 F.2.c-j.

5. **Malfunctions:**

   a) Override annunciators OFF

   - imf ano9018a7 off
   - imf ano9018g8 off

   b) Set Triggers 11, 12, and 14 to automatically trip the diesel 30 seconds after the C/S is taken to stop and then delete the trip malfunction when the C/S is taken back to start

   - trgset 11 '.not.an:9018b7'
   - trg 11 'imf dg01a (none 30)'
   - trgset 12 'zdihs16600strt(1).and..not.an:9018b7'
   - trg 12 'dmf dg01a'
   - trgset 13 'zdihs16600strt(1).and..not.an.9018b7'
   - trg 13 'mrf dg03r reset'
   - trgset 14 '.not.an:9018b7'
   - trg 14 'imf ano9018b7 off'

6. **Remotes:**

   - Set the U-1 Diesel Speed Droop to 50. (**mrf dg01r 1**)

   - After the Diesel is running, reset the local DG annunciator panel. (**mrf dg18r 1**)

- Set the speed droop to "0" when requested by the evaluator, after the operator opens the output breaker. (**mrf dg01r 0**)

7. **Overrides:** NONE

8. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs using the JPM Validation Checklist.

9. This completes the setup for this JPM.

INITIAL CONDITIONS

- You are the U1 Assist NSO.
- Transformer 12 had been taken Out-of-Service for Substation Construction.
- The Unit and ½ Diesel generators had been supplying their emergency busses.
- Transformer 12 has just been repaired, returned to service, and energized, supplying busses 12 and 13.
- The ½ diesel has been shutdown and bus 13-1 is now being supplied with its normal feed, bus 13.
- Bus 14-1 is now energized from its normal power supply however the U-1 diesel is still running in parallel with the grid.
- The Shift Manager has authorized taking the U-1 diesel off.
- The NLO has set the Speed Droop to 50.
- This JPM is not time critical. DELETE THIS STATEMENT!

INITIATING CUE

Unload and shut down the U1 EDG per QCOP 6600-03. Notify the Unit Supervisor at the completion of the cooldown.

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.

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
	Obtain procedure to be used.	Obtains copy of QCOP 6600-03.	___	___	___
EVALUATOR: Maintaining VARS ½ the KW is NOT critical.					
F.4.a.	Reduce DG load to zero KW while maintaining VARS approx. one-half the KW value.	Positions governor to decrease until KW meter is "0". Stops when KW = 0. Positions volt. reg. To "decrease" while maintaining VARS one-half of KW.	___	___	___
*F.4.b.	•Open DG output breaker.•	Positions "Diesel 1 to 4 KV Bus 14-1" brk. CS to "Trip" when DG is unloaded. - Open light lit.	___	___	___
*F.5.	•Set speed droop to "0".	Directs NLO to Set SPEED DROOP to "0".	___	___	___
EVALUATOR: Request the simulator operator to set the speed drop to "0" using remote function dg01r (mrf dg01r 0).					
CUE: The speed droop has been set to "0".					
*F.6.a.	•Adjust DG Frequency to 60 hertz with Governor switch.•	Ensures DG set at 60 hz.	___	___	___
*F.6.b.	•Adjust DG voltage between 4100 to 4200 volts, but as close to 4160 as possible with voltage regulator (VARS switch).•	Ensures DG voltage is as close to 4160 as possible.			
F.7.	Have independent verification of settings.		___	___	___
CUE: I agree with the voltage and frequency settings.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*F.8.	•Stops Diesel Gen.•	Positions engine CS to STOP for 2-3 seconds at Panel 901-8.	___	___	___
*F.9.	•Return Diesel Control Switch to AUTO.•	Positions CS for U1 DG to AUTO.			
*F.10.	•Monitors DG cooldown.•	Recognize DG cooldown cycle incomplete due to DG early shutdown.	___	___	___
*F.10.a.	•Restart DG.•	Place DG engine CS switch to START.	___	___	___
*F.10.b.	•Place DG C/S in OFF.•	Positions engine CS to STOP for 2-3 seconds at Panel 901-8.	___	___	___
*F.10.c.	•Return DG switch to AUTO.•	Positions CS for U1 DG to AUTO.			
F.11.	Verify DG runs for 8-11 minutes total for cooldown.	Allow cooldown time for DG.			

TIME COMPRESSION MAY BE USED FOR COOLDOWN PERIOD.

CUE: The diesel has to run for 11 minutes and is now off.

EVALUATOR: The candidate should inform you that the task is complete.

JPM Stop Time: _____

Operator's Name: _____

Job Title: ☐ NLO ☐ RO ☐ SRO <mark>☐ STA</mark> <mark>☐ SRO Cert</mark> Delete these!

JPM Title: Shutdown the U-1 Diesel Generator with Early Trip
JPM Number: LS-035-I-F   Revision Number: <u>05</u>
Task Number and Title:

       SR-6600-P03 (Freq: LIC=I) Given an operating reactor plant with an emergency DG carrying an emergency bus with normal power restored, transfer the bus to its normal supply and shutdown the DG in accordance with QCOP 6600-03.

K/A Number and Importance:
       K/A: 264000 A4.04   **Rating:** 3.7/3.7

Suggested Testing Environment: Simulator

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

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

    Time Critical: ☐ Yes   ☒ No

Estimated Time to Complete: <u>17</u> minutes   **Actual Time Used:** _____ minutes

References: QCOP 6600-03, Rev. 18, DIESEL GENERATOR 1(2) SHUTDOWN

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}

- You are the U1 Assist NSO.
- Transformer 12 had been taken Out-of-Service for Substation Construction.
- The Unit and ½ Diesel generators had been supplying their emergency busses.
- Transformer 12 has just been repaired, returned to service, and energized, supplying busses 12 and 13.
- The ½ diesel has been shutdown and bus 13-1 is now being supplied with its normal feed, bus 13.
- Bus 14-1 is now energized from its normal power supply however the U-1 diesel is still running in parallel with the grid.
- The Shift Manager has authorized taking the U-1 diesel off.
- The NLO has set the Speed Droop to 50.
- This JPM is not time critical. Delete this statement.

INITIATING CUE

Unload and shut down the U1 EDG per QCOP 6600-03. Notify the Unit Supervisor at the completion of the cooldown.

Exelon Nuclear

Job Performance Measure

Change-Over Reactor Feed Pumps With Failure Of Auxiliary Oil Pump To Trip

JPM Number: <u>LS-024-I-F</u>

Revision Number: <u>06</u>

Date: <u>09/06/05</u>

Developed By: _____   _____
            Instructor   **Date**

Validated By: _____   _____
            SME or Instructor   **Date**

Review By: _____   _____
            Operations Representative   **Date**

Approved By: _____   _____
            Training Department   **Date**

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST
<mark>DELETE THIS PAGE!</mark>

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

Revision Record (Summary)

1. **Revision 01,** 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.

2. **Revision 02,** JPM revised to match procedure changes.

3. **Revision 03,** JPM revised to match procedure changes and update estimated time.

4. **Revision 04,** JPM revised to reflect procedure and format changes.

5. **Revision 05,** JPM revised to match procedure changes and update estimated time.

6. **Revision 06,** JPM revised to match procedure changes.

<u>DELETE THIS PAGE!</u>

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC <u>20</u> (rst <u>20</u>).

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. Run the setup Computer Aided Exercise _____-__ (jcae! _____-__)

3. **Manual Actuations:**

   - Ensure the "A" and "B" RFPs are on.

   - Ensure "Zinc Injection" magnet placed near 1B RFP switch.

   - Ensure the "A", "B", and "C" cond/cond booster pumps are on.

   - Insert override to fail the aux oil pump to trip when 1C RFP is started.
     ior lohs13201aopc3 on
     ior lohs13201aopc1 off
     ior lohs13201aopc2 off

   - Override alarm 901-6 F7 off **(imf ano9016f7 off)**

4. **Malfunctions:** NONE

5. **Remotes:** NONE

6. **Overrides:** NONE

7. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs using the JPM Validation Checklist.

8. This completes the setup for this JPM.

INITIAL CONDITIONS

Unit 1 is operating at approximately ___ MWe.
- The 1A Reactor Feed Pump seal has been leaking and getting steadily worse.
- The Shift Manager has ordered that the 1A RFP be taken off and the 1C RFP started.
- Zinc injection is lined up to 1B RFP.
- The 1D Condensate Pump has NOT been isolated.
- An NLO has been briefed and dispatched to check out the standby Condensate pump for start per step F.3.d of QOP 3200-04.
- 1C RFP has been filled and vented IAW QCOP 3200-01.
- This is NOT a time critical JPM. Delete this!

INITIATING CUE

Place the 1C RFP in service, powered from Bus 11, and place the 1A RFP in pull-to-lock in preparation for taking it out-of-service.

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.

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
	Obtain procedure to be used.	Obtains copy of QOP 3200-4.	___	___	___
F.1.	Determine if zinc injection aligned to RFP to be shutdown then valve out zinc injection.	Verifies zinc injection not valved to 1A RFP.	___	___	___
F.2.	Verifies condensate pump to be started is not isolated.	Verifies from initial conditions that 1D condensate pump is not isolated.	___	___	___
CUE: If asked, NLO reports 1D cond. pp. ready for start, F.3.d. and F.4 of QOP 3200-04 is completed.					
CUE: If asked, 1D cond/cond booster is NOT being started for the first time after maintenance.					
F.5.	Verifies condensate pump to be started is not isolated.	Verifies from initial conditions that 1D condensate pump is not isolated.	___	___	___
F.6.	Place the cond. pmp. selector switch to OFF.	Positions COND PMP SELECTOR switch to OFF, standby light goes out.	___	___	___
*F.7.	•Start standby condensate pump.•	Positions 1D COND PMP CS to close - On light lit - Motor amps increase then stabilize.	___	___	___
F.8.a.	Verify cond. pp. disch. press.	Verifies cond. pp. disch. press. > 140 psig.	___	___	___
F.8.b.	Verify booster pp. suc. press.	Verifies booster pp. suc. press. > 110 psig.			
F.8.c.	Verify booster pp. disch. press.	Verifies booster pp. disch. press. > 220 psig.	___	___	___
F.8.d.	Verify RFP suc. press.	Verifies RFP suc. press. > 200 psig.			
CUE: The NLO reports 1D cond. pp. post-start checks are sat and is enroute to the RFP room.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.10.a. b.	For RFP to be S/D, verify auxiliary oil pump control switch has red target and yellow auto trip light lit.	Verifies red target and yellow auto trip light lit for 1A RFP.	___	___	___
F.11.	De-select standby RFP.	Positions RFP SELECTOR switch to off-1C RFP standby light out.	___	___	___
Instructor Note: Candidate may order QOP 3200-04 Steps F.14 completed. If so, acknowledge QOP 3200-04 step F.14 is complete.					
F.14.a.	Verify 1C RFP min-flow valve at condenser 1-3213C, locked open	Verifies with US OR by checking passport, procedure in progress book and equipment status tags.	___	___	___
CUE: 1C RFP min-flow valve is locked open.					
F.14b.	Verify open RFP suc vlv 1-3499-17.	Directs operator to verify 1C RFP suc. vlv. 1-3499-17 Open.	___	___	___
CUE: 1C RFP suc vlv 1-3499-17 is open.					
F.14.c. (1-4)	Vent pp. casing.	Directs operator to vent 1C RFP casing.	___	___	___
CUE: The pp. casing is vented, steps F.14.c.(1)-(4) are complete.					
F.14.d. -m.	Verify TBCCW lined-up to 1C RFP.	Directs operator to verify TBCCW lined-up to 1C RFP: - Oil Cooler – Seal Cooler – Seal Jacket Cooler	___	___	___
CUE: TBCCW lined-up to all 1C RFP components, steps F.14.(d)-(m) are complete.					
F.14.n.	Verify normal oil level.	Directs operator to verify 1C RFP oil reservoir at normal level.	___	___	___
CUE: The 1C RFP oil reservoir normal					
F.14.o.	Verify 1C RFP auxiliary oil pump is operating.	Verifies red target and red on light lit for 1C RFP auxiliary oil pump.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.14.p. (1-4)	Determines that 1C RFP bearing lube oil pressure adjustment is not necessary.	Directs operator to verify 1C RFP bearing lube oil pressure between 11 to 13 psig.	___	___	___
CUE: The NLO reports 1C RFP bearing lube oil pressure is 12 psig.					
F.20.a.	Close RFP "C" Disch Vlv.	Positions C/S for MO 1-3201C to close. Verifies green light lit.	___	___	___
F.20.b.	Open RFP "C" Min Flow Vlv.	Positions C/S for AO 1-3201-C to open. Verifies red light lit.	___	___	___
*F.21.	•Start 1C RFP.•	Positions 1C RFP Bus 11 CS to close. – On light lit-motor amps.	___	___	___
*F.22.	•If Aux oil pump fails to auto trip, then trip RFP.•	Trip 1C RFP and reports problem to the US.	___	___	___
EVALUATOR: Acknowledge the report of the 1C RFP Aux Oil Pump and state, "another NSO will secure the 1D condensate pump." The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

Job Title: ☐NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert Delete This

JPM Title: Change-Over Reactor Feed Pumps With Failure Of Auxiliary Oil Pump To Trip

JPM Number: LS-024-I-F   Revision Number: 06

Task Number and Title: **SR-3200-P02** (Freq: LIC=I) Given a reactor plant during a startup, start the first reactor feed pump in accordance with QOP 3200-02.

K/A Number and Importance:

     K/A: 259001.A4.02   **Rating:**   3.9/3.7

Suggested Testing Environment: Simulator

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

Testing Method: ☐ Simulate   Alternate Path**:** ☒ Yes   ☐ No

     ☒ Perform   SRO Only**:** ☐ Yes   ☒ No

HOW IS THIS AN ALTERNATE PATH JPM????

Time Critical: ☐ Yes   ☒ No

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

References: QOP 3200-04, Rev. 32 REACTOR FEED PUMP CHANGE OVER

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

Unit 1 is operating at approximately ___ MWe.
-        The 1A Reactor Feed Pump seal has been leaking and getting steadily worse.
-        The Shift Manager has ordered that the 1A RFP be taken off and the 1C RFP started.
-        Zinc injection is lined up to 1B RFP.
-        The 1D Condensate Pump has NOT been isolated.
-        An NLO has been briefed and dispatched to check out the standby Condensate pump for start per step F.3.d of QOP 3200-04.
-        1C RFP has been filled and vented IAW QCOP 3200-01.
-        This is NOT a time critical JPM. Delete this!

INITIATING CUE

Place the 1C RFP in service, powered from Bus 11, and place the 1A RFP in pull-to-lock in preparation for taking it out-of-service.

Job Performance Measure

Transfer Recirculation Flow Control from Manual to Master

JPM Number:

Revision Number:

Date:

Developed By: _____   _____

                            Instructor   **Date**

Validated By: _____   _____

                           SME or Instructor   **Date**

Review By: _____   _____

                           Operations Representative   **Date**

Approved By: _____   _____

                           Training Department   **Date**

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST
<mark>DELETE THIS PAGE!!!</mark>

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

INITIAL CONDITIONS

- You are an extra NSO on shift.
- Unit 1(2) is operating at 70% power.
- Problems occurred earlier in the shift that resulted in the 1(2) A MG Set failing such that its speed could not be controlled from the Control Room.
- An operator was dispatched at that time to "Lock Up" the MG Set Scoop Tube. The problem has been resolved and the recirculation system is ready to be operated in the MASTER mode.
-
- Recirc pump speeds are matched with the 1(2) A recirc pump in individual manual control.
- This JPM is not time critical. DELETET THIS!

INITIATING CUE

Transfer the 1(2) A Recirc MG Set from MANUAL to AUTOMATIC control and then raise flow to 70%.

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.

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
	Obtains procedure to be used.	Gets copy of QCOP 0202-03.	___	___	___
CUE	**Provide candidate with QCOP 0202-03 after candidate has selected QCOP 0202-03.**				
F.4.a.	Verify FW flow is > 3.0 Mlb/hr.	FW flow verified as >3.0 Mlb/hr.	___	___	___
*F.4.b.	Depress MASTER pushbutton on 1(2) -0262-25A/B, LOOP A/B SPEED CONTROLLER.	Depresses MASTER pushbutton on 1(2) -0262-25A/B, LOOP A/B SPEED CONTROLLER.	___	___	___
F.4.b.(1)	Verify MASTER pushbutton is lit at both LOOP A/B SPEED CONTROLLERs.	Checks that MASTER pushbutton is lit at both LOOP A/B SPEED CONTROLLERs.	___	___	___
*F.3.	Depress the RAISE pushbutton on 1(2)-0262-22, MASTER SPEED DEMAND, to raise the speed of both pumps to 70%.	Depresses the RAISE pushbutton on 1(2)-0262-22, MASTER SPEED DEMAND, and raises the speed of both pumps to 70%.	___	___	___
CUE	**EVALUATOR: Pushbutton 1(2)-0262-22, MASTER SPEED DEMAND, is stuck in the RAISE position and flow continues to rise.**		___	___	___
*F.5	Depress MANUAL pushbutton on 1(2) -0262-25A/B, LOOP A/B SPEED CONTROLLER.	Recognizes that, as per Precaution D.3, this condition requires the controller to be transferred back to MANUAL mode. Transfers back to MANUAL mode.	___	___	___
*F.5.a.	Verify MANUAL pushbutton is lit at both LOOP A/B SPEED CONTROLLERs.	Verifies pushbutton is lit.	___	___	___
*D.2 and F.2	Depress LOWER pushbutton on LOOP A/B SPEED CONTROLLER.	Depresses LOWER pushbutton to stop "stuck" control input (pushbutton in RAISE). Notifies Control Room Supervisor that flow is no longer increasing.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	**Once the LOWER pushbutton is depressed, the flow will stop rising.**				

JPM Stop Time: _____

Operator's Name: _____

Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert Delete this

JPM Title: Transfer Recirculation Flow Control from Manual to Master

JPM Number: _____ Revision Number: _____

Task Number and Title: **SR-0202-P08** (Freq: LIC=I) Given an operating reactor plant and a loss of speed control of a reactor recirculation pump, take local manual control and adjust recirc pump speed in accordance with QCOP 0202-12.

K/A Number and Importance:

K/A: 202002.2.1.30 **Rating:** 3.9/3.4

Suggested Testing Environment: Plant

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

Testing Method: Simulate Alternate Path: ☐ Yes??? No
☐ Perform SRO Only: ☐ Yes No
IS THIS JPM ALTERNATE PATH????
Time Critical: ☐ Yes No

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

References: QCOP 0202-03, REV 17, REACTOR RECIRCULATION SYSTEM FLOW CONTROLLER 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

- You are an extra NSO on shift.
- Unit 1(2) is operating at 70% power.
- Problems occurred earlier in the shift that resulted in the 1(2) A MG Set failing such that its speed could not be controlled from the Control Room.
- An operator was dispatched at that time to "Lock Up" the MG Set Scoop Tube. The problem has been resolved and the recirculation system is ready to be operated in the MASTER mode.
-
- Recirc pump speeds are matched with the 1(2) B recirc pump in individual manual control.
- This JPM is not time critical. Delete this!

INITIATING CUE

Transfer the 1(2) A Recirc MG Set from MANUAL to AUTOMATIC control and then raise flow to 70%.