Exelon Nuclear

Job Performance Measure

Depressurize the Scram Air Header

JPM Number: i 1 NRC JPM RO/SRO

Revision Number: 00

Date: 10/08/09

Developed By: _____ _____
Instructor Date

Validated By: _____ _____
SME or Instructor Date

Reviewed By: _____ _____
Operations Representative Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 12 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

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

_____ 10. Verify performance time is accurate

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

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

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

Revision Record (Summary)

Revision 00, This JPM is developed IAW guidelines established in NUREG 1021 Rev 9 ES-301 and Appendix C. This JPM meets the criteria of Category B.1 "Control Room Systems," for RO/SRO candidates.

This JPM was based on bank JPM LP-032-I, Rev. 11. JPM revised to reflect the latest version of the JPM template and to specify performance on Unit 2.

Evaluator Note: Initiate this JPM from the ground floor of the Unit 1 or Unit 2 Reactor Building.

INITIAL CONDITIONS

- An ATWS has occurred on Unit ____ with reactor power currently at 80%.
- The US has directed the NSOs to insert control rods per QCOP 0300-28.
- The NSO has directed you to vent the scram air header.
- This JPM is NOT time critical.

INITIATING CUE

Vent the scram air header in accordance with QCOP 0300-28.

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. 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
	Provide the candidate with an unmarked copy of QCOP 0300-28.	Used QCOP 0300-28 procedure body or Attachment A.	___	___	___
NOTE: Normally only one valve will be opened supplying the header. Operator needs to identify the valve that is opened (rising stem), and describe action to close valve.					
*F.3.a.(1)	•Isolate the scram air header by closing INST AIR TO SCRAM AIR VLV PILOT HDR A/B FILT INLET VALVES.•	Rotates 1(2)-301-147A or 1(2)-301-147B handwheels clockwise.	___	___	___
CUE:	**You have rotated the handwheel and it/they will not turn any further.**				
*F.3.a.(2)	•Depressurize scram air header by opening the SCRAM AIR RELIEF VALVE RV.•	Lifts (and holds) handle on RV 1(2)-0399-24.	___	___	___
CUE:	**You hear air blowing for several seconds, the flow then slowed and finally stopped. The Control Room reports that all the control rods have fully inserted and requests that you restore the scram air header.**				
F.3.b.(1)	Close the SCRAM AIR RELIEF VALVE RV.	Releases handle on RV 1(2)-0399-24.	___	___	___
F.3.b.(2)	Restore scram air header pressure by opening INST AIR TO SCRAM VLV PILOT AIR HDR A/B FILT INLET VLVS.	Rotates 1(2)-301-147A or 147B handwheel counterclockwise.	___	___	___
CUE:	**You have rotated the handwheel(s) and it/they will not turn any further.**				
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

JPM SUMMARY

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

JPM Title: Depressurize the Scram Air Header

JPM Number: i 1 NRC JPM Revision Number: 00

Task Number and Title:

SRN-0300-P19 (Freq: LIC=B NF=B) Given a reactor plant in an ATWS condition (QGA), locally isolate and depressurize the scram air header in accordance with QCOP 0300-28.

K/A Number and Importance: **K/A:** 295037 EA1.05 **Rating:** 3.9/4.0
Ability to operate and/or monitor the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN: CRD hydraulic systems

Suggested Testing Environment: Plant

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

Reference(s): QCOP 0300-28, Rev. 27, Alternate Control Rod Insertion

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

Testing Method: ☒ Simulate ☐ Perform

Estimated Time to Complete: 5 minutes **Actual Time Used:** _____ minutes

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

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

Comments: _____

_____

_____

_____

_____

_____

_____

_____

Evaluator's Name: _____ (Print)

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

INITIAL CONDITIONS

- An ATWS has occurred on Unit ____ with reactor power currently at 80%.
- The US has directed the NSOs to insert control rods per QCOP 0300-28.
- The NSO has directed you to vent the scram air header.
- This JPM is NOT time critical.

INITIATING CUE

Vent the scram air header in accordance with QCOP 0300-28.

Exelon Nuclear

Job Performance Measure

Perform an Emergency Diesel Shutdown Following a Failure of the Engine Driven Cooling Water Pump

JPM Number: j 6 NRC JPM RO/SRO

Revision Number: 00

Date: 10/08/09

Developed By:	Instructor	Date
Validated By:	SME or Instructor	Date
Reviewed By:	Operations Representative	Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 8 through 12 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

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

_____ 10. Verify performance time is accurate

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

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

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

Revision Record (Summary)

Revision 00, This JPM is developed IAW guidelines established in NUREG 1021 Rev 9 ES-301 and Appendix C. This JPM meets the criteria of Category B.1 "Control Room Systems," for RO/SRO candidates.

This JPM was based on bank JPM LP-033-I-F, Rev. 12. JPM revised to specify the start of the alternate path segment and to change the associated K/A.

INITIAL CONDITIONS

- The U- _____ Diesel Generator was started locally due to a failure to auto-start and a failure of the Control Room controls to respond following a loss of offsite power.
- Offsite power has been restored and operators are taking actions to shutdown the Diesel per QCOP 6600-11.
- An EO has just reported that all loads from the Diesel have been removed and he has opened the Diesel output breaker locally.
- This JPM is not time critical.

INITIATING CUE

Perform QCOP 6600-11 to shutdown the U-_____ Diesel Generator locally until the Diesel is stopped. Another operator will be sent to perform the subsequent actions after the Diesel is shutdown.

Provide examinee with: A copy of QCOP 6600-11.

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
F.17.c	Verify speed droop set to zero	At Woodward governor, verifies upper-left knob at "0".	___	___	___
CUE:	**Point to upper left knob and "0" position and state "indicator is here".**				
F.17.d.	Adjust and verify proper frequency.	Adjusts frequency as necessary at Engine Mounted Control Panel using engine governor switch. At the 2251(2)-10 or 2212-45 panel, verifies frequency is 60 Hz.	___	___	___
CUE:	**Point to 60 Hz on the local frequency meter and state, "indicator is here."**				
F.17.e.	Adjust and verify proper voltage.	At the 2251(2)-10 or 2212-45 panel, adjusts as necessary (using Voltage Regulator Adjust switch) and verifies voltage is 4160.	___	___	___
CUE:	**Point to 4160 volts on the local voltage meter and state, "indicator is here."**				
*F.17.f.	•Place the diesel into its 11-minute cooldown.•	Depresses the "STOP" PB. (Engine Mounted Control Panel)	___	___	___
EVALUATOR NOTE: This is the beginning of the Alternate Path segment of this JPM.					
CUE:	**The pushbutton has been depressed. Point to the "LOW WATER" light on the engine panel and tell the operator "this light just lit up and you can hear an alarm on the local panel".**				
CUE:	**When the operator looks at the local annunciator panel, inform him/her that annunciator A-2 is alarming. When A-2 is located, provide examinee with copy of A-2. Ensure the correct panel QCAN is given.**				
	Determine cause for trouble alarm.	Refers to QCAN 2251(2)-10 A-2, 2212-45 A-2 procedure.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
EVALUATOR: the next step is from QCAN 2251(2)-10 A-2 (2212-45 A-2) and may not be performed based on the previous cue. If examinee looks at the LOW WATER light on the engine control panel again, give them the next cue.					
B.1.a.	Verify alarm is valid.	Verifies LOW WATER light is ON. (Engine panel).	___	___	___
CUE:	**The LOW WATER light is lit.**				
EVALUATOR CUE: If the examinee asks what the status of the DGCWP control switch indications are: **After the examinee locates the controls on the 2251(2)-37 / 2212-50 panel, inform him/her that the RED light is lit.**					
EVALUATOR CUE: If the examinee does not take any actions within ≈ 2 minutes, inform him/her that local alarm B-4, ENGINE TEMPERATURE HIGH is in alarm. If QCAN 2251(2)-10 B-4 or 2212-45 B-4, is reviewed, provide the copy. **If the examinee checks the status of the HOT ENGINE LIGHT at the Engine Mounted Control Panel state "the light is lit".** **For UNIT 1 ONLY, if coolant temperature at the Engine Mounted Control panel is checked, point to a temperature reading of 210°F and state "the indicator is here".**					
EVALUATOR: If the examinee asks if the diesel is still running inform him/her that "THE DIESEL IS STILL RUNNING".					
EVALUATOR NOTE: The examinee is expected to next perform an emergency shutdown of the Diesel IAW QCOP 6600-11 or as directed by QCAN 2251(2)-10 B-4 / QCAN 2212-45 B-4. This starts the alternate path.					
EVALUATOR ROLE PLAY: If the examinee is performing the emergency shutdown per the Engine High Temperature QCAN, when directed to place the Emergency Diesel Control Switch in the Main Control Room to "STOP", acknowledge the request and state "the U-__ Emergency Diesel control switch is in STOP".					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.18.b	Depress ENGINE STOP pushbutton	Depresses the "STOP" PB. (Engine Mounted Control Panel)	___	___	___
EVALUATOR: Allow the Diesel to trip on any one of the following methods the operator attempts. The trips are listed in order of preference. Note: The steps below are also directed by QCAN 2251(2)-10 B-4 or 2212-45 B-4, "Engine Temperature High" alarm.					
*F.18. c.(1), (2), or (3)	•Trip the Diesel, locally.•	Trips the Diesel by: Trips the fuel rack by PULLING OUT on the handle **OR** Turning the LOAD LIMIT knob (lower left knob), on the governor to 0 **OR** Closes the EMERGENCY FUEL CUT-OFF SUPLY VLV, 1(2)(1/2)-5299-156	___	___	___
CUE:	**The Diesel has stopped.**				
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

JPM SUMMARY

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

JPM Title: Perform and Emergency Diesel Shutdown Following a Failure of the Engine Driven Cooling Water Pump

JPM Number: j 6 NRC JPM RO/SRO Revision Number: 00

Task Number and Title:

SN-6600-P18 (Freq: LIC=I NF=I) Given an operating reactor plant, perform local actions to respond to local DG annunciators in accordance with QCAN 2251(2)-10 or QCAN 2212-45.

K/A Number and Importance: **K/A:** 264000 2.1.23 **Rating:** 4.3/4.4
Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Suggested Testing Environment: Plant

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

Reference(s): QCOP 6600-11, Rev. 21, DIESEL GENERATOR LOCAL OPERATOR
QCAN 2251(2)-10 A-2, Rev. 2, 1(2) DIESEL COOLING WATER LOW PRESSURE
QCAN 2212-45 A-2, Rev. 3, ½ DIESEL COOLING WATER LOW PRESSURE

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

- The U- _____ Diesel Generator was started locally due to a failure to auto-start and a failure of the Control Room controls to respond following a loss of offsite power.
- Offsite power has been restored and operators are taking actions to shutdown the Diesel per QCOP 6600-11.
- An EO has just reported that all loads from the Diesel have been removed and he has opened the Diesel output breaker locally.
- This JPM is not time critical.

INITIATING CUE

Perform QCOP 6600-11 to shutdown the U-_____ Diesel Generator locally until the Diesel is stopped. Another operator will be sent to perform the subsequent actions after the Diesel is shutdown.

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Exelon Nuclear

Job Performance Measure

Locally Start Up The 1/2 A Fire Diesel

JPM Number: k 8 NRC JPM RO/SRO

Revision Number: 00

Date: 10/08/09

Developed By:	Instructor	Date
Validated By:	SME or Instructor	Date
Reviewed By:	Operations Representative	Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 12 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

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

_____ 10. Verify performance time is accurate

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

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

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

Revision Record (Summary)

Revision 00, This JPM is developed IAW guidelines established in NUREG 1021 Rev 9 ES-301 and Appendix C. This JPM meets the criteria of Category B.1 "Control Room Systems," for RO/SRO candidates.

This JPM was based on bank JPM LP-002-II, Rev. 18.

JPM revised to match procedure revision and update to latest JPM template.

INITIAL CONDITIONS

- You are an extra operator.
- Both Diesel Fire pumps are in a standby condition per QCOP 4100-03, Section F.1.a.
- The Fire Marshall has requested that the ½ A Diesel Fire Pump be started locally for observation.
- There are no AUTO start signals present.
- You have been issued a fire protection key.
- This JPM is NOT time critical.

INITIATING CUE

Locally start-up the 1/2 A Diesel Fire Pump in the Test Mode, establish proper pressure, and verify proper operation per QCOP 4100-03.

Report to the Unit Supervisor when complete.

Provide the examinee: A copy of QCOP 4100-03 with Prerequisite C.1 and step F.1.a signed off.

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. 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
F.1.b.	Verify closed MO 1/2-3906.	Contacts CR to verify MO 1/2-3906 valve is closed.	___	___	___
CUE:	**As the Control Room Operator, state, "The MO 1/2-3906 valve is closed."**				
F.1.c.(1)	Open the 1/2A Diesel Fire PMP MIN FLOW VLV.	Unlocks the 1-4199-6 valve and rotates handwheel counter-clockwise.	___	___	___
CUE:	**You cannot rotate the handwheel any further.**				
*F.1.d.(2)	•Start the 1/2 A Diesel Fire Pump by placing control switch to TEST.•	Positions 1/2 A Diesel Fire Pump control switch to TEST.	___	___	___
CUE:	**The diesel is running.**				
F.1.d.(3)	Verifies engine cooling water outlet flow to the intake flume funnel	Checks for intake flume funnel for cooling water flow.	___	___	___
CUE:	**There is flow into the funnel.**				
*F.1.d.(4)(a)	•Throttles the 1/2A DIESEL FIRE PMP MIN FLOW VLV to attain proper discharge press.•	Rotates 1-4199-6 valve handwheel clockwise to establish 140 to 145 psig disch. press on PI 1/2-4141-2A.	___	___	___
CUE:	**When asked, point to 140 psig on PI 1/2-4141-2A and state, "the pressure is here" after the valve is throttled. (If asked before the valve is throttled, point to 100 psig).**				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.1.d.(5)	Verify normal parameters.	Verifies oil press. ≥ 40 psig and engine temp. is < 200°F.	___	___	___
CUE:	**When prompted, point to the value for each gauge and state, "the pressure is here." Oil pressure is 60 psig, temp. is 180° F.**				
CUE:	**The candidate informs the Fire Marshal that the 1/2A Fire Diesel is operating properly.**				
CUE:	**The Fire Marshall informs you that maintenance personnel want to walk down the system prior to placing the system in a shutdown lineup and it will be approximately 1 hour before you can place the system in a shutdown condition.**				

JPM Stop Time: _____

JPM SUMMARY

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

JPM Title: Locally Start Up The 1/2 A Fire Diesel

JPM Number: k 8 NRC JPM RO/SRO Revision Number: 00

Task Number and Title:

SRN-4100-P05 (Freq: LIC=B NF=B) Given an operating reactor plant with a loss of service water and a failure of a diesel fire pump to start, locally start the diesel fire pump in accordance with QCOP 4100-03.

K/A Number and Importance: **K/A:** 286000.2.1.30 **Rating:** 4.4/4.0

Fire system; Ability to locate and operate components, including local controls

Suggested Testing Environment: Plant

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

Reference(s): QCOP 4100-03 Rev. 17, DIESEL FIRE PUMP OPERATION

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

Testing Method: ☒ Simulate ☐ Perform

Estimated Time to Complete: 10.5 minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

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

Comments: _____

Evaluator's Name: _____ (Print)

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

INITIAL CONDITIONS

- You are an extra operator.
- Both Diesel Fire pumps are in a standby condition per QCOP 4100-03, Section F.1.a.
- The Fire Marshall has requested that the ½ A Diesel Fire Pump be started locally for observation.
- There are no AUTO start signals present.
- You have been issued a fire protection key.
- This JPM is NOT time critical.

INITIATING CUE

Locally start-up the 1/2 A Diesel Fire Pump in the Test Mode, establish proper pressure, and verify proper operation per QCOP 4100-03.

Report to the Unit Supervisor when complete.