

# Exelon Nuclear

## Job Performance Measure

### **Inject SSMP to U1 with Trip of Normal Feed**

JPM Number: 2014 ILT NRC JPM b

Revision Number: 00

Date: 10/15/2013

Developed By: \_\_\_\_\_  
Instructor Date

Validated By: \_\_\_\_\_  
SME or Instructor Date

Reviewed By: \_\_\_\_\_  
Operations Representative Date

Approved By: \_\_\_\_\_  
Training Department Date

**JOB PERFORMANCE MEASURE VALIDATION CHECKLIST**

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
     Procedure QCOP 2900-02 Rev: 25  
     Procedure QCAN 912-8 A-8 Rev: 5  
     Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

## **Revision Record (Summary)**

**Revision 00, Renamed to 2014 ILT NRC JPM b, restarted numbering accordingly.**

**Previous revisions were:**

**Revision 00,** This JPM was developed for ILT NRC Exam 03-01, IAW NUREG 1021, Rev 9.

**Revision 01,** JPM revised to update the format and for procedure revisions.

**Revision 02,** JPM revised for procedure revisions.

## SIMULATOR SETUP INSTRUCTIONS

1) Reset the simulator to any IC.

2) Manual Actuations

None

3) Malfunctions (contained in caep file "B caep.cae")

Cause 4KV BKR 152-1425 to FAIL to CLOSE|00:00:00|01

imf ed04|00:00:02|02

Set trigger 5 true when 2901-7 opens|00:00:00|03

trgset 5 "zlohs029017(2)"|00:00:04|04

Trip bus 31 on trigger 5 with a 4 second delay|00:00:00|05

imf ed03f (5 4)|00:00:06|06

Set trigger 6 true when breaker 152-1425 amber light is lit|00:00:00|07

trgset 6 "zlohs165001425(2)"|00:00:08|08

delete bus 31 trip on trigger 6|00:00:00|09

trg 6 "dmf ed03f"|00:00:10|10

4) Remotes

None

5) Overrides

None

6) 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.

7) This completes the setup for this JPM.



JPM B QCOP  
2900-02, Rev 025, S/A-8, Rev 005, SAFE S



JPM B QCAN 912-8



B caep.cae

## INITIAL CONDITIONS

- Unit 1 Reactor scrambled on loss of Feed Water several minutes ago. HPCI manual startup was attempted, but the turbine stop valve would not open. Maintenance is investigating.
- Reactor water level is -45", lowering.
- The Unit 1 Unit Supervisor has determined that Safe Shutdown Makeup Pump injection is required.
- This JPM is NOT time critical.

## INITIATING CUE

INJECT Safe Shutdown Makeup Pump to Unit 1. NOTIFY the Unit Supervisor when the SSMP system is injecting.

**{The student will obtain the hard card on the panel. If the student retrieves the paper copy of the procedure, provide the exam version of QCOP 2900-02}**

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

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## 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.

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JPM Start Time: \_\_\_\_\_

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>NOTE: The candidate may dispatch an EO to the SSMP room in anticipation of a locally performed action. If so, acknowledge the direction.</b>					
	Obtain procedure to be used.	Obtains QCOP 2900-02 or HARD CARD.	—	—	—
<b>NOTE: Candidate may choose to follow the procedural steps of QCOP 2900-02 OR use the HARD CARD (Attachment A). Either method is acceptable.</b>					
F.6.a.(1) Hard Card Step 2	<b>Verify</b> pump suction pressure available.	Verifies pump suction pressure indicates (i.e., not pegged low) on PI 1/2-2940-01, on the 912-8 panel.	—	—	—
F.6.b Hard Card Step 3	<b>Open</b> MOV 1/2 –2901-7, THROTTLED TEST VLV.	Places <u>and</u> holds MOV 1/2-2901-7 control switch in the OPEN position until valve indicates full open.	—	—	—
<b>NOTE: Breaker 1425 will trip 4 seconds after the candidate begins opening the 1/2-2901-7</b>					
<b>Alternate path starts here.</b>					
	Reports breaker 152-1425, Bus 14-1 feed to Bus 31, has tripped.	Acknowledges annunciator 912-8 A8, SSMP System Trouble, and dispatches EO's to the SSMP Room and to Bus 14-1.	—	—	—
<b>CUE:</b>	<b>As the EO sent to the SSMP room; report that the room is dark, but otherwise everything appears normal. NO targets have actuated on any breakers.</b> <b>IF asked about the status of the breaker for MO 1/2-2901-7, report that it appears normal.</b> <b>IF asked, as the EO sent to Bus 14-1, report that the feed breaker to Bus 31 is OPEN and there appears to have been some arcing in the upper compartment. All other indications on Bus 14-1 appear NORMAL.</b>				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
	Notifies Unit Supervisor that SSMP system can NOT be energized from Bus 14-1.		—	—	—
<b>CUE:</b>	<b>IF the candidate asks the Unit 2 Supervisor for permission to energize Bus 31 from Unit 2 (Bus 24-1), grant permission.</b>				
F.5.a. (1) Hard Card Step 1.a.	<b>Verify CLOSED</b> breaker 152-2425, Reserve Feed to Bus 31 from Bus 24-1.	Observes <u>red</u> light is lit for GCB 2425, GCB RESERVE FEED CONTROL	—	—	—
*F.5.a (2)* Hard Card Step 1.b.	● <b>Open</b> NORMAL FEED CONTROL, ACB 152-3101 feed breaker from Bus 14-1 to Bus 31.●	Places control switch for ACB 152-3101, NORMAL FEED CONTROL to the TRIP position and verifies green light is lit.	—	—	—
*F.5.a. (3)* Hard Card Step 1.c.	● <b>Close</b> Reserve Feed breaker from Bus 24-1 to Bus 31.●	Places control switch for ACB 152-3102, RESERVE FEED CONTROL, to the CLOSE position and verifies red light is lit.	—	—	—
<b>CUE: IF asked, report as the EO in the SSMP room, “the lights just came back on.”</b>					
<b>NOTE: Examinee should resume the procedure from step F.6.b (or Hard Card Step 3).</b>					
F.6.b* Hard Card Step 3	● <b>Open</b> MOV ½ -2901-7, THROTTLED TEST VALVE.●	Places <u>and</u> holds MOV 1/2-2901-7 control switch in the OPEN position until valve is full open, (red light lit).	—	—	—
<b>CUE: If examinee asks whether or not to re-attempt to throttle the 1/2-2901-7 valve, ask their recommendation. Regardless of their reply reiterate that Safe Shutdown injection to Unit 1 is needed.</b>					
*F.6.c* Hard Card Step 4	● <b>Start</b> ½-2901, SAFE SHUTDOWN PUMP.●	Places 1/2-2901 SAFE SHUTDOWN PUMP control switch to the START position and verifies red light is lit.	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
F.6.c. (1) Hard Card Step 4	<b>Verifies</b> discharge pressure increase.	Verifies PI 1/2-2940-05, on the 912-8 panel, shows increasing pressure.	—	—	—
*F.6.d Hard Card Step 5	<b>● Place</b> FCV 1/2-2901-6 in auto by selecting the  pushbutton  ( should be lit) ●	Depresses the  pushbutton on FIC 1/2-2940-7, SAFE SHUTDOWN MU PMP FCV.	—	—	—
*F.6.d. (1) Hard Card Step 5	<b>●Slowly increase</b> flow setpoint using SP  /  until value at bottom of scale indicates 400.●	Presses  to change FIC 1/2-2940-7 setpoint to 400 gpm and verifies flow increases to 400 gpm.	—	—	—
*F.6.e Hard Card Step 6	<b>●IF</b> injecting to Unit 1, <b><u>THEN</u></b> <b>open</b> MOV 1-2901-8. ●	Places MOV 1-2901-8 control switch to the OPEN position and verifies the red light is lit.	—	—	—
*F.6.g. Hard Card Step 8	<b>●Close</b> MOV 1/2-2901-7, THROTTLED TEST VLV●	Places <u>and</u> holds MOV 1/2-2901-7 control switch in the CLOSED position until valve is full closed, (green light lit).	—	—	—
	Verifies flow indication.	Verifies flow indication on 1/2-2901-6, Safe Shutdown MU Pmp FCV.	—	—	—
	Notifies the Unit 1 Unit Supervisor that the SSMP is injecting to Unit 1.		—	—	—
<b>CUE: As the US, report, “RPV water level is now –40 inches and rising.”</b>					

<b><u>STEP</u></b>	<b><u>ELEMENT</u></b>	<b><u>STANDARD</u></b>	<b>SAT</b>	<b>UNSAT</b>	<b>Comment Number</b>
F.6.i Hard Card Step 10	Close ½-2999-9, SERVICE WATER TO SSMP ROOM COOLER BYPASS VLV.	Directs EO to close ½-2999-9, Service Water to SSMP Room Cooler Bypass Valve.	—	—	—
<b>CUE: As the EO, report, “the ½-2999-9, Service Water to SSMP Room Cooler Bypass Valve is closed.”</b>					
<b>NOTE: Examinee should report that the task is complete.</b>					

JPM Stop Time: \_\_\_\_\_

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**JPM SUMMARY**

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

JPM Title: Inject SSMP to U1 with Trip of Normal Feed

JPM Number: 2014 ILT NRC JPM b

Revision Number: 00

Task Number and Title:

**SR-2900-P02** (Freq: LIC=A) (ILT-MP) Given Unit 1 in a QGA condition with the SSMP in a standby lineup, start the SSMP from the 912-8 panel and inject to Unit 1 in accordance with QCOP 2900-02. (Important PRA Operator Action - Proper operation of SSMP terminates 19 of the top 100 Core Damage Sequences) (Switching SSMP between units, aligning FPS to SSMP, and switching AC buses)

**SR-2900-P07** (Freq: LIC=A) Given a reactor plant in a QGA condition, transfer power for SSMP components from Normal to Reserve at panel 912-8 in accordance with QCOP 2900-01. (Important PRA Operator Action - proper SSMP switching terminates 2 of the top 100 Core Damage Sequences and has a RAW of 188)

K/A Number and Importance: **K/A:** 295031 EA1.08 **Rating:** 3.8/3.9

Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL : Alternate injection systems: Plant-specific

Suggested Testing Environment: Simulator

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

Reference(s): QCOP 2900-02, Rev. 25, SAFE SHUTDOWN MAKEUP PUMP SYSTEM START UP

QCAN 912-8 A-8, Rev. 5, SAFE SHUTDOWN MAKEUP PUMP SYSTEM TROUBLE

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

**Testing Method:** ☐ Simulate ☒ Perform

Estimated Time to Complete: 14 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:** \_\_\_\_\_

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### **INITIAL CONDITIONS**

- Unit 1 Reactor scrammed on loss of Feed Water several minutes ago. HPCI manual startup was attempted, but the turbine stop valve would not open. Maintenance is investigating.
- Reactor water level is -45", lowering.
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### **INITIATING CUE**

INJECT Safe Shutdown Makeup Pump to Unit 1. NOTIFY the Unit Supervisor when the SSMP system is injecting.