

# Exelon Nuclear

## Job Performance Measure

### Lineup RHR and Fire Protection Systems for Injection to the Reactor

JPM Number: 2014 ILT NRC JPM j

Revision Number: 00

Date: 10/21/2013

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 4100-11 Rev: 18  
     Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
     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 JPM to 2014 ILT NRC JPM j. Restarted numbering accordingly.

### **Previous revisions were:**

**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.

JPM revised to match procedure revision.

**Revision 02,** JPM revised to match procedure revision.

**Revision 03,** JPM revised to reflect updated KA and procedure/format changes.

**Revision 04,** JPM revised to update estimated completion time.

**Revision 05,** JPM revised to remove steps performed by the control room and added communications to facilitate those actions being done.

**Revision 06,** JPM revised to match procedure revision.

**Revision 07,** JPM revised to match procedure changes.

**Revision 08,** Revised for format changes and procedure revision.

### INITIAL CONDITIONS

- Unit 1(2) has experienced a LOCA and fuel damage.
- The Reactor Building Basement has very high radiation levels and RP directed personnel to evacuate the basement area
- The Unit Supervisor, in accordance with QGA 100, has directed that Alternate Level Control Systems be used to restore RPV level. The Unit Supervisor has directed injecting via the RHR ILRT spool piece connection.
- RHR operation has been terminated.
- RPV pressure is 45 psig.
- You have an S-Key and a Fire Lock key.
- The Safe Shutdown Hose and adapters have been obtained.
- Mechanical maintenance personnel are briefed on the installation to the RHR piping when directed.
- The Fire Protection System blank flange, outside of the Reactor Building, has been verified in place.
- The "A" Loop of RHR is selected for injection.
- All Unit 1(2) RHR pumps are in P-T-L.
- The following valves have been verified closed:
  - MO 1(2)-1001-19A
  - MO 1(2)-1001-23A
  - MO 1(2)-1001-26A
  - MO 1(2)-1001-34A
- The breaker for MO 1(2)-1001-28A has been opened.
- MO 1(2)-1001-28A has been manually closed.
- This JPM is NOT time critical.

### INITIATING CUE

Line up the in-plant portion of the Safe Shutdown Hose Line to allow Reactor Injection into Unit 1(2) IAW QCOP 4100-11 starting at F.1.h.

**{When candidate acknowledges the cue, provide the candidate with the procedure QCOP 4100-11 completed to step F.1.h}**

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.

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

- 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 J QCOP  
4100-11, Rev 018, U'

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
F.1.h.(1-3)	<b>Drain</b> line between MO 1(2)-1001-23A and MO 1(2)-1001-26A: (1) <b>Open</b> 1(2)-1001-25A, 1(2)A CONTAINMENT SPRAY LOOP INBD DRN VLV. (2) <b>Open</b> 1(2)-1001-198, 1(2)A CONTAINMENT SPRAY LOOP OTBD DRN VLV. (3) <b>Observe</b> flow through local flow glass.	(1) Opens 1(2)-1001-25A. (2) Opens 1(2)-1001-198. (3) Observes flow through sightglass.	—	—	—
<b>CUE:</b>	<b>1. As appropriate indicate the handwheels will turn no further in the counterclockwise direction.</b> <b>2. Report flow is observed from the sightglass then stops.</b>				
<b>EVALUATOR NOTE: If the candidate directs maintenance to install the SSD hose between the quick disconnect fittings, state that the mechanics want a “verification of the installation points”. Require the candidate to identify the installation points of the SSD hose to fully meet step F.1.i.</b>					
*F.1.i.	● <b>Install</b> SSD Hose Line.●	Directs MMs to install hose between quick disconnect fittings on 1(2)-4199-291 and 1(2)-1099-166.	—	—	—
<b>CUE:</b>	<b>State, “The SSD Hose is installed.”</b>				
*F.1.j. and F.1.j.(1)	● <b>Unlock</b> 1(2)-4199-291, FIRE WTR TO RX BLDG STRAINER DRN VLV. (1) <b>Open</b> 1(2)-4199-291. ●	Unlocks and opens the 1(2)-4199-291 valve.	—	—	—
<b>CUE:</b>	<b>The lock is removed from the 1(2)-4199-291, FIRE WTR TO RX BLDG STRAINER DRN VLV.</b> <b>The valve won’t turn any more in the counterclockwise direction and the valve stem is fully extended.</b>				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*F.1.k and F.1.k.(1)	<b>Unlock</b> 1(2)-1099-166, RHR DRYWELL SPRAY HDR HOSE CONNECTION. (1) <b>Open</b> 1(2)-1099-166.	Unlocks and opens the 1-1099-166 valve.	—	—	—
CUE:	<b>The lock is removed from the 1(2)-1099-166, RHR DRYWELL SPRAY HDR HOSE CONNECTION.</b> <b>The valve won't turn any more in the counterclockwise direction and the valve stem is fully extended.</b>				
F.2.a.(1) & (2)	<b>IF</b> desired to lineup RHR and Fire Protection Systems for injection to the Reactor, <b>THEN:</b> a. <b>Close</b> drains in line between MO 1(2)-1001-23A and MO 1(2)-1001-26A: (1) <b>Close</b> 1(2)-1001-25A, 1(2)A CONTAINMENT SPRAY LOOP INBD DRN VLV. (2) <b>Close</b> 1(2)-1001-198, 1(2)A CONTAINMENT SPRAY LOOP OTBD DRN VLV.	Closes the following valves: ○ 1(2)-1001-25A ○ 1(2)-1001-198	—	—	—
CUE:	<b>The valves won't turn any more in the clockwise direction.</b> <b>The EO should report to the control room that QCOP 4100-11 is complete through step F 2.a.</b>				
CUE:	<b>As the Unit 1 NSO indicate steps F.2.b. through F.2.f(1) have been completed and for the EO to continue at F.2.f.(2).</b>				
<b>EVALUATOR NOTE: Based on initial conditions of the high dose rates in the Reactor Building Basement, the candidate should choose to shut the breaker for MO 1(2)-1001-28A.</b>					
*F.2.f.(2)	● <b>Open</b> MO 1(2)-1001-28A, OTBD LPCI INJ VLV, manually <b>OR</b> remotely by closing feed breaker on MCC 18/19-5(28/29-5).●	Shuts breaker at MCC 18/19-5 (28/29-5) for the MO 1(2)-1001-28A	—	—	—
<b>EVALUATOR NOTE: When the candidate closes the breaker, as the Unit 1(2) NSO, state “the MO 1(2)-1001-28A valve is open.”</b>					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE:	As the Unit 1(2) NSO state, “I will finish performing the rest of the procedure.”				
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: Lineup RHR and Fire Protection Systems for Injection to the Reactor

JPM Number: 2014 ILT NRC JPM j Revision Number: 00

Task Number and Title:

**SRN-4100-P24** (Freq: LIC=B NF=B) Given Unit 1 requiring an alternate method for restoring RPV water level, locally install the interim safe shutdown hose line and inject to the RPV in accordance with QCOP 4100-11.

K/A Number and Importance: **K/A:** 286000 SG 2.1.30 **Rating:** 4.4/4.0

Fire Protection 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 4100-11, Rev.18, USING DIESEL FIRE PUMPS VIA SAFE SHUTDOWN HOSE LINE FOR REACTOR VESSEL LEVEL CONTROL OR FLOOR EMERGENCY INJECTION SOURCE

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

**Testing Method:** ☒ Simulate ☐ Perform

Estimated Time to Complete: 16 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:** \_\_\_\_\_

[If this page is an odd numbered page, a blank page is automatically generated after this page to keep the student cue sheet separate from this page]



## **INITIAL CONDITIONS**

- Unit 1(2) has experienced a LOCA and fuel damage.
- The Reactor Building Basement has very high radiation levels and RP directed personnel to evacuate the basement area
- The Unit Supervisor, in accordance with QGA 100, has directed that Alternate Level Control Systems be used to restore RPV level. The Unit Supervisor has directed injecting via the RHR ILRT spool piece connection.
- RHR operation has been terminated.
- RPV pressure is 45 psig.
- You have an S-Key and a Fire Lock key.
- The Safe Shutdown Hose and adapters have been obtained.
- Mechanical maintenance personnel are briefed on the installation to the RHR piping when directed.
- The Fire Protection System blank flange, outside of the Reactor Building, has been verified in place.
- The "A" Loop of RHR is selected for injection.
- All Unit 1(2) RHR pumps are in P-T-L.
- The following valves have been verified closed:
  - MO 1(2)-1001-19A
  - MO 1(2)-1001-23A
  - MO 1(2)-1001-26A
  - MO 1(2)-1001-34A
- The breaker for MO 1(2)-1001-28A has been opened.
- MO 1(2)-1001-28A has been manually closed.
- This JPM is NOT time critical.

## **INITIATING CUE**

- Line up the in-plant portion of the Safe Shutdown Hose Line to allow Reactor Injection into Unit 1(2) IAW QCOP 4100-11 starting at F.1.h.