Exelon Nuclear

Job Performance Measure

Bypass all Reactor Scram Signals

JPM Number: A

Revision Number: 00

Date: 03/07/05

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

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

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC __21_ (rst __21_).

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. 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.

3. This completes the setup for this JPM.

INITIAL CONDITIONS

You are AN EXTRA NSO on day shift. You have just reported to the Control Room at the direction of the Unit 1 Supervisor.

Unit 1 has experienced an Anticipated Transient Without Scram (ATWS).

- Reactor Power is at 13%

- All the Scram valves are OPEN

- 50 Control Rods are at position 48.

The Unit 1 Supervisor, performing QGA 101, has directed the UNIT NSO to perform QCOP 300-28.

The Unit NSO has directed you to BYPASS the reactor scram signals and NOTIFY him when he can attempt to RESET the Reactor Scram.

INITIATING CUE

BYPASS the Reactor Scram Signals in accordance with QCOP 300-28 and NOTIFY the Unit 1 NSO when he can attempt to reset the Reactor Scram.

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
CUE: The candidate MAY ask whether or not there is a **WORKING COPY** of QCOP 300-28 already in progress. Respond that the Unit 1 NSO is using a copy of QCOP 300-28 from the bookshelf and needs to keep it at the 901-5 panel.					
	Obtains procedure packet from QGA support procedure drawer.		___	___	___
NOTE: Candidate may choose to follow directions in the **BODY** of the procedure **OR** may go directly to the **FLOWCHART** in **ATTACHMENT A.** Either choice is acceptable. The step numbers below are from the **BODY** of the procedure.					
F.5.d. (1)	INSTALLS jumpers inside 901-15 panel		___	___	___
CUE: IF candidate asks for a verifier, report as the Unit Supervisor that you will have another operator verify the candidate's actions at a later time.					
NOTE: Recording jumper number is NOT required during an ATWS and can be completed at a later time.					
(a)*	●Installs Jumper between TB-A 14 AND 76● and records jumper no.	Connects jumper and records number.	___	___	___
(b)*	●Installs Jumper between TB-E 54 AND 90● and records jumper no.	Connects jumper and records number.	___	___	___
F.5.d. (2)	INSTALLS jumpers inside 901-17		___	___	___
(a)*	●Installs Jumper between TB-A 76 AND 86● and records jumper no.	Connects jumper and records number.	___	___	___
(b)*	●Installs Jumper between TB-E 54 AND 90● and records jumper no.	Connects jumper and records number.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
	NOTIFIES Unit 1 NSO to attempt to reset the Reactor Scram.	Per initiating CUE.	___	___	___
CUE: As NSO, acknowledge direction to reset the scram, then report the scram did reset. Candidate should report the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

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

JPM Title: Bypass all Reactor Scram Signals
JPM Number: SIM A Revision Number: 00
Task Number and Title: **SR-0300-P07** Given a reactor plant in an ATWS condition (QGA),
perform the NSO actions to insert control rods in accordance with
QCOP 0300-28.

K/A Number and Importance:
K/A: 295015.AK2.04 **Rating:** 4.0/4.1

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: 11 minutes **Actual Time Used:** _____ minutes

References:

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 day shift. You have just reported to the Control Room at the direction of the Unit 1 Supervisor.

Unit 1 has experienced an Anticipated Transient Without Scram (ATWS).

- Reactor Power is at 13%

- All the Scram valves are OPEN

- 50 Control Rods are at position 48.

The Unit 1 Supervisor, performing QGA 101, has directed the UNIT NSO to perform QCOP 300-28.

The Unit NSO has directed you to BYPASS the reactor scram signals and NOTIFY him when he can attempt to RESET the Reactor Scram.

INITIATING CUE

BYPASS the Reactor Scram Signals in accordance with QCOP 300-28 and NOTIFY the Unit 1 NSO when he can attempt to reset the Reactor Scram.

Exelon Nuclear

Job Performance Measure

Inject SSMP to U1 with Trip of Normal Feed

JPM Number: B

Revision Number: <u>00</u>

Date: <u>03/07/05</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

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

SIMULATOR SETUP INSTRUCTIONS

1) For **ILT 03-01 NRC Exam,** protected **IC #156** was created to allow **JPMs: a, b, c, e & f** to be performed simultaneously if desired. **TWO** files must be copied *from* ZIP disk *to* the S: drive. Steps a-g below only have to be performed ONCE for JPMs a, b, c, e, & f.

   a) **VERIFY** Simulator **ISOLATION** for exam security is COMPLETE

   b) **STOP MST**

   c) Connect ZIP drive to a USB port on the Simulator Operator Workstation.

   d) **COPY** file **d_ic.156** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC**

   e) **COPY** file **atsic156.rs** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC\Ats**

   f) **RESTART MST**

   g) **RESET** simulator to IC 156 (enter password) and go to **RUN**

NOTE: IF the IC listed above is not available, OR it is desired to perform this JPM alone, it is okay to use a different IC than one listed above, provided the IC actually used is verified to be compatible with this and other JPMs scheduled to be run concurrently.

2) **IF IC # 156 CAN NOT BE USED THEN:**

   a) Reset simulator to desired IC and go to **RUN**

   b) Run setup CAEP file **SYS-b** (if available)

3) **VERIFY** the following commands are in the Instructor Summary: (enter in expert mode as necessary)
   a) Cause 4KV BKR 152-1425 to FAIL to CLOSE:
      - imf ed04l
   b) Use triggers 5 & 6 to TRIP bus 31 when 2901-7 valve opens, then delete malfunction when 4KV BKR 1425 OPENS:
      - trgset 5 'zlohs029017(2) .gt.0'
      - imf ed03f (5 4)
      - trgset 6 'zlohs165001425(2) .gt.0'
      - trg 6 'dmf ed03f'

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.

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.

- The Unit 1 Unit Supervisor has determined that Safe Shutdown Makeup Pump injection is required.

INITIATING CUE

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

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 QCOP 2900-02 or HARD CARD		___	___	___
CUE: Candidate may choose to follow the steps in the BODY QCOP 2900-02 OR may use the HARD CARD (Attachment A). Either method is acceptable. The step numbers below are from the BODY of the procedure.					
F.6.a. (1)	Verify pump suction pressure available.	Reads pressure on 1/2-2940-01	___	___	___
F.6.b	Open 1/2 –2901-7	Places control switch to OPEN and holds it there until valve indicates full open.	___	___	___
NOTE: Breaker 1425 will trip 4 seconds after the candidate begins opening the 1/2-2901-7					
	Reports trip of breaker 1425 and loss of power to the SSMP system				
912-8 A8 B.1	Reviews QCAN 912-8 A8, SSMP System Trouble.	Dispatches Operator to SSMP room. May also dispatch operator to Bus 14-1 to investigate	___	___	___
CUE: As the NLO sent to the SSMP room; report that the room is dark, but otherwise everything appears normal. NO targets have actuated on any breakers. **IF asked about the status of the breaker for MO 1/2-2901-7, report that it appears normal.** **IF asked, as the NLO 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.**					
	Notifies Unit Supervisor that SSMP system can NOT be energized from Bus 14-1		___	___	___
CUE: IF the candidate asks the Unit 2 Supervisor for permission to energize Bus 31 from Unit 2 (Bus 24-1), grant permission.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.5.a. (1)	Verifies 152-2425 closed	Reserve Feed from Bus 24-1	___	___	___
F.5.a (2)*	●Opens Normal Feed breaker from Bus 14-1 on Bus 31●	Places C/S 152-3101 to Trip then releases C/S	___	___	___
F.5.a. (3)*	●Closes Reserve Feed breaker from Bus 24-1 on Bus 31●	Places C/S 152-3102 to Close then releases C/S	___	___	___
CUE: IF asked, report as the NLO in the SSMP room that the lights just came back on.					
NOTE: Candidate should resume the procedure from step F.6.b (or Hard Card)					
F.6.b*	●Opens Throttle Test Valve●	Places C/S 1/2-2901-7 to Open and holds it until valve full open.	___	___	___
F.6.c*	●Starts SSMP●	Places C/S 1/2-2901 to Start	___	___	___
F.6.c. (1)	Verifies discharge pressure increase	Monitors PI 1/2-2940-05	___	___	___
F.6.d*	●Places flow controller in Auto●	Depresses the Auto pushbutton on the Flow Indication Controller 1/2-2901-7	___	___	___
F.6.d. (1)*	●Increases controller setpoint to 400 gpm●	Turns thumbwheel to change FIC setpoint (right needle) UP to 400 gpm.	___	___	___
F.6.e*	●Opens Unit 1 injection valve. ●	Places C/S 1-2901-8 to open, then releases C/S	___	___	___
F.6.g.*	●Closes Throttle test Valve●	Places C/S 1/2-2901-7 to Close, holds until valve full closed.	___	___	___
F.6.h	Verifies flow indication	Monitors 1/2-2901-7 flow.	___	___	___
	Notifies the Unit 1 Unit Supervisor that the SSMP is injecting to Unit 1		___	___	___
NOTE: Candidate should report that the task is complete.					

JPM Stop Time: _____
••

Operator's Name: _____

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

JPM Title: Inject SSMP to U1 with Trip of Normal Feed
JPM Number: SIM B Revision Number: 00
Task Number and Title: **SR-2900-P02** Given Unit 1 in a QGA condition with an ECCS signal present and 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. **SR-2900-P07** Given a reactor plant in a QGA condition, transfer power for SSMP components from Normal to Reserve at panel 912-8..

K/A Number and Importance:
K/A: None* **Rating:** None*

* Modeled after HPCS 209002.A2.04 Rating: 3.1 / 3.2

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: 14 minutes **Actual Time Used:** _____ minutes

References:

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 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.

- The Unit 1 Unit Supervisor has determined that Safe Shutdown Makeup Pump injection is required.

INITIATING CUE

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

Exelon Nuclear

Job Performance Measure

Start HPCI in Pressure Control with Spurious Isolation

JPM Number: C

Revision Number: 00

Date: 03/07/05

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

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 00,**   This JPM was modified from LS-044-I for ILT NRC Exam 03-01, IAW NUREG 1021, Rev 9.

SIMULATOR SETUP INSTRUCTIONS

1) For **ILT 03-01 NRC Exam,** protected **IC #156** was created to allow **JPMs: a, b, c, e & f** to be performed simultaneously if desired. **TWO** files must be copied *from* ZIP disk *to* the S: drive. Steps a-g below only have to be performed ONCE for JPMs a, b, c, e, & f.

    a) **VERIFY** Simulator **ISOLATION** for exam security is COMPLETE

    b) **STOP MST**

    c) Connect ZIP drive to a USB port on the Simulator Operator Workstation.

    d) **COPY** file **d_ic.156** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC**

    e) **COPY** file **atsic156.rs** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC\Ats**

    f) **RESTART MST**

    g) **RESET** simulator to IC 156 (enter password) and go to **RUN**

NOTE: IF the IC listed above is not available, OR it is desired to perform this JPM alone, it is okay to use a different IC than one listed above, provided the IC actually used is verified to be compatible with this and other JPMs scheduled to be run concurrently.

2) **IF IC # 156 CAN NOT BE USED THEN:**

    a) Reset simulator to IC 21 and go to **RUN**

    b) Run setup CAEP file **sys-c.cae** (if available)

    c) BYPASS the RWCU isolation to ensure reject remains available and HPCI does not trip on high Reactor water level.

        i) **irf qg11r activate**

    d) ESTABLISH RWCU reject to Main Condenser at ≈100 gpm

    e) Scram the Reactor by pushing both manual scram pushbuttons, take the mode switch to shutdown and allow plant conditions to stabilize. Acknowledge all alarms

3) **VERIFY** the following commands are in the Instructor Summary: (enter in expert mode as necessary)

    a) **VERIFY** U1 Emergency DGCWP is running and HPCI auto start is prevented
      • **irf sw10r run**
      • **imf HP11**

b) **VERIFY** triggers 1 & 2 are set to cause a partial Group V isolation when the Gland Seal Water pump is started and delete the malfunction when 1-2301-5 valve begins to close.
   - **trgset 1 'ZLOHS12300GSB(3) '**
   - **imf HP14 (1 5)**
   - **trgset 2 'ZLOHS123015(1) .gt.0'**
   - **trg 2 'dmf HP14'**

c) **VERIFY** the following alarms, which could potentially distract the candidate, are not necessary for *other* JPM's being ran concurrently,THEN **OVERRIDE THEM OFF**.
   - **imf ano9015h1 off**
   - **imf ano9017a1 off**

d) **VERIFY** RWCU isolation is bypassed to ensure that HPCI does not trip on high Reactor water level. **VERIFY** that this override is not necessary for *other* JPM's that are to be performed concurrently.
   - **irf qg11r activate**

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) Freeze the simulator until the candidates are ready to perform this JPM.

6) This completes the setup for this JPM.

INITIAL CONDITIONS

- You are the Unit 1 Administrative NSO

- The Reactor was manually scrammed due to a loss of Main Condenser vacuum

- Level is being maintained with the Feedwater system

- ADS valves are inoperable

- HPCI is in STANDBY lineup with suction from the CCST

- **HPCI does NOT have an initiation signal.** (DISREGARD any conditions, which would indicate that HPCI has an initiation signal. These are for *other* JPM's)

- The Unit Supervisor has ordered HPCI to be started for PRESSURE CONTROL in anticipation of loosing the Main Condenser as a heat sink

INITIATING CUE

Start HPCI per QCOP 2300-06 for Reactor pressure control.

Notify the Unit Supervisor when HPCI is in operation and can be used for Reactor cool down.

Provide candidate with a copy of QCOP 2300-06

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.1	Verifies DGCWP pump on	Checks light indication on 901-8 panel.	___	___	___
F.5	Verifies Suction Lineup		___	___	___
F.5.a. (1)	Verifies MO 1-2301-6 , CCST SUCTION, **OPEN**		___	___	___
F.5.a (2)	Verifies MO 1-2301-35, TORUS SUCTION, **CLOSED**		___	___	___
F.5.a. (3)	Verifies MO 1-2301-63, TORUS SUCTION, **CLOSED**		___	___	___
NOTE: HPCI will ISOLATE as the next step is performed.					
F.5.c	Starts Gland Seal Leakoff Blower	Places GLAND SEAL LEAKOFF C/S to START	___	___	___
	Reports Annunciator Alarms 901-3 C-10, C-12, D-10 and that HPCI is isolating.	Refers to QCAN procedure and QCOA 2300-04, HPCI TURBINE TRIP / ISOLATION RECOVERY	___	___	___
NOTE: The candidate will perform steps from QCOA 2300-04 to reset the HPCI isolation. PROVIDE the candidate with a copy of QCOA 2300-04 AFTER he/she locates it.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
	Obtain procedure to be used.	Obtains copy of QCOA 2300-04.	___	___	___
EVALUATOR: Candidate may close the 2301-4 valve because it did not automatically close. It should NOT automatically close. The malfunction was a spurious partial isolation, which cleared immediately. If the candidate recognizes that the isolation was spurious AND partial, he/she MAY NOT close the 2301-4.					
D.2.a, b	Verify automatic actions.	Places MO 1-2301-4 control switch to CLOSE	___	___	___
D.4.b	Directs and Operator to check HPCI room status		___	___	___
CUE: As the NLO sent to the HPCI room, report that there is NO steam leak, and NO high temperature. Report that a contractor was building scaffolding in the HPCI room when he accidentally bumped an instrument rack. There is no visible damage to the instruments or the rack.					
EVALUATOR: If the candidate asks the Unit Supervisor if HPCI should be started, repeat the initial condition: *"The Unit Supervisor has ordered HPCI to be started for PRESSURE CONTROL in anticipation of loosing the Main Condenser as a heat sink."*					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
D.4.d. (1).	Verify HPCI Isolation signals clear.	Verifies the following 901-3 alarms are cleared: - C-12, HPCI STM LINE HIGH DP. - F-12, HPCI PUMP AREA HI TEMP. - H-2, AREA HI TEMP STEAM LEAK DETECTION. - E-15, SHUTDOWN COOLING LOW PRESS PERM. - A-16, PRI CNMT HIGH PRESSURE OR Verifies indication to determine DW pressure < 2.5 psig, Rx press. ≥ 100 psig, HPCI room temp ≤ 155°.	___	___	___
EVALUATOR: If this JPM is being performed with another JPM that has a HPCI isolation signal present, inform the candidate that the parameter in question should be considered to be NORMAL following Reactor Scram.					
D.4.d.(2).	Reset AC trip logic. Position AC TRIP LOGIC RESET keylock switch on 901-3, to STM SPLY **AND** VACU BKR.	Positions AC TRIP LOGIC RESET keylock switch on 901-3, to STM SPLY **AND** VACU BKR.	___	___	___
*D.4.d. (3).	Reset DC trip logic. •Position DC TRIP LOGIC RESET keylock switch on 901-3 to STM SPLY **AND** VACU BKR.•	Positions DC TRIP LOGIC RESET keylock switch on 901-3 to STM SPLY **AND** VACU BKR.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
D.4.d. (4), (5)	Verify AC & DC DIV ISOL alarms clear.	Depresses Annun reset and clears 901-3 D-9, HPCI GRP 4 AC DIVISION ISOLATION and D-10, HPCI GRP 4 DC DIVISION ISOLATION alarms.	___	___	___
D.4.d (6).	Verify Open TURB EXHST VAC BKR VLV.	Verifies MO 1-2399-40 CS to open - Verifies Open light lit.	___	___	___
D.4.d. (7).	Verify Open TURB EXHST VAC BLR VLV.	Verifies MO 1-2399-41 CS to open - Verifies Open light lit.	___	___	___
*D.4.d (9).	Open STM ISOL VLV. •Position MO 1-2301-5 CS to open.•	Positions MO 1-2301-5 CS to open. - Verifies Open light lit.	___	___	___
EVALUATOR: Because of the implied urgency in the initiating cue, and the fact that the isolation happened only moments ago, the candidate may procedurally skip steam line warming. IF warming is skipped, the candidate will continue at step **D.4.d.(10)(d)**					
D.4.d. (10)(a).	Warm-up HPCI steam line by slowly opening STM ISOL VLV. Throttle MO 1-2301-4 CS open.	Slowly throttles MO 1-2301-4 CS until it is OPEN - Verifies Dual light indication - Verifies GP 4 isolation does NOT occur from high stm flow.	___	___	___
D.4.d (10)(b).	Monitor HPCI TURB INLET PRESS.	Verifies PI 1-2340-4, HPCI TURB INLT PRESS, slowly increasing.	___	___	___
*D.4.d. (10)(d). **OR** *D.11	Fully open STEAM ISOL VLV. When PI 1-2340-4 stops increasing with alarm 901-3 B11, HPCI TURBINE INLET DRAIN POT HIGH LEVEL, CLEAR, •FULLY OPENS MO 1-2301-4 vlv.•	Fully opens MO 1-2301-4 vlv. - Verifies Open light lit.	___	___	___
	NSO reenters QCOS 2300-06.		___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
EVALUATOR: Candidate may return to QCOP 2300-06 _directly_ to step F.5.d since F.5.a and F.5.c have already been completed.					
F.5.a.	Verify CCST suction path: (1) Verify MO 1-2301-6 open. (2) Verify MO 1-2301-35 closed. Verify MO 1-2301-36 closed.	Verifies red light lit for MO 2301-6 valve and green light lit for MO 1-2301-35 and MO 1-2301-36 valves.	___	___	___
F.5.c.	Start gland seal blower.	Determines that gland seal blower is still running. - ON light lit.	___	___	___
*F.5.d.	•Start Aux oil pump.•	Positions Aux oil pump CS to MANUAL. - ON light lit.	___	___	___
*F.5.e.	•Close HPCI steam line drain valves to main condenser.•	Positions AO 1-2301-29 & 30 CS to CLOSE. - CLOSE lights lit.	___	___	___
F.5.f.	Open drain trap to drain pot valve.	Positions AO 1-2301-28 CS to OPEN. - OPEN light lit.	___	___	___
*F.5.g.	•Open HPCI Turbine steam supply vlv.•	Positions MO 1-2301-3 CS to OPEN. - OPEN light lit.	___	___	___
F.5.h.	Verify Min. Flow Byp. Vlv. opens.	Verifies MO 1-2301-14 OPEN light lit.	___	___	___
*F.5.i.	•Close above seat drain to sump vlvs.•	Positions AO 1-2301-64 & 65 CS to CLOSE. - CLOSE lights lit.	___	___	___
*F.5.j.	•Open HPCI stop valve.•	Depresses HPCI turb trip reset PB. - Stop vlv OPEN light lit.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
EVALUATOR: Depending on which other JPM's are being performed in the simulator, the Candidate MAY THINK that HPCI has an initiation signal. If the candidate chooses step F.8 below, inform the candidate that per the initial conditions, **HPCI DOES NOT HAVE AN INITIATION SIGNAL.** The simulator is setup to allow other JPMs to be performed concurrently.					
F.5.l	Determines that step F.7 is appropriate for pressure control with NO initiation signal present.	Verifies MO 1-2301-9 vlv OPEN light lit.	___	___	___
*F.7.a	•Open Test return Valve•	Positions MO 1-2301-15 to OPEN - OPEN light lit	___	___	___
*F.7.b	•Open Test Return Valve•	Positions MO 1-2301-10 to OPEN -Holds C/S until valve indicates full OPEN	___	___	___
*F.7.c	•Increases turbine speed•	Adjusts Motor Speed Changer. - Discharge flow ≈5600 gpm and MSC is at the High Speed Stop.	___	___	___
F.7.d	Verify Min. Flow Byp. Vlv. closes.	Verifies MO 1-2301-14 CLOSED light lit.	___	___	___
F.7.e	Stop Aux oil pump.	Positions Aux oil pump CS to AUTO. - OFF light lit.	___	___	___
EVALUATOR: Momentary flow or pressure oscillations outside the limits given in the next step would NOT constitute failure, provided that the parameters are within the limits when the candidate indicates that the JPM is complete.					
*F.7.g	•Throttle Test Return Valve•	Adjusts position of MO 1-2301-10 - HPCI discharge pressure 100 psig above Reactor Pressure AND less than 1250 - HPCI flow rate ≈5600	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.7.i	Monitors HPCI performance	Monitors: - HPCI Turbine Speed < 4000 rpm - Pump suction pressure 0 – 35 psig - HPCI flow 5000 to 5600 gpm - HPCI exhaust pressure 1 to 50 psig			
CUE: Inform the candidate that Reactor pressure is decreasing and that you will assign another NSO to monitor proper HPCI operations.					
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

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

JPM Title: Start HPCI in Pressure Control with Spurious Isolation

JPM Number: <u>SIM C</u>   Revision Number: <u>00</u>

Task Number and Title: **SR-2300-P05** Given a reactor in an accident condition and a spurious HPCI trip or isolation, perform actions to determine the cause and prepare HPCI to be started in accordance with QCOA 2300-04.

K/A Number and Importance:

        K/A: 295025.EA1.04   **Rating:**   3.8/3.9

Suggested Testing Environment:

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>40</u>   minutes **Actual Time Used:** _____ minutes

References:
QCOP 2300-06
QCOA 2300-4
QCAN 901-3 C10, C12, D10

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 the Unit 1 Administrative NSO

- The Reactor was manually scrammed due to a loss of Main Condenser vacuum

- Level is being maintained with the Feedwater system

- ADS valves are inoperable

- HPCI is in STANDBY lineup with suction from the CCST

- **HPCI does NOT have an initiation signal.** (DISREGARD any conditions, which would indicate that HPCI has an initiation signal. These are for *other* JPM's)

- The Unit Supervisor has ordered HPCI to be started for PRESSURE CONTROL in anticipation of loosing the Main Condenser as a heat sink

INITIATING CUE

Start HPCI per QCOP 2300-06 for Reactor pressure control.

Notify the Unit Supervisor when HPCI is in operation and can be used for Reactor cool down.

Exelon Nuclear

Job Performance Measure

Place Shutdown Cooling In Operation with Reactor Recirc Pump Trip

JPM Number: D

Revision Number: 00

Date: 03/08/05

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

> **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 00,**   This JPM was developed for ILT NRC exam 03-01 IAW NUREG 1021, rev. 9.

SIMULATOR SETUP INSTRUCTIONS

1) For **ILT 03-01 NRC Exam,** protected **IC #155** was created to allow **JPMs: d, g, & h** to be performed simultaneously if desired. **TWO** files must be copied *from* ZIP disk *to* the S: drive. Steps a-g below only have to be performed ONCE for JPMs d, g, & h.

   a) **VERIFY** Simulator **ISOLATION** for exam security is COMPLETE

   b) **STOP MST**

   c) Connect ZIP drive to a USB port on the Simulator Operator Workstation.

   d) **COPY** file **d_ic.155** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC**

   e) **COPY** file **atsic155.rs** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC\Ats**

   f) **RESTART MST**

   g) **RESET** simulator to IC 155 (enter password) and go to **RUN**

NOTE: IF the IC listed above is not available, OR it is desired to perform this JPM alone, it is okay to use a different IC than one listed above, provided the IC actually used is verified to be compatible with this and other JPMs scheduled to be run concurrently.

2) **IF IC # 155 CAN NOT BE USED THEN:**

   a) Reset simulator to desired IC with shutdown cooling in operation and go to **RUN**

   b) Run setup CAEP file **SYS-d** (if available)

   c) Manual Actuations :

   - Start "A" RHR Service Water Pump and establish 270-280 psig discharge pressure IAW QCOP 1000-04
   - Start SDC per QCOP 1000-05 Step F.1 set up for a 25-30 deg F cooldown.
   - DO NOT open the 1-1001-43B vlave.
   - Shutdown SDC per QCOP 1000-05 step F.5
   - Fill out a copy of QCOP 1000-05. Sign off the prerequisites, all of step F.1 and F.3. N/A steps F.2, F.3 and F.4.

3) **VERIFY** the following commands are in the Instructor Summary: (enter in expert mode as necessary)

   a) Trigger 1 is set to TRIP the A Reactor Recirc Pump 59 seconds after the 1A RHR pump is started.

   - trgset 1 'zlohs110021a(3)'
   - imf rr01a (1 59)

   b) Override 901-4 A5 off

   - imf ano9014a5 off

   c) PLACE an <u>Equipment Status Tag</u> on the 1-1001-16A stating that the 1-1001-17A is throttled 28.5 turns closed from full open.

4) **PREPARE** an "In Progress copy" of QCOP 1000-05 for **EACH** candidate, signed off as follows:

   a) Step C....................................All initialed

   b) Step F.1 ....All initialed **EXCEPT**

   - F.1.(a).(2) ....N/A
   - F.1.(d)...............................N/A
   - F.1.(e).(3) **AND** (4)..........N/A
   - F.1.(o)...............................N/A
   - F.1.(p).(4) ....N/A
   - F.1.(s).(2).(c) (ALL •)......N/A

   c) Step F.5 ....ALL initialed

5) 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.

6) This completes the setup for this JPM.

INITIAL CONDITIONS

Unit 1 is in Mode 4 and has been shut down for 2 days.
Both reactor recirc pumps are running at minimum speed.
RHR is lined up for a subsequent restart of Shutdown Cooling (SDC) on A loop.
The MO-1-1001-47 and MO-1-1001-50 valve breakers are closed.
The Shutdown Cooling suction header has been filled and vented IAW QCOP 1000-3.
Rad Protection has been notified that SDC will be restarted

Reactor water temperature is 177 degrees F in a band of 160 – 180 degrees F.
The Unit Supervisor has directed you to establish a new Reactor water temperature band of 110 to 120 degrees F.
.

INITIATING CUE

Place the "A" loop of RHR in Shutdown Cooling using the "A" RHR pump.
Cool down to the new temperature band slowly, (25-30 degrees F per hour.)

Notify the Unit Supervisor when Reactor cooldown has began.

Provide the candidate with a copy of QCOP 1000-05 marked up IAW the setup instructions.

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
C.1	Verifies reactor mode	Using initial conditions, verifies reactor in Mode 4.	___	___	___
C.2	Verify SDC low pressure permissive	Verifies alarm 901-3 E-15 illuminated. (SDC permissive)	___	___	___
C.2.a	Verifies SDC suction header filled and vented.	Using initial conditions, verifies SDC suction header filled and vented.	___	___	___
C.2.b	Verifies SDC suction valve breakers on.	Using the initial conditions or light indication, verifies MO-1-1001-47 and 50 breakers energized.	___	___	___
C.3	Verifies RP notified of SDC start.	Using initial conditions, verifies RP notified of SDC start.	___	___	___
F.2.a	Verify an RHRSW in operation.	Verifies "A" RHRSW pump on and the 1-1001-5A open.	___	___	___
F.2.b. (1)	Verifies crosstie valve closed.	Verifies MO 1001-19A closed light lit.	___	___	___
F.2.b. (2),(3)	Verifies torus suction valves closed.	Verifies MO 1-1001-7A and 7B closed lights lit.	___	___	___
F.2.b. (4)	Verifies LPCI injection valve closed.	Verifies MO 1-1001-29A closed light lit.	___	___	___
F.2.c. (1)	Verifies open A RHR pump SDC suction valve.	Verifies MO 1-1001 43A open light lit.	___	___	___
F.2.c. (2),(3)	Verifies SDC suction valves open.	Verifies MO 1-1001-47 and 50 open lights lit.	___	___	___
F.2.d. (1)	Verifies LPCI injection valve throttled open.	Verifies MO 1-1001-28A throttled open.	___	___	___
F.2.d. (2)	Verifies RHRSW HX bypass valve throttled open.	Verifies MO 1-1001-16A throttled open.	___	___	___
F.2.e.	Verifies A reactor recirc pump running.	Verifies A reactor recirc on light is lit.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.2.f.	Verifies 1-1001-17A throttled	Determines from initial conditions that a slow cooldown rate is desired and verifies Equipment Status Tag on the MO 1-1001-16A.	___	___	___
F.2.g.	Reset Group II isolation.	Depresses the RESET FOR GP 2 ISOL VL 1-1001-29 PB on the 901-3 Panel.	___	___	___
EVALUATOR NOTE: the next two steps will be done in rapid succession. Place keeping is not required between steps but should be done at the completion of both.					
*F.2.h. (1)	•Opens discharge valve.•	Places the MO 1-1001-29A to OPEN	___	___	___
*F.2.h. (2)	•Starts pump.•	2 seconds after opening the discharge valve, places the A RHR pump CS to CLOSE.	___	___	___
SIMOP: VERIFY that approx 59 seconds after the start of the 1A RHR pump, that the 1A Reactor Recirc Pump trips. IF it does NOT automatically trip, trip it using command: imf rr01a					
	Reports 1A Reactor Recirc pump trip.	Reports to US that the 1A Reactor Recirc Pump Tripped and refers to QCAN 901-4 A9 and QCOA 0202-04	___	___	___
*E.18	•Closes suction or discharge valve on 1A Reactor Recirc pump•	Positions control switch for MO 1-0202-5A **OR** 4A to CLOSED.			
F.2.j.	Monitors Reactor water temperature cooldown rate	Monitors Reactor water temperature.	___	___	___
F.2.k	Monitors Reactor water level	Monitors Reactor water level.			
CUE: tell the candidate that You will assign another NSO take the actions for the tripped Reactor Recirc pump AND monitor Reactor level and cooldown rate.					
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

Job Title: ☐ RO ☐ SRO

JPM Title: Place Shutdown Cooling In Operation with Pump Trip
JPM Number: SIM D   Revision Number: 00
Task Number and Title: **SR-1000-P07.** Given a shutdown reactor plant, start RHR in shutdown cooling mode in accordance with QCOP 1000-5.

K/A Number and Importance:
                     K/A: 205000.A2.06   **Rating:** 3.4 / 3.5

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: _20_ minutes **Actual Time Used:** _____ minutes

References: QCOP 1000-5, Rev. 35, SHUTDOWN COOLING START-UP AND
              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

Unit 1 is in Mode 4 and has been shut down for 2 days.
Both reactor recirc pumps are running at minimum speed.
RHR is lined up for a subsequent restart of Shutdown Cooling (SDC) on A loop.
The MO-1-1001-47 and MO-1-1001-50 valve breakers are closed.
The Shutdown Cooling suction header has been filled and vented IAW QCOP 1000-3.
Rad Protection has been notified that SDC will be restarted

Reactor water temperature is 177 degrees F in a band of 160 – 180 degrees F.
The Unit Supervisor has directed you to establish a new Reactor water temperature band of 110 to 120 degrees F.
.

INITIATING CUE

Place the "A" loop of RHR in Shutdown Cooling using the "A" RHR pump.
Cool down to the new temperature band slowly, (25-30 degrees F per hour.)

Notify the Unit Supervisor when Reactor cooldown has began.

Exelon Nuclear

Job Performance Measure

Vent Primary Containment with Hardened Vent

JPM Number: E

Revision Number: 00

Date: 03/10/05

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

> **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 00,**   This JPM was developed from Bank JPM LS-043-I for ILT NRC Exam 03-01, IAW NUREG 1021, Rev 9.

SIMULATOR SETUP INSTRUCTIONS

1) For **ILT 03-01 NRC Exam,** protected **IC #156** was created to allow **JPMs: a, b, c, e & f** to be performed simultaneously if desired. **TWO** files must be copied *from* ZIP disk *to* the S: drive. Steps a-g below only have to be performed ONCE for JPMs a, b, c, e, & f.

   a) **VERIFY** Simulator **ISOLATION** for exam security is COMPLETE

   b) **STOP MST**

   c) Connect ZIP drive to a USB port on the Simulator Operator Workstation.

   d) **COPY** file **d_ic.156** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC**

   e) **COPY** file **atsic156.rs** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC\Ats**

   f) **RESTART MST**

   g) **RESET** simulator to IC 156 (enter password) and go to **RUN**

NOTE: IF the IC listed above is not available, OR it is desired to perform this JPM alone, it is okay to use a different IC than one listed above, provided the IC actually used is verified to be compatible with this and other JPMs scheduled to be run concurrently.

2) **IF IC # 156 CAN NOT BE USED THEN:**

   a) Reset simulator to IC 21 and go to **RUN**

   b) Fail ALL the DW – Torus Vacuum Breakers OPEN
   - **imf pc04a**
   - **imf pc04b**
   - **imf pc04c**
   - **imf pc04d**
   - **imf pc04e**
   - **imf pc04f**
   - **imf pc04g**
   - **imf pc04h**
   - **imf pc04i**
   - **imf pc04j**
   - **imf pc04k**
   - **imf pc04l**

   c) Insert a leak on the A Relief Valve tailpipe
   - **imf ms16a**

d) Prevent HPCI auto initiation

- **imf HP11**

e) OPEN the A Relief Valve to pressurize the Drywell

f) Monitor DW & Torus Pressure.

g) CLOSE A Relief Valve when Torus pressure reaches 50#

h) ALLOW the simulator to stabilize for approx 5 minutes.

3) **VERIFY** the following commands are in the Instructor Summary: (enter in expert mode as necessary)

- **None**

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.

INITIAL CONDITIONS

- A transient has occurred on U-1 which is threatening the Primary Containment reaching the Primary Containment Pressure Limit.
- A Site Emergency has been classified.
- A plant assembly has been ordered. The plant is evacuated and all personnel are accounted for.
- Currently, Torus Pressure and Drywell pressure is 50 psig.
- Sufficient Radwaste and Turbine Building Exhaust Fans are operating for adequate dilution.
- One train of SBGT is operating.
- The annunciators have been silenced with the Annunciator Silence Key as ordered by the Unit Supervisor.
- The Station Director has given permission to vent.
- This JPM is not time critical

INITIATING CUE

Vent the Torus in accordance with QCOP 1600-13. It is "OK to exceed release rate limits."

Establish a Torus pressure band between 40 and 45 psig but as close to 45 psig as possible, so as to limit the release rate.

Provide the Candidate with a copy of QCOP 1600-13

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.1.a-b	Operates as many TB & RW fans as possible	Initial Conditions	___	___	___
CUE: ALL available TB & RW fans are in operation.					
F.2.a-f.	Verify closed primary containment valves.	Verifies CLOSED lights lit for the following valves: AO 1-1601-61 AO 1-1601-62 AO 1-1601-63 AO 1-1601-60 AO 1-1601-23 AO 1-1601-24	 ___ ___ ___ ___ ___ ___	 ___ ___ ___ ___ ___ ___	 ___ ___ ___ ___ ___ ___
F.4.a	Evacuates Reactor Building AND Turbine Building	Initial conditions OR makes plant announcement.			
F.4.b.*	●Select APCV.●	Positions "Master Vent Mode Switch" to APCV.	___	___	___
F.4.c.	Verify closed, Vent to Rx Bldg. vlv.	Verifies AO 1-1699-7 closed light lit.	___	___	___
F.4.d.*	●Override Gp II signal for Vent to R.B. exhaust vlv.●	Positions AO 1-1601-24 CIS OVERRIDE switch to OVERRIDE AND holds for at least 1 second.	___	___	___
F.4.e.*	●Override Gp II signal for DW & Torus Vent vlvs.●	SIMULTANEOUSLY positions AO 1-1601-23 CIS OVERRIDE **and** AO 1-1601-60 CIS OVERRIDE switches to OVERRIDE AND holds for at least 1 second.	___	___	___
F.4.f.*	●Open Vent to Rx Bldg. Exh. sys. vlv.●	Positions AO 1-1601-24 CS to open - open light lit.	___	___	___
F.4.g.	Verify Torus Level.	Verifies Torus level < 30 ft.	___	___	___
F.4.g. (1)*	●Open Torus 18-inch Vent vlv.●	Positions AO 1601-60 CS to open - open light lit	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.4.g. (2)*.	●Open Vent to Main Chimney vlv.●	Positions AO 1-1699-6 CS to open - Open light lit	___	___	___
CUE: If asked, in the following step, vent to decrease containment pressure to keep Torus pressure between 40 and 45 psig.					
F.4.g. (2)*	●Closes Vent to Main Chimney● before Torus pressure drops to 40 psig	Positions AO 1-1699-6 CS to Close before Torus pressure drops to 40 psig. - Closed light lit.	___	___	___
CUE: When venting has been secured, inform the candidate as the Unit Supervisor that you will have another Operator take over who will perform the necessary logkeeping and release rate for the venting.					
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

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

JPM Title: Vent Primary Containment using Hardened Vent
JPM Number: SIM E   Revision Number: 00
Task Number and Title: **SR-0001-P24** Given a reactor plant with rising containment pressure due to a LOCA or steam leak, vent the containment irrespective of off-site radioactivity release rates before torus pressure reaches the Primary Containment Pressure Limit (QGA Figure D) in accordance with QGA 200 and QCOP 1600-13.

K/A Number and Importance:
              K/A: 295010.AA1.05   **Rating:** 3.1 / 3.4

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: 15   minutes **Actual Time Used:** _____ minutes

References: QCOP 1600-13, Rev. 18, POST ACCIDENT VENTING OF THE PRIMARY CONTAINMENT

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

- A transient has occurred on U-1 which is threatening the Primary Containment reaching the Primary Containment Pressure Limit.
- A Site Emergency has been classified.
- A plant assembly has been ordered. The plant is evacuated and all personnel are accounted for.
- Currently, Torus Pressure and Drywell pressure is 50 psig.
- Sufficient Radwaste and Turbine Building Exhaust Fans are operating for adequate dilution.
- One train of SBGT is operating.
- The annunciators have been silenced with the Annunciator Silence Key as ordered by the Unit Supervisor.
- The Station Director has given permission to vent.
- This JPM is not time critical

INITIATING CUE

Vent the Torus in accordance with QCOP 1600-13. It is "OK to exceed release rate limits."

Establish a Torus pressure band between 40 and 45 psig but as close to 45 psig as possible, so as to limit the release rate.

Exelon Nuclear

Job Performance Measure

Shutdown the U1 Diesel Generator with Early Trip

JPM Number: F

Revision Number: 00

Date: 03/10/05

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

> **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 00,** This JPM was modified from LS-044-I for ILT NRC Exam 03-01, IAW NUREG 1021, Rev 9.

SIMULATOR SETUP INSTRUCTIONS

1) For **ILT 03-01 NRC Exam,** protected **IC #156** was created to allow **JPMs: a, b, c, e & f** to be performed simultaneously if desired. **TWO** files must be copied *from* ZIP disk *to* the S: drive. Steps a-g below only have to be performed ONCE for JPMs a, b, c, e, & f.

    a) **VERIFY** Simulator **ISOLATION** for exam security is COMPLETE

    b) **STOP MST**

    c) Connect ZIP drive to a USB port on the Simulator Operator Workstation.

    d) **COPY** file **d_ic.156** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC**

    e) **COPY** file **atsic156.rs** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC\Ats**

    f) **RESTART MST**

    g) **RESET** simulator to IC 156 (enter password) and go to **RUN**

NOTE: IF the IC listed above is not available, OR it is desired to perform this JPM alone, it is okay to use a different IC than one listed above, provided the IC actually used is verified to be compatible with this and other JPMs scheduled to be run concurrently.

2) **IF IC # 156 CAN NOT BE USED THEN:**

    a) Reset simulator to IC 21 and go to **RUN**

    b) Run setup CAEP file **sys-f.cae** (if available)

3) **VERIFY** the following commands are in the Instructor Summary: (enter in expert mode as necessary)

    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)'
- trg 12 'dmf dg01a'
- trgset 13 'zdihs16600strt(1)'
- trg 13 'mrf dg03r reset'
- trgset 14 '.not.an:9018b7'
- trg 14 'imf ano9018b7 off'

    c) Set the Speed Droop to 50

- mrf DG01r 1

    d) Reset the local DG annunciator panel.

- mrf dg18r 1

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.

INITIAL CONDITIONS

- Transformer 12 to Bus 14 feed breaker was OOS for inspection when Unit 1 scrammed

- The Unit 1 Diesel generator started and loaded.

- The Transformer 12 to Bus 14 feed breaker was returned to service and Bus 14 was re-energized.

- Bus 14-1 has been closed in to NORMAL power supply, however the U1 EDG is still loaded, running in parallel with the grid.

- The Speed Droop is set at 50.

- An NLO will be available to perform actions outside the Control Room.

INITIATING CUE

Shut down the U1 Emergency Diesel Generator in accordance with QCOP 6600-03.

Provide the Candidate a copy of QCOP 6600-03

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.

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

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.4.a.	While maintaining outgoing VARS, 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 GEN TO 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".	___	___	___
EVALAUTOR: Request the simulator operator to set the speed droop to "0".					
SIM OP: Set speed droop to "0" using remote function DG01r; mrf DG01r 0.					
CUE: Report to the candidate that 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.	Requests the evaluator to independently verify the EDG frequency and voltage setting.	___	___	___
NOTE: Agree with the settings regardless of actual value.					
CUE: I agree with the voltage and frequency settings.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE: The EDG will STOP running 30 seconds after the candidate places the control switch to stop and back to auto.					
*F.8.	•Stops Diesel Gen.•	Positions U1 DIESEL GEN CONTROL SWITCH to "stop" for 2-3 seconds at panel 901-8.	___	___	___
*F.9.	•Return Diesel Control Switch to AUTO.•	Positions U1 DIESEL GEN CONTROL SWITCH to AUTO.	___	___	___
*F.10.	•Monitors DG cooldown.•	Recognize DG cooldown cycle incomplete.	___	___	___
*F.10.a.	•Restart DG.•	Positions U1 DIESEL GEN CONTROL SWITCH to START.	___	___	___
*F.10.b.	•Place DG C/S in OFF.•	Positions U1 DIESEL GEN CONTROL SWITCH to "STOP" for 2-3 seconds at panel 901-8.	___	___	___
*F.10.c.	•Return DG switch to AUTO.•	Positions U1 DIESEL GEN CONTROL SWITCH to AUTO.	___	___	___
F.11.	Verify DG runs for 8-11 minutes for cooldown.	Allow cooldown time for DG.	___	___	___
CUE: Tell the candidate that the diesel has run for 11 minutes and is now off and that another operator will coordinate the remaining actions.					
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

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

JPM Title: Shutdown the U1 Diesel Generator with Early Trip
JPM Number: SIM F   Revision Number: <u>00</u>
Task Number and Title: **SR-6600-P03.** 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 A2,02   **Rating:** 3.1/3.1

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: <u>20</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

- Transformer 12 to Bus 14 feed breaker was OOS for inspection when Unit 1 scrammed

- The Unit 1 Diesel generator started and loaded.

- The Transformer 12 to Bus 14 feed breaker was returned to service and Bus 14 was re-energized.

- Bus 14-1 has been closed in to NORMAL power supply, however the U1 EDG is still loaded, running in parallel with the grid.

- The Speed Droop is set at 50.

- An NLO will be available to perform actions outside the Control Room.

INITIATING CUE

Shut down the U1 Emergency Diesel Generator in accordance with QCOP 6600-03.

Exelon Nuclear

Job Performance Measure

Perform Post Maintenance Test of the Fuel Pool Radiation Monitor

JPM Number: G

Revision Number: <u>00</u>

Date: <u>03/10/05</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

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

SIMULATOR SETUP INSTRUCTIONS

1) For **ILT 03-01 NRC Exam,** protected **IC #155** was created to allow **JPMs: d, g, & h** to be performed simultaneously if desired. **TWO** files must be copied *from* ZIP disk *to* the S: drive. Steps a-g below only have to be performed ONCE for JPMs d, g, & h.

   a) **VERIFY** Simulator **ISOLATION** for exam security is COMPLETE

   b) **STOP MST**

   c) Connect ZIP drive to a USB port on the Simulator Operator Workstation.

   d) **COPY** file **d_ic.155** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC**

   e) **COPY** file **atsic155.rs** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC\Ats**

   f) **RESTART MST**

   g) **RESET** simulator to IC 155 (enter password) and go to **RUN**

NOTE: IF the IC listed above is not available, OR it is desired to perform this JPM alone, it is okay to use a different IC than one listed above, provided the IC actually used is verified to be compatible with this and other JPMs scheduled to be run concurrently.

2) **IF IC # 155 CAN NOT BE USED THEN:**

   a) Reset simulator to IC 21 and go to **RUN**

   b) Run setup CAEP file **SYS-g** (if available)

3) **VERIFY** the following commands are in the Instructor Summary: (enter in expert mode as necessary)

   a) Override the HIGH light on the 1A Fuel Pool Rad Monitor so that it will NOT illuminate when tested. Override the 1A Fuel Pool Rad Monitor in the RESET state.

   - **ior lorm1170516a2 off**
   - **ior dirm1170516asw2 reset**

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.

INITIAL CONDITIONS

- Three days ago the 1-1705-16A, FUEL POOL RAD MONITOR was declared inoperable due to a faulty connector. IM's have effected repairs, and request that you test it again..

- The US has granted permission to perform the testing.

INITIATING CUE

Perform QCOP 1700-06 to verify proper operation of Fuel Pool Rad Monitor 1-1705-16A.

Provide Candidate with a copy of QCOP 1700-06 and a key for the bypass switch.

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
EVALUATOR: Provide the candidate with a copy of QCOP 1700-06 and a key for the bypass switch.					
C.3	Verifies associated annunciators are clear.	At panel 901-3, verifies alarm windows F2, C16, D16, G16 and H16 are not lit.	___	___	___
F.1	Bypasses the A Fuel Pool Rad Monitor and verifies appropriate alarm lit.	Inserts key into 1-1701-313, FUEL POOL RAD MON CH A BYPASS SWITCH and positions it to BYPASS. Verifies alarm 901-3 F2, PROC RAD MON CALIB BYPASS RB FUEL POOL VENT alarm lit.	___	___	___
EVALUATOR NOTE: The candidate should hold the TRIP CHECK pushbutton referenced in the step until released in step F.6.					
*F.2	•Depresses the trip check•	Depresses and holds the TRIP CHECK pushbutton on the 1-1705-16A.	___	___	___
F.3	Lowers Trip Check Adjust knob.	At power supply 1-1705-7A, turns the TRIP CHECK ADJUST knob fully counterclockwise.	___	___	___
NOTE: In the following step, the candidate may stop after reaching 100 mr OR may continue to full scale. Either is acceptable.					
*F.4	•Checks the high trip setpoint.•	At power supply 1-1705-7A, turns the TRIP CHECK ADJUST knob clockwise until the HIGH lamp is lit on the 1-1705-16A.	___	___	___
*F.4	•Recognizes failure to trip•	Recognizes high trip light was not received at less than 100 mr/hr.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE: IF the candidate reports the failure to trip to the US, respond. "I understand…*(repeat back what was reported*). "Complete the procedure. I will have another Operator write the IR."**					
EVALUATOR NOTE: The candidate may skip the following step since the high trip has failed and the monitor remains inoperable. This should not constitute a failure.					
F.5	Checks low trip setpoint.	At power supply 1-1705-7A, turns the TRIP CHECK ADJUST knob counterclockwise until the LOW lamp is lit on the 1-1705-16A and verifies receipt of alarm 901-3 C16, FUEL POOL CHANNEL A DOWNSCALE	___	___	___
F.6	Resets the trip unit.	Releases the TRIP CHECK pushbutton and depresses RESET on the 1-1705-16B.	___	___	___
F.7	Verifies trip lights clear.	Verifies HIGH and LOW lamps not lit on the 1-1705-16B.	___	___	___
F.8	Verifies alarms clear.	At panel 901-3, verifies alarm D16 not lit.	___	___	___
F.9	Takes the B Fuel Pool Rad Monitor out of bypass and verifies alarm clear.	Places the 1-1701-312, FUEL POOL RAD MON CH B BYPASS SWITCH to NORM\n\nVerifies alarm 901-3 F2 not lit.	___	___	___
F.11	Returns key to Communications Center.	Gives key to examiner.	___	___	___
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____

Job Title: ☐ RO   ☐ SRO

JPM Title: Perform Post Maintenance Test of the Fuel Pool Radiation Monitor

JPM Number: SIM G   Revision Number: 00

Task Number and Title: **SR-1700-K16** STATE the physical location and DESCRIBE the operation of the following Process Radiation Monitoring System controls:

     Reactor Building Vent / Fuel Pool Radiation Monitors
- (1)   Bypass keylock switches
- (2)   Trip check and Reset pushbuttons
- (3)   Trip check adjust knob
- (4)   Power supply On/Off switch
- (5)   RB vent isolation damper reset switch (local 2251(2)-24X) (CR 912-1)

K/A Number and Importance:
                 K/A: 272000.A1.02   **Rating:** 2.9 / 2.9

Suggested Testing Environment:

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: 10   minutes   **Actual Time Used:** _____ minutes

References: QCOP 1700-06

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

- Three days ago the 1-1705-16A, FUEL POOL RAD MONITOR failed to trip as required. IMD has affected repairs, and reports that it is ready to be tested again.

- The US has granted permission to perform the testing.

INITIATING CUE

Perform QCOP 1700-06 for Fuel Pool Rad Monitor 1-1705-16A.

Exelon Nuclear

Job Performance Measure

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

JPM Number: H

Revision Number: 00

Date: 03/10/05

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

| **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 00,** This JPM was modified from LS-044-I for ILT NRC Exam 03-01, IAW NUREG 1021, Rev 9.

SIMULATOR SETUP INSTRUCTIONS

1) For **ILT 03-01 NRC Exam,** protected **IC #155** was created to allow **JPMs: d, g, & h** to be performed simultaneously if desired. **TWO** files must be copied *from* ZIP disk *to* the S: drive. Steps a-g below only have to be performed ONCE for JPMs d, g, & h.

   a) **VERIFY** Simulator **ISOLATION** for exam security is COMPLETE

   b) **STOP MST**

   c) Connect ZIP drive to a USB port on the Simulator Operator Workstation.

   d) **COPY** file **d_ic.155** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC**

   e) **COPY** file **atsic155.rs** from zip drive to directory **S:\Loads\QDCRRC4\Ops\IC\Ats**

   f) **RESTART MST**

   g) **RESET** simulator to IC 155 (enter password) and go to **RUN**

NOTE: IF the IC listed above is not available, OR it is desired to perform this JPM alone, it is okay to use a different IC than one listed above, provided the IC actually used is verified to be compatible with this and other JPMs scheduled to be run concurrently.

2) **IF IC # 155 CAN NOT BE USED THEN:**

   a) **RESET** simulator to IC 21 and go to **RUN**

   b) **START** the ½ B SBGT train and allow to run for ≈ 10 minutes to stabilize d/t

   c) **RUN** setup CAEP file **SYS-h** (if available)

3) **VERIFY** the following commands are in the Instructor Summary: (enter in expert mode as necessary)

   a) Override the B SBGT heater RED light ON, & GREEN light OFF.

   - **ior loil07503b2 ON**
   - **ior loil07503b1 OFF**

4) Fill out a copy of QCOS 7500-05 as follows:

   D.1.a.......................................1/2B
   D.1.b......................................Check "Normal Surveillance"
   D.1.c.......................................Sign name, write "current" for date and time
   D.2 - 3 ....Initial
   H.1...N/A ALL of step H.1
   H.2.a......................................Fill in Start time as "5 hours ago"
   H.2.b - e................................Initial
   H.2.e.(1) ....Fill in 4000 scfm

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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.

INITIAL CONDITIONS

- The plant is shutdown

- QCOS 7500-05, SBGTS MONTHLY OPERABILITY TEST on the B SBGT train was started 5 hours ago.

- An NLO is stationed at 1/2B SBGT train for local actions.

INITIATING CUE

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

Provide the Candidate with QCOS 7500-05, completed as indicated in the setup instructions.

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
EVALUATOR: Provide the candidate the copy of QCOS 7500-05 completed through step H.2.e.(1).					
H.2.f.(1)	Records 1/2B SBGTS flow.	Records 1/2B SBGTS flow (4000 scfm) from ½-7540-13b.	___	___	___
H.2.f.(2)a OR b	Determine 1/2B SBGTS inlet temp.	Remotely from SBGTS B heater diff. temp indicator on Panel 912-5 **OR** Directs NLO to obtain "B" train upstream & downstream temp. from TI ½-7541-10B and 13B respectively. RECORDS after cue.	___	___	___
CUE: IF NLO is dispatched to read local temperature indicators report: • **upstream temperature on TI ½-7541-10B is 87°F.** • **downstream temperature on TI ½-7541-13B is 105°F.**					
	Determine 1/2B SBGTS outlet temp.	Directs NLO to obtain "B" train outlet temp. from TI ½-7541-13B and records after cue.	___	___	___
	Calculate heater dT.	Determines htr dT is 19°F by subtracting inlet temp. from outlet temp. and records.	___	___	___
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 $\pm$ .05(ave), 2.0(init IR) ½-7541-9B.	Directs NLO to obtain and report Demister DP. Records on surv.	___	___	___
CUE: DP indicated on ½-7541-9B is 1.0 inch					
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.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE: DP indicated on the ½-7541-12B is 0.3 inches					
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 indicated on the ½-7541-14B is 1.1 inches					
H.2.k.	Record Carbon Iodine Absorb. DP (.95 $\pm$ 15(ave)), 2.0(init IR), ½-7541-16B.	Directs NLO to obtain and report Carbon Iodine Absorb DP. Records on surv.	___	___	___
CUE: DP indicated on the ½-7541-16B is 0.9 inches					
H.2.l.	Record HEPA filter DP (1.0(ave)), 1.8(init IR), ½-7541-18B.	Directs NLO to obtain and report HEPA Filter DP. Records on surv.	___	___	___
CUE: DP indicated on the ½-7541-18B is 1.0 inch					
H.2.m.	Calculate total Differential Pressure.	Calculates total DP to be 3.3". Records on surveillance. Has number second verified.	___	___	___
CUE: Sign as the verifier, REGARDLESS of what value is recorded.					
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: The B SBGT train has now been running for 10 hours.					
H.2.p.*	•Shutdown "B" SBGTS.•	Positions 1/2B SBGTS TRAIN MODE SELECTOR SWITCH to B OFF.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
EVALUATOR: In the next step, if the operator ask for the US, inform him that he is around the back panels of U-1.					
CAUTION*	Recognize failure of heater to turn off . •restarts "B" SBGT Train.•	Recognizes "B" train air heater ON light lit for > 10 seconds <div align=center>THEN</div> Restarts train by positioning "B" train mode selector switch to START.	___	___	___
	Inform US.	Tells the US that the heater did not stop after shutting down the train and the train was restarted.	___	___	___
CUE: I understand the heater did not turn off when the train was shutdown. Leave the "B" train operating AND SUSPEND the surveillance until I can contact Maintenance for troubleshooting. I will prepare an Issue Report and inform the Shift Manager.					
CUE: The candidate should inform you the task is complete here.					

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: SIM H Revision Number: 00

Task Number and Title: **SR-7500-P01** 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 A4.03 **Rating:** 3.0/3.0

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: _15_ 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 shutdown

- QCOS 7500-05, SBGTS MONTHLY OPERABILITY TEST on the B SBGT train was started 5 hours ago.

- An NLO is stationed at 1/2B SBGT train for local actions.

INITIATING CUE

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

Provide the Candidate with QCOS 7500-05, completed as indicated in the setup instructions.