INITIAL SUBMITTAL OF THE SIMULATOR JPMS

FOR THE LASALLE INITIAL EXAMINATION - MARCH 2005

Exelon Nuclear

Job Performance Measure

Downshift RR to Slow with One Pump Tripping to Off

JPM Number: NRC-Simulator-01

Revision Number: 00

Date: 11/03/2004

Developed By: _____ _____
Instructor **Date**

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

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

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 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 written by J.E. Ross for the 2003-01 ILT NRC Exam given on the week of 03/07/2005. It was modeled after LaSalle County Station JPM S-RR-08.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC 115 (Ready to downshift RR)

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. Load the Computer Aided Exercise Program from the JPM Floppy disk (NRC-Simulator-01.0.cae) or manually enter the following:
   - imf mrc015 (1B RR Pump trips to Off during downshift)

3. Remove the >95.2% FCL placard.

4. Silence, Acknowledge and Reset the annunciators. Then Acknowledge the Process Computer Alarms.

5. Clear BOTH Sequence of Events Recorder (SER) monitor screens.

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

7. This completes the setup for this JPM.

ASSOCIATED CAEPs

```
# Setup for NRC Simulator JPM Simulator-01
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-01.0.cae
##########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
##########################################################################
# This is an Alternate Path JPM. The examinee will downshift RR Pumps
# Per LOP-RR-08 and the 1B RR Pump will fail to go to slow speed. The
# examinee will end up with one pump in slow and one pump off
# requiring actions per LOA-RR-101.
#

# 1B RR Pump trips to OFF when downshifting
imf mrc015

# This ends this CAEP.
```

INITIAL CONDITIONS

You are the Unit-1 Assist NSO:

- A normal unit shutdown is in progress per LGP-2-1.
- LGP-2-1 is completed up to step E.1.6.
- 1A and 1B LFMG pre-start checks have been completed satisfactorily.
- Power has been reduced as low as possible in preparation for the downshift.
- RR Hydraulic system is in operation per LOP-RR-03, Startup, Operation and Shutdown of Reactor Recirc Hydraulic Power Unit.

INITIATING CUE

The Unit Supervisor has directed you to downshift the Reactor Recirculation (RR) pumps per LOP-RR-08. Inform the Unit Supervisor when both RR pumps are downshifted.

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 examinee 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 examinee acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	Another NSO will address all balance of plant alarms.				
*N/A	Obtains copy of LOP-RR-08.	• Obtains copy of LOP-RR-08			
CUE	After examinee demonstrates ability to obtain a current copy of the procedure, give him a copy of LOP-RR-08.				
B.2	Checks Reactor Power has been reduced as low as practical to reduce transients. Checks Flow Control Line <66.7% to ensure instability regions are avoided.	Checks flow ~60% and FCL <66.7%.	___	___	___
CUE	If asked, tell the examinee that Reactor Power has been reduced as low as possible in preparation of the downshift.				
B.3	Reviews LOA-RR-101.	Reviews LOA-RR-101	___	___	___
C. and D.	Reviews PRECAUTIONS and LIMITATIONS section of LOP-RR-08.	Reviews Precaution and Limitations.	___	___	___
E.1	Prior to shifting to slow speed:				
E.1.1	1G33-F101 should be open to ensure >25 gpm bottom head drain flow for correct temperature indication and to eliminate thermal stratification in the bottom head.	At 1H13-P602, VERIFIES 1G33-F101 open and RT Bottom Head Flow >25 gpm.	___	___	___
E.1.2	At 1DS001 on RRFC Process Overview Screen, CHECK "Accumulated Time for Delta Temp Low"	CHECKS "Accumulated Time for Delta Temp Low" for both RR pumps.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
E.1.3.1	Logs accumulated time for delta temp low.	N/A			
CUE	Tell the examinee that another operator will make the Unit-1 Log entry.				
E.1.3.2	Notifies System Engineer of the accumulated time.	N/A			
CUE	Tell the examinee that another operator will notify the System Engineer.				
E.2	VERIFY FCL is ≤66.7%, or value determined by QNE.	VERIFIES FCL is ≤66.7% by at least one of the following: o Power to Flow Map o OD-3	___	___	___
CUE	If requested, then as the QNE state that they should use the FCL value given in the procedure.				
*E.3 and E.3.1	CLOSE MG Set Motor Feed Breakers 1A and 1B. VERIFY LFMG output voltage increases to 600 volts in <30 seconds.	• PLACES handswitch for 1A(1B) LFMG Set to CLOSE and VERIFIES breaker closes.	___	___	___
		o VERIFIES 1A(1B) LFMG output voltage is 600 volts in less than 30 seconds.	___	___	___
*		• PLACES handswitch for 1B(1A) LFMG Set to CLOSE and VERIFIES breaker closes.	___	___	___
		o VERIFIES 1B(1A) LFMG output voltage is 600 volts in less than 30 seconds.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	During the next step, the 1B RR Pump will trip to OFF and 1A RR Pump will correctly downshift to Slow Speed.				
NOTE	Annunciator 1H13-P603-A309, FW Control Rx Vessel Lvl 7, may alarm when the RR pumps are downshifted. If so, give the CUE below, stating that another operator will respond to that annunciator.				
*E.4	TURN Motor Control Breaker 3 Control Switches for both 1A and 1B RR Pumps to the TRANSFER-MG position, and observe normal slow speed running indication on both pumps.	• Simultaneously places both 1A and 1B control switches for breaker 3 to the TRANSFER-MG position.	___	___	___
CUE	The Unit NSO will respond to annunciator 1H13-P603-A309.				
*		• OBSERVES Breaker 2B FAILED to close and that 1B RR Pump trips to OFF.	___	___	___
		o OBSERVES proper indications that 1A RR Pump downshifted to Slow Speed.	___	___	___
NOTE	LOP-RR-08, steps E.5 through E.10.1 may be delayed until after actions of LOA-RR-101 are completed.				
N/A	NOTIFIES the Unit Supervisor that 1B RR Pump has tripped to Zero speed (Off).	Examinee notifies the Unit Supervisor that the 1B RR pump has tripped to zero speed.	___	___	___
CUE	As the Unit Supervisor, acknowledge the report and direct the examinee to take actions per the "appropriate" procedures and INFORM the Unit Supervisor after the 1B RR Pump breakers are in PTL per the procedure.				
*N/A	Enters LOA-RR-101	• Examinee OBTAINS copy of LOA-RR-101.	___	___	___
*B.2.1	CHECK at least one Recirculation Pump is operating.	• VERIFIES 1A RR Pump is running.	___	___	___
B.2.2	PERFORM Subsection B.1, Core Instabilities, while continuing below.	DIRECTS the Unit NSO to PERFORM Subsection B.1.	___	___	___
CUE	Inform the examinee that the Unit NSO will check for instabilities by performing Section B.1 of LOA-RR-101 for the examinee.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*B.2.3	VERIFY both RR Loop M/A stations are in MANUAL.	• PLACES both RR Loop Controllers in MANUAL.	___	___	___
B.2.4	CHECK operating RR Pump in HIGH SPEED.	DETERMINES that 1A RR Pump is NOT Running in HIGH SPEED.	___	___	___
*B.2.4.1	OPEN FCV on LOW SPEED RR Pump.	• DEPRESSES the INCREASE push button on the 1A Loop Controller until the FCV position indicates 100% open.	___	___	___
NOTE	The actions described in the following step may be lumped together as one communication with the Unit Supervisor (US) with the expectation that the US makes the appropriate calls to the QNE and IMD.				
B.2.5	INITIATE required actions of Technical Specification 3.4.1 for Single Loop Operation.	INFORMS the Unit Supervisor to reference TS 3.4.1 for Single Loop Operations.	___	___	___
		INFORMS the Qualified Nuclear Engineer (QNE).	___	___	___
		NOTIFIES IMD to perform LIP-NR-519A/B.	___	___	___
CUE	As the Unit Supervisor, acknowledge the reference to Technical Specifications. As the QNE, acknowledge the report from the operator. As IMD, acknowledge the request to perform LIP-NR-519A/B.				
B.2.6	NOTIFY IMD to perform LIS-NR-107, Unit 1 APRM/RBM Flow Converter to Total Core Flow Adjustment.	Requests that IMD performs LIS-NR-107.	___	___	___
CUE	Acknowledge the examinees request to IMD and tell the examinee that the actions of LIS-NR-107 will be completed in the required time.				
*B.2.7	DECREASE FCV position to minimum for tripped RR Pump.	• DEPRESSES the LOWER push button on the 1B Loop Controller until the FCV position indicates ~20% open.	___	___	___
B.2.8	WHEN less than 350 rpm, PLACE all breakers for tripped RR Pump in PTL.	PLACES 1B, 2B, 3B and 4B RR Pump breakers in PTL.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
N/A	Informs the Unit Supervisor that 1B RR Pump Breakers are in PTL.	Examinee tells the Unit Supervisor that 1B RR Pump Breakers are in PTL per LOA-RR-101.	___	___	___
CUE	As the Unit Supervisor, acknowledge the report and tell the examinee that this JPM is complete. Record completion time in the block below.				

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☐ RO ☒ SRO ☐ STA ☐ SRO Cert

JPM Title: Downshift RR to Slow with One Pump Tripping to Off
JPM Number: NRC-Simulator-01 **Revision Number:** 00

Task Number and Title:
22.004 Given Unit Supervisor authorization, transfer Reactor Recirculation Pumps from Fast to Slow Speed, per station procedures.

K/A Number and Importance:
202001 Recirculation System A3.08 Ability to monitor automatic operation of the RECIRCULATION SYSTEM including: Pump downshift 3.4/3.3

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 30 minutes **Actual Time Used:** ____ minutes

References:
LOP-RR-08, Changing Reactor Recirculation Pump Speed From Fast to Slow Speed, Revision 28
LOA-RR-101, Unit 1, Reactor Recirculation System Abnormal, Revision 16

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 Assist NSO:

- A normal unit shutdown is in progress per LGP-2-1.
- LGP-2-1 is completed up to step E.1.6.
- 1A and 1B LFMG pre-start checks have been completed satisfactorily.
- Power has been reduced as low as possible in preparation for the downshift.
- RR Hydraulic system is in operation per LOP-RR-03, Startup, Operation and Shutdown of Reactor Recirc Hydraulic Power Unit.

INITIATING CUE

The Unit Supervisor has directed you to downshift the Reactor Recirculation (RR) pumps per LOP-RR-08. Inform the Unit Supervisor when both RR pumps are downshifted.

Exelon Nuclear

Job Performance Measure

Initiate RCIC for Level Control per LOP-RI-02 with failure of 1E51-F046 to Automatically Open

JPM Number: NRC-Simulator-02

Revision Number: 00

Date: 11/03/2004

Developed By: _____ _____
Instructor **Date**

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

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

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 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 written by J.E. Ross for the 2003-01 ILT NRC Exam given on the week of 03/07/2005.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC 114 (Created by scramming from full-power; HPCS in PTL; FW secured; Level stabilized at approximately +12 inches).

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. Load the Computer Aided Exercise Program from the JPM Floppy disk (NRC-Simulator-02.0.cae) or manually enter the following:
   - set vmrj046r = 1e6
   - trgset 25 "k1p26jnm .GE. 0.9"
   - trg 25 "set vmrj046r = 20"
   - trgset 26 "q1p26rrm .GE. 0.9"
   - imf r0551 (26 1:00) 1
   - trgset 27 "k1k29psm .GE. 1"
   - trg 27 "dmf r0551"

3. Silence, Acknowledge and Reset the annunciators. Then Acknowledge the Process Computer Alarms.

4. Clear BOTH Sequence of Events Recorder (SER) monitor screens.

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.

ASSOCIATED CAEPs

```
# Setup for NRC Simulator JPM Simulator-02
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-02.0.cae
##########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
##########################################################################
# This is an Alternate Path JPM. The examinee will start RCIC for
# level control per LOP-RI-02. The RCIC Lube Oil Cooling Water Valve,
# 1E51-F046 will fail to automatically open. When the examinee
# manually opens 1E51-F046, the annunciator 1H13-P601-D102, RCIC
# Barometric Vacuum Tank Pressure High, will alarm. The LOR will
# require shutting RCIC down per LOP-RI-03.
#

# Prevent opening 1E51-F046 RCIC Lube Oil Cooling Water Valve
set vmrj046r = 1e6

# Automatic Event Trigger 25
# Allows manually opening 1E51-F046
trgset 25 "k1p26jnm .GE. 0.9"
trg 25 "set vmrj046r = 20"

# Automatic Event Trigger 26
# Inset r-point for Vacuum Tank High Pressure when 1E51-F046 is open
trgset 26 "q1p26rrm .GE. 0.9"
imf r0551 (26 1:00) 1

# Automatic Event Trigger 27
# Deletes r-point malfunction allowing Vacuum Tank alarm to reset
trgset 27 "k1k29psm .GE. 1"
trg 27 "dmf r0551"


# This ends this CAEP.
```

INITIAL CONDITIONS

You are the Unit-1 NSO:

- A transient and reactor scram has occurred
- Due to loss of other high-pressure injection sources, RCIC is needed for level control.
- LOP-RI-05, Preparation for Standby Operation of RCIC is complete.
- NO maintenance has been done on RCIC, NOR have the lube oil filters be changed.

INITIATING CUE

The unit supervisor has directed you to initiate the RCIC system using the manual initiation pushbutton for level control per LOP-RI-02 step E.1. Report to the Unit Supervisor when the RCIC flow has been verified per the procedure.

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
*N/A	Obtains copy of LOP-RI-02.	• Obtains copy of LOP-RI-02.			
CUE	After examinee demonstrates ability to obtain a current copy of the procedure, give him a copy of LOP-RI-02.				
*E.1.1	ARM and DEPRESS the RCIC Manual Initiation Push-button.	• Arms and depresses the manual initiation pushbutton.	___	___	___
NOTE	During the following step the examinee will discover that the 1E51-F046 (RCIC Lube Oil Clg Water Vlv) has failed to automatically open. He should place the handswitch in to OPEN and then continue verifying the other automatic functions. One minute after 1E51-F046 is full open, annunciator 1H13-P601-D102, RCIC Barometric Condenser Vacuum Tank Pressure High annunciator will alarm. The examinee is expected to follow the actions of the annunciator. For JPM grading purposes the evaluator should jump ahead to step B.1 (page 8 of this JPM) for the annunciator response and then return to where the examinee left off. Mark the remaining steps of LOP-RI-02 as N/A.				
*E.1.2	VERIFY automatic operation of the following equipment and valves on panel 1H13-P601.	o VERIFY 1E51-C005, Barometric Condenser Vacuum Pump STARTS.	___	___	___
		o VERIFY 1E51-F045, RCIC Turbine Steam Inlet Valve OPENS	___	___	___
		o DETERMINES 1E51-F046, RCIC Lube Oil Cooling Water Valve is CLOSED.	___	___	___
*		• OPENS 1E51-F046, RCIC Lube Oil Cooling Water Valve.	___	___	___
		o VERIFY 1E51-F013, RCIC Pump Injection Valve OPENS.	___	___	___
		o VERIFY 1E51-F059, RCIC Pump Test to CY Downstream Valve CLOSES.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
		o VERIFY 1E51-F022, RCIC Pump Test to CY Upstream Valve CLOSES.	___	___	___
		o VERIFY 1E51-F025, RCIC Steam Drain Pot Outlet Upstream Stop CLOSES.	___	___	___
		o VERIFY 1E51-F026, RCIC Steam Drain Pot Outlet Downstream Stop CLOSES.	___	___	___
		o VERIFY 1E51-F004, Barometric Condenser Condensate Pump Upstream Stop CLOSES.	___	___	___
		o VERIFY one of the two RCIC Suction Valves is open 1E51-F031, or 1E51-F010.	___	___	___
		o CHECK annunciators 1H13-P601-D406 and D508 are alarming	___	___	___
NOTE	When 1H13-P601-D102 alarms the examinee will take actions per the LOR procedure as indicated in the following steps.				
B.1	VERIFY 1E51-F069, RCIC Condenser Vacuum Pump Discharge Valve is OPEN and proper operation of 1E51-C005, RCIC Condenser Vacuum Pump.	VERIFIES 1E51-F069 is OPEN.	___	___	___
		VERIFIES 1E51-C005 is RUNNING.	___	___	___
NOTE	The following step may have been completed by the examinee earlier. If so, then it is okay to mark this step completed satisfactorily based on your previous observation of the step.				
***B.2**	VERIFY 1E51-F046, RCIC Lube Oil Cooling Water Valve is OPEN.	• Places handswitch for 1E51-F046 to OPEN	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
B.3	IF emergency condition requires continued operation of RCIC with a high vacuum tank pressure alarm, RCIC can operate without barometric condenser.	o DISCUSS with the Unit Supervisor the continued operation of RCIC.	___	___	___

CUE	If asked, as the Unit Supervisor tell the examinee that an Emergency EXISTS and RCIC can continue to operate without the barometric condenser.
Termination	Tell the student that this JPM is complete and enter the JPM Stop Time in the blank provided below.

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☒ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Initiate RCIC for Level Control per LOP-RI-02 with failure of 1E51-F046 to Automatically Open
JPM Number: NRC-Simulator-02 **Revision Number:** 00

Task Number and Title:
217000 Lineup the reactor core isolation cooling (RCIC) system

K/A Number and Importance:
217000 2.1.29 Knowledge of how to conduct and verify valve lineups 3.4/3.3

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 15 minutes **Actual Time Used:** ____ minutes

References:
LOP-RI-02, Operation of the Reactor Core Isolation Cooling System for Level Control, Revision 30
LOR-1H13-P601-D102, RCIC Baro Cndsr Vac Tank Press Hi, Revision 02

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 NSO:

- A transient and reactor scram has occurred
- Due to loss of other high-pressure injection sources, RCIC is needed for level control.
- LOP-RI-05, Preparation for Standby Operation of RCIC is complete.
- NO maintenance has been done on RCIC, NOR have the lube oil filters be changed.

INITIATING CUE

The unit supervisor has directed you to initiate the RCIC system using the manual initiation pushbutton for level control per LOP-RI-02 step E.1. Report to the Unit Supervisor when the RCIC flow has been verified per the procedure.

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Job Performance Measure

Manually Operate SRVs and then Reset LLS as Directed

JPM Number: NRC-Simulator-03

Revision Number: 00

Date: 11/04/2004

Developed By: _____ _____
Instructor **Date**

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

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

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 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 written by J.E. Ross for the 2003-01 ILT NRC Exam given on the week of 03/07/2005.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any full power IC (IC-130).

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. IF you want to run this JPM "stand-alone," then use the following setup: Load the Computer Aided Exercise Program from the JPM Floppy disk (NRC-Simulator-04.0.cae) or manually enter the following:
   - imf mcf090
   - imf mnb104(5) 50
   - trgset 10 "(q3j081wb .LT. 0.5) .AND. (q3j091wb .LT. 0.5)"
   - trg 10 "dmf mnb104"
   - trgset 11 "(q3j081wb .LT. 0.5) .AND. (q3j091wb .LT. 0.5)"
   - ior k4k06pty(11) pushed
   - ior k4j04pty(11) pushed
   - ior k4h07jcy(11) close
   - ior k4h04jcy(11) close
   - ior k1k29psm(11) pushed
   - ior k3g09w17(11) shutdown
   - ior k1k03jcl(11) close

3. Place the simulator in RUN and then activate Event Trigger 5 to put in small steam leak. VERIFY that Automatic Event Triggers 10 and 11 go true when the reactor scrams, then take scram actions per the scram hardcard. *(The idea here is to have pressure high in the RPV and high in the Drywell and have low RPV level.)*

4. Silence, Acknowledge and Reset the annunciators. Then Acknowledge the Process Computer Alarms.

5. Clear BOTH Sequence of Events Recorder (SER) monitor screens.

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

7. This completes the setup for this JPM.

ASSOCIATED CAEPs

```
# Setup for NRC Simulator JPM Simulator-03
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-03.0.cae
#########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
#########################################################################
# This is a normal (non-alternate path) JPM. The examinee will be
# directed to open SRVs to reduce RPV pressure to 800 psig. When
# pressure is approximately 800 psig and the SRV have been returned to
# AUTO, the examinee will be directed to reset the LLS logic.
#

# Prevent operation of MDRFP (locked rotor)
imf mcf090

# Insert at small steam leak to get High DW Pressure initiations and
# RPS Scram.
imf mnb104 50

# Automatic Event Trigger 10
# Delete steam leak after the scram (group scram lights are out)
trgset 10 "(q3j081wb .LT. 0.5) .AND. (q3j091wb .LT. 0.5)"
trg 10 "dmf mnb104"

# Automatic Event Trigger 11
# Trip TDRFPs and close discharge valves, trip the RCIC turbine, and
# place the mode switch in SHUTDOWN to keep RPV level low and RPV
# pressure high following the scram. Also close the HPCS injection
# to keep RPV level low.
trgset 11 "(q3j081wb .LT. 0.5) .AND. (q3j091wb .LT. 0.5)"
ior k4k06pty(11) pushed
ior k4j04pty(11) pushed
ior k4h07jcy(11) close
ior k4h04jcy(11) close
ior k1k29psm(11) pushed
ior k3g09w17(11) shutdown
ior k1k03jc1(11) close

# This ends this CAEP.
```

INITIAL CONDITIONS

You are an Extra NSO on Unit-1:

- The LGAs have been entered on Unit-1.

INITIATING CUE

Per LGA-001, the Unit Supervisor has directed you to lower Unit-1 RPV pressure to 800 psig using TWO SRVs.

Inform the Unit Supervisor when pressure is 800 psig.

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
NOTE	The Low-Low-Setpoint (LLS) logic automatically initiates when two SRVs are full-open at the same time. The control room hand switches operate SRV solenoids in Division 1 and therefore Division 1 LLS logic will actuate. This can be confirmed by annunciator window 1H13-P601-F106 alarming.				
NOTE	The Examinee should observe administrative controls associated with manually operating SRVs while performing steps of this JPM, specifically, do NOT simultaneously place both SRV handswitches in OPEN. The first SRV should be verified open prior to placing the second handswitch in OPEN.				
*1.	OPEN first Safety Relief Valve.	• Takes handswitch for any SRV to OPEN and VERIFIES OPEN indication.	___	___	___
*2.	OPEN second Safety Relief Valves.	• Waits for open indication on first SRV then, takes handswitch for a second SRV to OPEN and VERIFIES OPEN indication.	___	___	___
NOTE	The following steps (steps 3, 4, 5, and 6) can be performed in any order.				
3.	OBSERVES RPV Pressure decrease to 800 psig.	o MONITORS any Wide Range Pressure indication and OBSERVES RPV pressure decreasing.	___	___	___
*4.	RETURNS Safety Relief Valve handswitches to AUTO when desired pressure is reached.	• When RPV Pressure is approximately 800 psig, PLACES handswitches for both SRVs opened above to AUTO and VERIFIES CLOSED indication.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
5.	REVIEWS annunciator procedure LOR-1H13-P601-F106.	DETERMINES annunciator LOR-1H13-P601-F106 is expected for initiating LLS.	___	___	___
CUE	When informed of LLS Initiation, then as the Unit Supervisor acknowledge the LLS report.				
6.	REVIEWS other annunciator procedures associated with opening SRVs.	DETERMINES that these annunciators are expected when manually opening SRVs.	___	___	___
CUE	When informed of the status of other SRV related annunciators, then as the Unit Supervisor, acknowledge the report.				
CUE	After the examinee has responded to the annunciators, then DIRECT the examinee to "RESET Low-Low-Set and report to the Unit Supervisor when the LLS logic has been VERIFIED RESET."				
*7.	RESETS Division 1 LLS Logic.	• DEPRESSES the Division 1 LLS Reset Pushbutton.	___	___	___
NOTE	Examinee may also depress the Division 2 LLS Reset Pushbutton. This is not required, and it does VERIFY that both divisions of LLS are reset.				
*8.	VERIFIES annunciator for Division 1 LLS resets.	• VERIFIES annunciator window 1H13-P601-F106 resets.	___	___	___
9.	Reports to the Unit Supervisor.	Tell the Unit Supervisor that the Low-Low-Setpoint logic has been reset.	___	___	___
CUE	Acknowledge report as Unit Supervisor and tell the student that this JPM is complete. Record completion time in the block below.				

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Manually Operate SRVs and then Reset LLS as Directed

JPM Number: NRC-Simulator-03 **Revision Number:** 00

Task Number and Title:
410.000 Given entry in LGA-001, RPV Control, with the main turbine bypass valves unavailable, stabilize RPV pressure per station procedures.

K/A Number and Importance:
239002 Relief/Safety Valves A4.01 Ability to manually operate and/or monitor in the control room: SRVs 4.4/4.4

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 8 minutes **Actual Time Used:** ____ minutes

References:
LGA-001, RPV Control (Pressure Control Leg), Revision 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

You are an Extra NSO on Unit-1:

- The LGAs have been entered on Unit-1.

INITIATING CUE

Per LGA-001, the Unit Supervisor has directed you to lower Unit-1 RPV pressure to 800 psig using TWO SRVs.

Inform the Unit Supervisor when pressure is 800 psig.

Exelon Nuclear

Job Performance Measure

Synchronize and Load the Main Generator

JPM Number: NRC-Simulator-04

Revision Number: 00

Date: 01/20/2005

Developed By: _____ _____
Instructor **Date**

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

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

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 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 written by J.E. Ross for the 2003-01 ILT NRC Exam given on the week of 03/07/2005.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to an IC with the main turbine At Set Speed and ready to close the exciter breaker field breaker (IC-020)

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. Place the simulator in RUN.

3. Silence, Acknowledge and Reset the annunciators.

4. VERIFY the following:
   - Process Computer Alarms are ACKNOWLEDGED
   - Exciter Field Breaker is GREEN Flagged
   - Generator Voltage Regulator is in MANUAL (GREEN Flagged)
   - Main Turbine Bypass Valve #2 indication is not fluctuating [g5f02g16 –60(-40 in expert)]
   - Override the PMG Malfunction indications (imf r0799 off, ior q5ksw6 off, ior q5k36sw6 off)

5. Clear BOTH Sequence of Events Recorder (SER) monitor screens.

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

7. This completes the setup for this JPM.

ASSOCIATED CAEPs

NONE

INITIAL CONDITIONS

You are the Unit-1 NSO:

- Unit-1 is starting up after an extended outage.
- The Main Turbine is At Set Speed (~1800 rpm).
- LOP-TG-02 is complete up to step E.24 on page 18
- An operator is standing by to assist you.

INITIATING CUE

The Unit Supervisor has directed you to continue with LOP-TG-02 starting at step E.24.

Inform the Unit Supervisor when ready to place the Generator Voltage Control in AUTOMATIC.

Fill in the JPM Start Time and provide a marked up copy of LOP-TG-02 to the Examinee when the examinee 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
NOTE	All steps of this JPM are to be completed at control room panels 1PM01J and 1PM02J unless otherwise stated.				
E.24	VERIFY the following:				
	Generator Field Volts Adjust at minimum position.	VERIFIES LOWER LIMIT light is ON.	___	___	___
	Generator Regulator Mode Transfer in MANUAL.	VERIFIES GENERATOR REGULATOR MODE TRANSFER is in MANUAL.	___	___	___
	Generator Voltmeter Selector is NOT OFF.	VERIFIES GENERATOR VOLTMETER SELECTOR is in A-B, B-C, or C-A (not in OFF).	___	___	___
E.26 and E.27	Per the CAUTION before Step E.25, REVIEWS Steps E.26 and E.27.	REVIEWS the IF/THEN statements for possible malfunctions of the voltage regulator prior to closing the Field Breaker.	___	___	___
***E.25**	CLOSE Generator Field Breaker and OBSERVE the following:	• CLOSES the GENERATOR FIELD BREAKER	___	___	___
	Generator Field Volts indication rises	OBSERVES rising indication on meter 1E1-MP002 U1 GENERATOR FIELD VOLTS.	___	___	___
	Generator Kilovolts indication rises	OBSERVES rising indication on meter 1E1-MP021 U1 GENERATOR KILOVOLTS.	___	___	___
E.26 and E.27	IF Generator Kilovolts rises to 26 KV OR has NOT risen after ten seconds, then take corrective actions.	Determines that Generator Voltage rises satisfactorily.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
E.28	VERIFY Generator Kilovolts indicates 18 KV to 22 KV.	OBSERVES 18 KV to 22 KV indication on meter 1E1-MP021.	___	___	___
E.29	With Voltage regulator out of service, REFER to Figure 2 for safe operation.	DETERMINES this step is NOT applicable.			
*E.30	Raise Generator Kilovolts to 23.5 KV to 24.0 KV.	• Uses GENERATOR FIELD VOLTS ADJUST switch to RAISE voltage to between 23.5 KV and 24.0 KV as indicated on meter 1E1-MP021.	___	___	___
E.31	Check all three phases of generator voltage approximately 23.7 KV	ROTATES GENERATOR VOLTMETER SELECTOR through positions A-B, B-C, and C-A and OBSERVES voltage approximately 23.7 KV and approximately equal between phases.	___	___	___
E.32	Notify Electric Operations Power Operations that U1 Main Generator is ready to synchronize to the grid.	Either informs the Unit Supervisor to make the notification or states his intention to INFORM Power Operations that Unit-1 Generator is ready to synchronize to the grid.	___	___	___
CUE	As the Unit Supervisor acknowledge that the Unit-1 Generator is ready to synchronize to the grid.				
E.33	At Panel 0PM11J:				
	Verify OCB 9-10 Auto Recloser Cutout is OFF	VERIFIES OCB 9-10 Auto Recloser Cutout switch is in OFF.	___	___	___
	Verify OCB 10-11 Auto Recloser Cutout is OFF	VERIFIES OCB 10-11 Auto Recloser Cutout switch is in OFF.	___	___	___
	Verify 345 KV Bus Tie 9-10 OCB is NOT in Pull-To-Lock.	VERIFIES OCB 9-10 control switch is NOT in PTL.	___	___	___
	Verify 345 KV Bus Tie 10-11 OCB is NOT in Pull-To-Lock.	VERIFIES OCB 10-11 control switch is NOT in PTL.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
E.34	Verify the following control switches are NOT in Pull-To-Lock:				
	Bus Tie 9-10 OCB	At 1PM01J, VERIFIES OCB 9-10 control switch is NOT in PTL.	___	___	___
	Bus Tie 10-11 OCB	At 1PM01J, VERIFIES OCB 10-11 control switch is NOT in PTL.	___	___	___
*E.35	Places one of the following in ON: - OCB 9-10 Synchroscope - OCB 10-11 Synchroscope	• PLACES the Synchroscope switch for OCB 9-10 (10-11) to ON.	___	___	___
*E.36	Adjust Generator speed so generator output frequency is slightly higher than grid frequency.	• ADJUSTS LOAD SET pushbuttons until GENERATOR SYNCHROSCOPE is rotating slowly in the FAST direction.	___	___	___
E.37	Adjust Generator output voltage slightly higher than grid voltage.	ADJUSTS GENERATOR FIELD VOLTS ADJUST switch until INCOMING VOLTS is slightly higher than RUNNING VOLTS.	___	___	___
E.38	VERIFY the following:				
	Generator Synchroscope rotating slowly in the Fast direction.	VERIFIES GENERATOR SYNCHROSCOPE is rotating slowly in the fast direction (may make adjustments).	___	___	___
	Generator Incoming Volts reading slightly higher than Generator Running Volts.	VERIFIES GENERATOR INCOMING VOLTS meter is reading slightly higher than GENERATOR RUNNING VOLTS meter (may make adjustments).	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*E.39.1	Parallel and close generator OCB 9-10(10-11).	• Just prior to GENERATOR SYNCHROSCOPE reaching the 12 o'clock position take the handswitch for the selected OCB to CLOSE and CHECK OCB closes.	___	___	___
*E.39.2	Immediately apply load to the Generator by closing the Bypass Valves.	• Immediately DEPRESS and HOLD the LOAD SET INCREASE button until all Turbine Bypass Valves are CLOSED.	___	___	___
E.40	Turn the selected synchroscope OFF.	PLACES the Synchroscope switch of OCB 9-10 (10-11) to OFF.			
*E.41	Places the synchroscope for the second OCB to ON.	• PLACES the Synchroscope switch for OCB 10-11 (9-10) to ON.	___	___	___
E.42	CHECK the following:				
	Generator Synchroscope meter at the 12 o'clock position.	CHECKS GENERATOR SYNCHROSCOPE is pointing at the 12 o'clock position.	___	___	___
	Generator Incoming Volts and Generator Running Volts are approximately equal.	CHECKS GENERATOR INCOMING VOLTS meter and GENERATOR RUNNING VOLTS meter are reading approximately equal.	___	___	___
E.43	If desired, INSTALL a jumper per to bypass the HACR relay.	DETERMINES that HACR relay does NOT need bypassed (asks Unit Supervisor).	___	___	___

CUE	If asked, respond as the Unit Supervisor that it is NOT desirable to bypass the HACR relay and direct the examinee to continue with the procedure.

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*E.44	Close the second OCB.	• Place the OCB 10-11 (9-10) handswitch to CLOSE and VERIFY OCB 10-11 (9-10) closes.	___	___	___
E.45	Turn the selected synchroscope OFF.	PLACES the Synchroscope switch of OCB 9-10 (10-11) to OFF.	___	___	___
N/A	Reports to the Unit Supervisor.	Tells the Unit Supervisor that the Generator is Loaded and ready for placing generator voltage control in automatic.	___	___	___

CUE	As the Unit Supervisor, acknowledge the report.
Termination	Tell the student that this JPM is complete and enter the JPM Stop Time in the blank provided below.

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Synchronize and Load the Main Generator

JPM Number: NRC-Simulator-04 **Revision Number:** 00

Task Number and Title:
71.010 Given Unit Supervisor authorization, perform actions for Main Turbine startup and synchronization, per station procedures.

K/A Number and Importance:
245000 Main Turbine Generator and Controls, A4.02 Ability to manually operate and/or monitor in the control room: Generator controls 3.1/2.9

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 20 minutes **Actual Time Used:** ____ minutes

References:
LOP-TG-02, Turbine Generator Startup, Revision 47

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 NSO:

- Unit-1 is starting up after an extended outage.
- The Main Turbine is At Set Speed (~1800 rpm).
- LOP-TG-02 is complete up to step E.24 on page 18
- An operator is standing by to assist you.

INITIATING CUE

The Unit Supervisor has directed you to continue with LOP-TG-02 starting at step E.24.

Inform the Unit Supervisor when ready to place the Generator Voltage Control in AUTOMATIC.

Exelon Nuclear

Job Performance Measure

Initiate Drywell Spray with Failure of Second Valve to Open

JPM Number: NRC-Simulator-05

Revision Number: 00

Date: 11/04/2004

Developed By:	_____	_____
	Instructor	**Date**
Validated By:	_____	_____
	SME or Instructor	**Date**
Review By:	_____	_____
	Operations Representative	**Date**

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 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 written by J.E. Ross for the 2003-01 ILT NRC Exam given on the week of 03/07/2005.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any IC with power available to 1A and 1B RHR loops.

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. Scram the reactor and complete the first 6 steps on the Scram Hardcard.

3. PLACE all RR pump breakers in PTL.

4. Start 1A and 1B RHR loops in Suppression Pool Cooling with 1E12-F024A and B adjusted to obtain 6400 gpm system flow.

5. Open 1E12-F027B, 1B RHR Suppression Pool Spray Valve.

6. Start Division 1 and 2 RHR Service Water.

7. Load the Computer Aided Exercise Program from the JPM Floppy disk (NRC-Simulator-05.0.cae). This JPM is best setup using the CAEPs and NOT manually entering expert commands.

8. Silence, Acknowledge and Reset the annunciators. Then Acknowledge the Process Computer Alarms.

9. Clear BOTH Sequence of Events Recorder (SER) monitor screens.

10. 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.

11. This completes the setup for this JPM.

ASSOCIATED CAEPs

```
# Setup for NRC Simulator JPM Simulator-05
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-05.0.cae
##########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
##########################################################################
# This is an Alternate Path JPM. The examinee will attempt to put on
# the 1A Loop of DW Sprays, the first valve will open but the second
# will not move and trips its breaker. The 1B Loop will work, however
# 1B RHR is being used for SC Sprays which will have to be aligned to
# the 1A loop.
#

# Automatic Event Trigger 1
# True if 1E12-F016B is OPENED first
trgset 1 "k1k09jnn .GE. 0.9"
cae A:NRC-Simulator-05.1.cae /trig 1

# Automatic Event Trigger 2
# True if 1E12-F017B is OPENED first
trgset 2 "k1j10jnn .GE. 0.9"
cae A:NRC-Simulator-05.2.cae /trig 2

# Automatic Event Trigger 3
# True if 1E12-F016A is OPENED first
trgset 3 "k1k17jnn .GE. 0.9"
cae A:NRC-Simulator-05.3.cae /trig 3

# Automatic Event Trigger 4
# True if 1E12-F017A is opened first
trgset 4 "k1j18jnn .GE. 0.9"
cae A:NRC-Simulator-05.4.cae /trig 4

# This the end of this CAEP.
```

```
# Supports NRC Simulator JPM Simulator-05
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-05.1.cae
##########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
##########################################################################
#

# Automatic Event Trigger 5
# Simulate 1E12-F017B breaker tripping when h/s is taken to open
trgset 5 "k1j10jnn .GE. 0.9"
```

```
irf iarh17b(5) local

# Remove all other Automatic Event Triggers to allow normal operation
# of the other valves.
trgset 2 ""
trgset 3 ""
trgset 4 ""

# This the end of this CAEP.
```

```
# Supports NRC Simulator JPM Simulator-05
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-05.2.cae
#########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
#########################################################################
#

# Automatic Event Trigger 5
# Simulate 1E12-F016B breaker tripping when h/s is taken to open
trgset 5 "k1k09jnn .GE. 0.9"
irf iarh16b(5) local

# Remove all other Automatic Event Triggers to allow normal operation
# of the other valves.
trgset 1 ""
trgset 3 ""
trgset 4 ""

# This the end of this CAEP.
```

```
# Supports NRC Simulator JPM Simulator-05
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-05.3.cae
#########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
#########################################################################
#

# Automatic Event Trigger 5
# Simulate 1E12-F017A breaker tripping when h/s is taken to open
trgset 5 "k1j18jnn .GE. 0.9"
irf iarh17a(5) local

# Remove all other Automatic Event Triggers to allow normal operation
# of the other valves.
trgset 1 ""
```

```
trgset 2 ""
trgset 4 ""

# This the end of this CAEP.
```

```
# Supports NRC Simulator JPM Simulator-05
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-05.4.cae
##########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
##########################################################################
#

# Automatic Event Trigger 5
# Simulate 1E12-F016A breaker tripping when h/s is taken to open
trgset 5 "k1k17jnn .GE. 0.9"
irf iarh16a(5) local

# Remove all other Automatic Event Triggers to allow normal operation
# of the other valves.
trgset 1 ""
trgset 2 ""
trgset 3 ""

# This the end of this CAEP.
```

INITIAL CONDITIONS

You are the Unit-1 NSO:

- LOCA conditions exist in the containment
- Both loops of RHR Suppression Pool Cooling are in operation
- 1B RHR is being used to Spray the Suppression Chamber
- Both RR Pumps are in Pull-To-Lock (PTL)

INITIATING CUE

The Unit Supervisor has verified containment parameters are within the limits of the Drywell Spray Initiation Limit (DSL) curve and directed you to start one loop of Drywell Spray. Hardcard use is authorized. Report to the Unit Supervisor when Drywell Spray has been initiated.

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
NOTE	For this JPM the second Drywell Spray Valve will fail to open regardless of which loop the examinee attempts to place in Drywell Spray. The following summarizes the expected examinee actions: • Secure Suppression Pool Cooling on one loop • Attempt to establish Drywell Spray on the loop NOT in Suppression Pool Cooling (second valve fails) • Secure Suppression Pool Cooling on the opposite loop • Verify parameters still within the limits of the DSL • Establish Drywell Spray on the second loop				
1.a.	VERIFY 1A/1B RHR Pump is running.	VERIFIES that 1A(1B) RHR pump is running.	___	___	___
*2.a.	THROTTLE 1E12-F024A/B CLOSED	• THROTTLES 1E12-F024A(B) CLOSED.	___	___	___
3.a.	OPEN the following valves:				
3.a	1E12-F016A/B OR (17A/B)	o OPENS First Valve Drywell Spray Valve (F016 or 17).	___	___	___
*3.a	1E12-F017A/B OR (16A/B)	• Attempt to OPEN second Drywell Spray Valve (F017 or F016) and RECOGNIZES failure of second valve to open.	___	___	___
CUE	If examinee reports failure of Drywell Spray Valve to the Unit Supervisor, then acknowledge the report. If the examinee asks for directions, then repeat the initiating cue, "You have been directed to start one loop of Drywell Spray. Hardcard use is authorized."		___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	If the examinee asks, then as the Unit Supervisor report that containment parameters are still within the limits of the DSL.				
1.b.	VERIFY 1B/1A RHR Pump is running.	VERIFIES that 1B(1A) RHR pump is running.	___	___	___
*2.b.	THROTTLE 1E12-F024B/A CLOSED	• THROTTLES 1E12-F024B(A) CLOSED.	___	___	___
3.b.	OPEN the following valves:				
*3.b.	1E12-F016B/A OR (17B/A)	• OPENS First Valve Drywell Spray Valve (F016 or 17).	___	___	___
*3.b.	1E12-F017B/A OR (16B/A)	• OPENS Second Drywell Spray Valve (F017 or F016).	___	___	___
N/A	Reports to the Unit Supervisor.	Tells the Unit Supervisor that one loop of Drywell Spray has been established.	___	___	___
CUE	Acknowledge report as Unit Supervisor and tell the student that this JPM is complete. Record completion time in the block below.				

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Initiate Drywell Spray with Failure of Second Valve to Open

JPM Number: NRC-Simulator-05 **Revision Number:** 00

Task Number and Title:
420.000 Given LGA-003, Primary Containment Control in progress, evaluate plant conditions and control and maintain Drywell Temperature less than 340°F per station procedures.

K/A Number and Importance:
226001 RHR/LPCI: Containment Spray System Mode A4.03 Ability to manually operate and/or monitor in the control room: Spray valves 3.5/3.4

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 15 minutes **Actual Time Used:** ____ minutes

References:
LGA-003, Containment Control, Revision 05
LGA-RH-103, A/B RHR Operations in the LGAS/LSAMGS (hard card), Revision 07

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 NSO:

- LOCA conditions exist in the containment
- Both loops of RHR Suppression Pool Cooling are in operation
- 1B RHR is being used to Spray the Suppression Chamber
- Both RR Pumps are in Pull-To-Lock (PTL)

INITIATING CUE

The Unit Supervisor has verified containment parameters are within the limits of the Drywell Spray Initiation Limit (DSL) curve and directed you to start one loop of Drywell Spray. Hardcard use is authorized. Report to the Unit Supervisor when Drywell Spray has been initiated.

Exelon Nuclear

Job Performance Measure

Perform LOS-DG-M3 with a Loss of the SAT

JPM Number: NRC-Simulator-06

Revision Number: 00

Date: 11/05/2004

Developed By: _____ _____
Instructor **Date**

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

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

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 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 written by J.E. Ross for the 2003-01 ILT NRC Exam given on the week of 03/07/2005. It was modeled after JPM B.1.a from the 2002-01 ILT NRC Exam.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to the current Full Power IC (IC-130)

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. Put the Simulator in RUN.

3. **PLACE** the Division 3 **Voltmeter** in the **Diesel Generator Position** (if this isn't done the examinee may think that the Generator field failed to flash).

4. START the 1B DG with the Diesel Generator Control Switch on the 1H13-P601 Panel.

5. VERIFY Speed Droop set to 50.

6. Load the Computer Aided Exercise Program from the JPM Floppy disk (NRC-Simulator-06.0.cae) or manually enter the following:
   - irf iaeedr1bdg 0
   - trgset 20 "g1h00g18 .GE. 0.600"
   - imf mee041(20)
   - trgset 21 "Q1m00lr8 .GE. 0.9"
   - trg 21 "mrf iaeedr1b 1"

7. Silence, Acknowledge, Reset the annunciators and, ACKNOWLEDGE the Process Computer Alarms.

8. Clear BOTH Sequence of Events Recorder (SER) monitor screens.

9. 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.

10. This completes the setup for this JPM.

ASSOCIATED CAEPs

```
# Setup for NRC Simulator JPM Simulator-06
#
# Author: J.E. Ross
# Date Written: November 11, 2004
# Filename: A:NRC-Simulator-06.0.cae
##########################################################################
# Revision: 00
# Revision Date: 11/11/2004
# Revised By: jer
##########################################################################
# This is an Alternate Path JPM. The examinee will parallel the 1B
# Diesel Generator to the SAT and then load the DG per LOS-DG-M3. When
# the Generator is almost fully loaded, the SAT will trip. The Examinee
# will direct the NLO to place the speed droop to zero and then adjust
# Voltage and Frequency per the limitations in LOS-DG-M3.
#

# Initial setup
# Place 1B DG Speed droop to 50
irf iaeedr1bdg 0

# Automatic Event Trigger 20
# True when 1B DG KW Load indicates 2,300 KW, trips the SAT
trgset 20 "g1h00g18 .GE. 0.600"
imf mee041(20)

# Automatic Event Trigger 21
# True when SAT Feed to 143 Breaker is open, returns speed droop to zero
trgset 21 "Q1m00lr8 .GE. 0.9"
trg 21 "mrf iaeedr1b 1"


# This ends this CAEP.
```

INITIAL CONDITIONS

You are the Unit-1 NSO:

- LOS-DG-M3 was started last shift.

INITIATING CUE

The Unit Supervisor has directed you to complete LOS-DG-M3 starting at Step 3.2 of Attachment 1B-Idle.

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
3.2	VERIFY 1B Diesel Generator Frequency at 59.8 to 60.2 Hz on indicator 1E22-R612.	RAISE or LOWER 1B DG Governor Adjust as necessary to VERIFY frequency between 59.8 and 60.2 Hz.	___	___	___
3.3	If desired, WIPE Motor Operated Potentiometer, using the 1B Diesel Gen Volt Reg control switch to do the following as read on 1E22-R610:				
CUE	If asked, as the Unit Supervisor, tell the examinee to WIPE the potentiometer.				
3.3.1	LOWER Diesel Generator volts to approximately 3900 volts.	Adjusts 1B DG Voltage by lowering to ~3900 volts.	___	___	___
3.3.2	RAISE Diesel Generator volts to approximately 4500 volts.	Adjusts 1B DG Voltage by raising to ~4500 volts.	___	___	___
3.3.3	LOWER Diesel Generator volts to 4050 to 4300 volts.	Adjusts 1B DG Voltage until between 4050 and 4300 volts.	___	___	___
3.3.4	If desired, REPEAT Steps 3.3.1 through 3.3.3 as needed				
CUE	If asked, as the Unit Supervisor, tell the examinee that additional wiping of the potentiometer in NOT necessary.				
*3.4	PLACE 1B DG/143 Synchronizing Switch to ON.	• Places Synch Switch for 1B DG output breaker, 1433 to ON.	___	___	___
*3.5	ADJUST DG Speed with 1B Diesel Gen Governor switch until synchroscope rotates at a beat frequency of 30-60 seconds (1-2 rpm) in the FAST (clockwise) direction.	• Adjusts 1B DG frequency until Synch Scope is rotating 1 to 2 rpm in the FAST direction.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3.6	ADJUST Division 3 Incoming Volts with 1B Diesel Gen Volt Reg control switch until it is slightly above BOP/Division 3 Running Volts.	• Adjusts Incoming Volts until slightly greater than Running Volts.	___	___	___
*3.7	When synchroscope is at the 11 o'clock position, CLOSE ACB 1433, 1B DG Feed to Bus 143 by HOLDING the Control Switch in CLOSE.	• Places handswitch to close and HOLDS until breaker indicates closed, when Synch Scope rotates over 11 o'clock position.	___	___	___
3.8	Using 1B Diesel Gen Governor switch to control KW and 1B Diesel Gen Volt Reg control switch to control KVAR, SLOW LOAD DG as follows:				
*3.8.1	RAISE DG Load to 1000 KW to 1300 KW and 350 KVAR to 750 KVAR, MAINTAIN for two minutes.	• Adjusts KW to between 1000 KW and 1300 KW.	___	___	___
		• Adjusts KVAR to between 350 KVAR and 750 KVAR.	___	___	___
		o Waits two minutes before proceeding.	___	___	___

CUE	When apparent that examinee is waiting for two minutes, okay to tell examinee that two minutes have elapsed.

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*3.8.2	RAISE DG Load to 1750 KW to 2000 KW and 500 KVAR to 1300 KVAR, MAINTAIN for two minutes.	• Adjusts KW to between 1750 KW and 2000 KW.	___	___	___
		• Adjusts KVAR to between 500 KVAR and 1300 KVAR.	___	___	___
		o Waits two minutes before proceeding.	___	___	___
CUE	When apparent that examinee is waiting for two minutes, okay to tell examinee that two minutes have elapsed.				
NOTE	The Station Auxiliary Transformer (SAT) will trip when load is adjusted above 2300 KW in the following step. The examinee is expected to take actions per Limitation D.4 of this surveillance procedure.				
*3.8.3	RAISE DG Load to 2400 KW to 2600 KW and 650 KVAR to 1750 KVAR, MAINTAIN for two minutes.	• Attempts to adjust KW to between 2400 KW and 2000 KW.	___	___	___
		• RECOGNIZES Loss of the SAT and discontinues the Surveillance.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	The examinee can take the following actions in any order.				
CUE	IF the examinee starts to take actions per LOA-AP-101 (AC Power System Abnormal) for loss of the SAT, THEN tell the examinee "another NSO will perform the actions per LOA-AP-101 for you."				
*D.4	If a trip of the AC feed from grid to a DG supplied bus occurs while DG is synchronized, resulting in DG being only supply to bus, Engine Governor Speed Droop Dial must be immediately set to zero, frequency 59.5 to 60.5 Hz, and voltage 4150 to 4300 volts.	• DIRECTS NLO to place 1B DG Governor Speed Droop to zero.	___	___	___
CUE	After being directed, then as the assisting NLO, report that the 1B Diesel Generator Speed Droop has been set to zero.				
*		• Adjusts 1B DG Frequency to between 59.5 and 60.5 Hz.	___	___	___
*		• Adjusts 1B DG Voltage to between 4150 and 4300 volts.	___	___	___
N/A	Reports to the Unit Supervisor.	Reports the status of the 1B Diesel Generator to the Unit Supervisor.	___	___	___
CUE	As Unit Supervisor acknowledge the report and then tell the examinee that this JPM is complete. Record JPM Stop Time in the blank below.				

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Perform LOS-DG-M3 with a Loss of the SAT

JPM Number: NRC-Simulator-06 **Revision Number:** 00

Task Number and Title:
11.007 Given Unit Supervisor authorization, perform the Main Control Room actions for a Diesel Generator Operability Test per station procedures.

K/A Number and Importance:
264000, Emergency Generators: A4.04 Ability to manually operate and/or monitor in the control room: Manual start, loading, and stopping of emergency generator 3.7/3.7

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 25 minutes **Actual Time Used:** ____ minutes

References:
LOS-DG-M3 1B Diesel Generator Operability Test, Revision 59

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 NSO:

- LOS-DG-M3 was started last shift.

INITIATING CUE

The Unit Supervisor has directed you to complete LOS-DG-M3 starting at Step 3.2 of Attachment 1B-Idle.

Exelon Nuclear

Job Performance Measure

Reset a Half Scram with Blown Group Scram Fuse

JPM Number: NRC-Simulator-07

Revision Number: 00

Date: 11/05/2004

Developed By: _____ _____
Instructor **Date**

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

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

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 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 written by J.E. Ross for the 2003-01 ILT NRC Exam given on the week of 03/07/2005.

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any full power IC (IC-130)

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. Load the Computer Aided Exercise Program from the JPM Floppy disk (NRC-Simulator-07.0.cae) or manually enter the following:
   - imf mni098 125
   - irf iasff18e removed
   - ior k3k06b97 false
   - ior k3k06pz7 depressed
   - dor k3k06b97
   - dor k3k06pz7

3. DO NOT Bypass 1C APRM.

4. Silence, Acknowledge and Reset the annunciators. Then Acknowledge the Process Computer Alarms.

5. Clear BOTH Sequence of Events Recorder (SER) monitor screens.

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

7. This completes the setup for this JPM.

ASSOCIATED CAEPs

```
# Setup for NRC Simulator JPM Simulator-07
#
# Author: J.E. Ross
# Date Written: October 23, 2004
# Filename: A:NRC-Simulator-07.0.cae
##########################################################################
# Revision: 00
# Revision Date: 10/23/2004
# Revised By: jer
##########################################################################
# This is an Alternate Path JPM. The examinee will be told to reset a
# half scram. After resetting, one group light will be out. The
# will then enter LOA-RP-101 and replace the light bulb. This will not
# work and the examinee will then have to re-insert a half scram.
#

# Fail 1C APRM upscale
imf mni098 125

# Simulate a blown group scram fuse on 1A RPS (A2)
irf iasff18e removed    | 1 | 1

# MAY NOT NEED THE FOLLOWING OVERRIDES IF APRM MALFUNCTION WORKS!!!!!!

# insert a half-scram on 1A RPS
ior k3k06b97 false      | 2 | 2
ior k3k06pz7 depressed  | 3 | 3

dor k3k06b97            | 4 | 4
dor k3k06pz7            | 5 | 5

# This ends this CAEP.
```

INITIAL CONDITIONS

You are an Extra NSO assigned to Unit-1:

- APRM 1C failed upscale earlier in the shift.
- APRM 1C has NOT been bypassed

INITIATING CUE

The Unit Supervisor has directed you to complete the actions required by LOR-1H13-P603-A405 starting at Step B.6. Report to the Unit Supervisor when you have completed resetting the half-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
LOR B.6.a.	DETERMINE if one APRM has failed Upscale or is Inoperable.	This information was given in the Initial Conditions of this JPM (1C APRM Failed Upscale).			
LOR *B.6.b.	BYPASS inoperable/upscale APRM if no other APRMs are bypassed in Channel A.	• PLACE APRM Bypass Joystick in the C position.	___	___	___
LOR *B.6.c.	RESET RPS Channel A.	• ROTATES the RPS Scram Reset Switch to the 1/4(2/3) position and then ROTATES it back to the 2/3(1/4) position, then releases the switch.	___	___	___
*N/A	RECOGNIZE that one RPS Group Light is still out in RPS Channel A.	• DETERMINES that the A2 White Group Scram Light is OUT.	___	___	___
NOTE	Examinee may Enter LOA-RP-101 at this point. If so he may not attempt to replace the light bulb until directed by the procedure later in this JPM. If the examinee goes directly to LOA-RP-101 from here, then mark the next actions as N/A and jump ahead to the step labeled **LOA B.4.1**.				
*N/A	DETERMINE if light is burned out or if possible blown fuse.	o DETERMINES that the light bulb is NOT the problem.	___	___	___
CUE	WHEN the examinee attempts to change the light bulb, THEN tell the examinee that the light bulb has been replaced and the light is still OUT.				
*		• DETERMINES possible Blown RPS Fuse.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
N/A	REPORTS to the Unit Supervisor	Tells Unit Supervisor that the half-scram is reset and A2 Group Light is Out.	___	___	___
CUE	As the Unit Supervisor acknowledge the report. If asked, as the Unit Supervisor tell the examinee to take what ever actions are required per the appropriate procedures.				
*N/A	ENTERS LOA-RP-101	• OBTAINS current copy of LOA-RP-101.	___	___	___
LOA B.4.1	CHECK only one RPS Bus affected and Control Rods NOT moving.	VERIFIES only one white light out and no rods moving.	___	___	___
LOA B.4.2	SUSPEND any HALF SCRAM testing in progress.	DETERMINES no half scram testing in progress (no action to take).			
LOA *B.4.3	CHECK more than one RPS BUS LIVE light out on a single Channel.	• DETERMINES only one light out.	___	___	___
CUE	WHEN the examinee attempts to change the light bulb, THEN tell the examinee that the light bulb has been replaced and the light is still OUT.				
		o REPLACE affected bulb.	___	___	___
*		• DETERMINES bulb was NOT the problem and IMMEDIATELY inserts Half-Scram on RPS Channel A.	___	___	___
NOTE	The examinee is NOT expected to determine which fuse is blown or which fuse to check blown as part of this JPM.				

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
LOA B.4.4	VERIFY affected 1C71-F18 fuse is NOT blown at panels 1H13-P609 and 1H13–P611.	No actions necessary (see the below CUE).			
CUE	WHEN examinee attempts to dispatch an operator to check for blown fuse, OR when he displays efforts to determine this information himself, THEN tell him to call Unit-2 and ask the Unit-2 Assist NSO to check the fuse.				
SIM OP	WHEN called to check the fuse, THEN modify the remote function (iasff18e) to install the fuse.				
CUE	AFTER replacing the fuse, THEN CALL Unit-1 and tell the NSO that the fuse was blown and you have replaced the fuse with like-for-like per the appropriate procedures.				
LOA *B.4.5	RESET HALF SCRAM	• ROTATES the RPS Scram Reset Switch to the 1/4(2/3) position and then ROTATES it back to the 2/3(1/4) position, and then releases the switch.	___	___	___
N/A	REPORTS to the Unit Supervisor.	Tells the Unit Supervisor that the Half Scram has been reset.	___	___	___
CUE	Acknowledge report as Unit Supervisor and tell the student that this JPM is complete. Record completion time in the block below.				

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☐ NLO ☐ RO ☐ SRO ☐ STA ☐ SRO Cert

JPM Title: Reset a Half Scram with Blown Group Scram Fuse

JPM Number: NRC-Simulator-07 **Revision Number:** 00

Task Number and Title:
49.017 Given Unit Supervisor authorization, reset the RPS system scram per station procedures.

K/A Number and Importance:
212000 Reactor Protection System, A2.19 Ability to (a) predict the impacts of the following on the REACTOR PROTECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal condition or operations: Partial system activation (half-SCRAM) 3.8/3.9

Suggested Testing Environment: Simulator

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

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

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 12 minutes **Actual Time Used:** ____ minutes

References:
LOR-1H13-P603-A405, Channel A APRM Hi-Hi/Inop, Revision 03
LOA-RP-101, Unit-1 Loss of Reactor Protection System Power, Revision 07
LGP-3-2, Reactor Scram, Revision 50

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 assigned to Unit-1:

- APRM 1C failed upscale earlier in the shift.
- APRM 1C has NOT been bypassed

INITIATING CUE

The Unit Supervisor has directed you to complete the actions required by LOR-1H13-P603-A405 starting at Step B.6. Report to the Unit Supervisor when you have completed resetting the half-scram.