Exelon Generation.

LIMERICK GENERATING STATION
SIMULATOR EVALUATION GUIDE

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AUTHOR:	J. N. KOELLE	APPROXIMATE RUN TIME:	70 minutes
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PROGRAM:	LICENSED OPERATOR TRAINING		
COURSE:	LICENSED OPERATOR (REQUALIFICATION/INITIAL) TRAINING		
TITLE:	Simulator Evaluation Guide for Individual and Crew Performance		

Prepared By: _____ Date: 11/12/15
Training Instructor - Signature

Reviewed By N/A FOR ILT INITIAL Date: N/A
Program (ILT or LOR) Lead - Signature

Reviewed By: A.W. HIGHTOWER, EPM Date: 11/12/15
EP (as appropriate) - Signature

Reviewed By: N/A Date: N/A
RE (as appropriate) - Signature

Approval: _____ Date: 11-19-15
OPS Manager - Signature

Approved For Use: _____ Date: 11-19-15
Training Manager - Signature

Facility: Limerick 1 & 2 Scenario No.: SEG-6213E Rev 1 Op-Test No.: 1 .

Examiners: _____ Operators: _____

Initial Conditions:
Unit 1 is at 100% power. Unit 2 is at 100% power.

Turnover:
Crew is required to cross-tie 114A LC to 124A LC per S93.7.A to remove 114A Reactor Area Load Center Transformer Supply Breaker for Maintenance. LC Transformer to service when maintenance is complete.

Event No.	Malfunction Number	Event Type*	Event Description
1	N/A	N-PRO	Cross tie 114A to 124A Load Center
2	MEH101C	C-PRO R-RO TS-SRO	# 3 Turbine Stop Valve fail closed **(Abnormal)**
3	MRP406A	TS-SRO	Loss of power to Div I RRCS
4	MED263A	C-PRO TS-SRO	D11 Bus Lockout **(Abnormal)**
5	MSL001B	C-RO	'1B' SLC Pump spuriously starts and injects **(Abnormal)**
6	MRP029B MSL559 C22-S1B	M-ALL	ATWS, SLC failure (ARI successful on low level)
7	C11A-S16	C-RO	Control Rod Continuous Insert pushbutton fails
8	MRC465 MRC464A	M-ALL	RCIC steam leak with failure to auto isolate results in MSO exceeded in 2 areas
9	MAD148D	C-PRO	'1M' SRV fails closed

* **(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor**

I. **PURPOSE:** Systematically evaluate individual and team performance to identify areas for improvement. Critical Tasks and Assessment Items from this evaluation guide are to be used to assess crew and individual performance and as input into a 4.0 Crew Critique Process.

II. SIMULATOR EVALUATION GUIDE OBJECTIVES:

A. The following evaluation objectives apply to the Crew (C), Shift Manager (SM), Control Room Supervisor (S), Unit Reactor Operator / Plant Reactor Operator (R), or Incident Assessor / Shift Technical Advisor (A) as indicated in the following categories.

1. The general condition for each of the evaluation objectives will be "Given the plant conditions and sequence of events in the Simulator Evaluation Guide (SEG)".
2. The general acceptable evaluation objective criteria for each of the evaluation objectives will be "To perform effectively as an individual and contribute to successful crew performance in accordance with appropriate reference plant procedures and Operations Expectations, Fundamentals and Strategies".
3. Specific UNSAT evaluation objective criteria will be consistent with TQ-AA-155, Conduct of Simulator Training and Evaluation with applicable forms and job aids.
4. During performance of this Simulator Evaluation Guide, the individuals and crew should satisfactorily demonstrate the following overall procedure and plant control objectives:
   - Direct and perform actions per OT-104, Unexpected/Unexplained Positive or Negative Reactivity Addition
   - Direct and perform actions per E-D11, Loss of D11 Safeguard Bus
   - Direct and perform actions per T-101, RPV Control
   - Direct and perform actions per T-102, Primary Containment Control
   - Direct and perform actions per T-103, Secondary Containment Control
   - Direct and perform actions per T-117, Level/Power Control
   - Direct and perform actions per T-112, Emergency Blowdown
   - Direct and perform transition to Implement the Emergency Plan with accurate and timely Event Declarations and Notifications

III. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	LORT Approval	Action Tracking	Revision Date

IV. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (e.g for conversion of LSTS to LLORSEG format).

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
Rev000	This is a new scenario.	9/30/14
Rev001	Revised to reflect new template and changes for evaluations	07/15/15

V. SCENARIO EVENT AND EVALUATION SUMMARY:

Event One: When the crew assumes responsibility, they will be directed to cross-tie 114A to 124A Load Center for maintenance on the 114A Transformer Supply Breaker.

Evaluation: To evaluate PRO's ability to operate breakers per S93.7.A to cross-tie 114A to 124A Load Center.

Event Two: After the Load Centers are crosstied, the #3 Turbine Stop Valve will fail closed causing reactor pressure and power to rise.

Evaluation: Evaluate the crew's response to the Reactor high pressure condition and take action in accordance with OT-102 and OT-104 to lower pressure less than 1053 psig and initially lower power to < 100%.

Event Three: After the #3 Turbine Stop Valve fails closed, Div I RRCS will lose power.

Evaluation: To evaluate the crew's ability to reference the appropriate ARCs and determine Tech Spec action for 'A' SLC and 'A' ATWS/RPT inoperability.

Event Four: After Tech Specs have been referenced, a D11 Safeguard Bus Lockout will occur.

Evaluation: To evaluate the crew's ability to recognize loss of the D11 Bus, enter and execute E-D11, and reference Tech Specs for the inoperable Safeguard Bus.

Event Five: After actions for E-D11 are complete, the '1B' SLC Pump will spuriously start and inject into the vessel.

Evaluation: Evaluate the crews' ability to enter and execute OT-104 and manually scram the reactor after determining the SLC Pump has injected.

Event Six: When actions are taken to scram the reactor, RPS 'B' will fail to de-energize. Complicating the event, the Div II 'B' channel RRCS pushbutton will fail preventing actuation of RRCS from the MCR.

Evaluation: Evaluate the crew's ability to execute T-101 and T-117 to control reactor power, pressure and level and perform T-270 to lower RPV Level to less than -50" to insert the control rods with automatic ARI.

SCENARIO EVENT AND EVALUATION SUMMARY: cont'd

Event Seven: When manual insertion of the control rods is attempted, the Continuous Insert pushbutton will fail.

Evaluation: To evaluate the crew's ability to recognize the pushbutton failure and to use the single notch pushbutton to insert rods.

Event Eight: After ARI has inserted the control rods, a steam line break will occur in the RCIC room resulting in MSO being exceeded in 2 areas requiring a T-112 Emergency Blowdown.

Evaluation: Evaluate the crew's ability to recognize indications of a steam leak in the RCIC room, enter and execute SE-8 and T-103, call out for performance of T-290 and take actions to isolate the steam leak. When MSO is being exceeding in 2 areas with the primary system still discharging, the crew is expected to enter and execute T-112.

Event Nine: When the crew attempts to open 5 ADS SRV's, the '1M' SRV will fail closed.

Evaluation: Evaluate the crew's ability to recognize the failed SRV and open a non-ADS SRV until 5 SRVs have been opened.

Termination Criteria: The scenario is terminated when all control rods have been inserted, a T-112 Blowdown has been completed, a Site Area Emergency (MS2) has been declared and the Emergency Plan has been implemented.

VI. REFERENCES

A. Training Procedures
   1. TQ-AA-150, Operator Training Programs
   2. TQ-AA-151, ILT Certification and NRC Examination Development and Administration
   3. TQ-AA-155, Conduct of Simulator Training and Evaluation

B. Annunciator Response Cards (ARC)
   1. 004 B-5, DIV I RRCS OUT OF SERVICE
   2. 004 A-2, A REAC ENCL HVAC PNL 1AC208 Trouble
   3. 006 E-1-L, REAC 1 177' EL RCIC PUMP
   4. 107 E-3, SPOTMOS TROUBLE ALARM DIV 1
   5. 107 H-5, DIV 3 Steam Leak Det SYS HI Temp / Trouble
   6. 107 F-5, DIV 1 Steam Leak Det SYS HI Temp / Trouble
   7. 108 I-4, STANDBY LIQUID SQUIB VALVE LOSS OF CONTINUITY
   8. 108 H-1, SLC TANK LO LO LEVEL
   9. 111 A-5, 1A RECIRC PUMP MOTOR WINDING COOLER LO FLOW
   10. 112 A-5, 1B RECIRC PUMP MOTOR WINDING COOLER LO FLOW
   11. 112 G-2, 1A RWCU RECIRC PUMP TRIP
   12. 113 B-5, CORE SPRAY LINE INTERNAL BREAK
   13. 120 A-1, D11 BUS DIFF/OVERCURRENT LOCKOUT
   14. 120 A-1, D11 BUS/DIFF OVERCURRENT LOCKOUT
   15. 120 A-2, 101 D11 BUS BRK TRIP
   16. 120 C-4, D11 DIESEL RUNNING107 G-2, REACTOR HI PRESS
   17. 105 B-2, MAJOR TROUBLE TURBINE CONTROL
   18. 106 D-4, BYPASS VALVE OPEN

C. System Procedures (S)
   1. S93.7.A, Supplying Power to a 480 VAC Non-Safeguard Load Center from it's Alternate Source

D. General Procedures (GP)

E. Off Normal Procedures (ON)

F. Operating Transient Procedures (OT)
   1. OT-102, Reactor High Pressure
   2. OT-104, Unexpected/Unexplained Positive or Negative Reactivity Addition

G. Event Procedures (E)
   1. E-D11, Loss of D11 Safeguard Bus

H. Special Event Procedures (SE)

I. Surveillance Test and Routine Test Procedures (ST and RT)

J. Technical Specifications and TRM (TS)
   1. 3.1.5
   2. 3.3.4.1
   3. 3.8.1
   4. 3.5.1
   5. 3.8.3

K. Transient Response Implementation Procedures (T-100 series)/SAMPs
   1. T-101, RPV Control
   2. T-102, Primary Containment Control
   3. T-103, Secondary Containment Control
   4. T-117, Level/Power Control

L. TRIP 200 Series Procedures
   1. T-250, Injection from the Standby Liquid Control Storage Tank with the RCIC System
   2. T-270, Terminate And Prevent Injection Into the RPV
   3. T-290, Instrumentation Available for T-103/SAMPS-2

M. EP-AA-1008, Limerick, Radiological Emergency Plan Annex for Limerick Generating Station

N. Administrative Procedures
   1. OP-AA Procedures
      a. OP-AA-1, Conduct of Operations
      b. OP-AA-20, Conduct of Operations Process Description
      c. OP-AA-101-111-1003, Operations Department Standards and Expectations
      d. OP-AA-101-113, Operations Fundamentals
      e. OP-AA-101-113-1006, 4.0 Crew Critique Guidelines
      f. OP-AA-106-101-1006, Operational Decision Making Process
   2. OP-LG Procedures
      a. OP-LG-101-111-1000, Licensed Operator Duties
      b. OP-LG-102-106, Operator Response Time Program at Limerick
      c. OP-LG-103-102-1000, Human Performance Continuing Good Practices
      d. OP-AA-103-102-1001, Strategies For Successful Transient Mitigation
      e. OP-LG-103-102-1002, Strategies for Successful Transient Mitigation
      f. OP-LG-108-101-1001, Simple Quick Acts / Transient Acts

O. Current Shift Night Orders Forced Outage Plan

P. INPO Significant Operating Experience Reports (SOER), Significant Event Reports (SER) and INPO Event Reports (IER)
   1. IER-L1 11-3, Weaknesses in Operator Fundamentals
   2. SER 3-05, Weakness in Operator Fundamentals
   3. SOER 10-02, Engaged Thinking Organizations
   4. INPO 15-004, Operator Fundamentals

VII. PREBRIEF INSTRUCTIONS

- Unit 1 is in OPCON 1 at 100% power
- Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- None

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- None

Planned Evolutions:

- Cross-Tie 114A Load Center to 124A Load Center per S93.7.A to remove the 114A Load Center Transformer supply breaker for maintenance

Documents Provided:

- S93.7.A, Supplying Power to a 480 VAC Non-Safeguard Load Center from it's Alternate Source completed up to and including step 4.6.1
- Pre-Job Briefing Sheet for S93.7.A, available

VIII. DIRECTIONS FOR EVALUATION PREPARATION

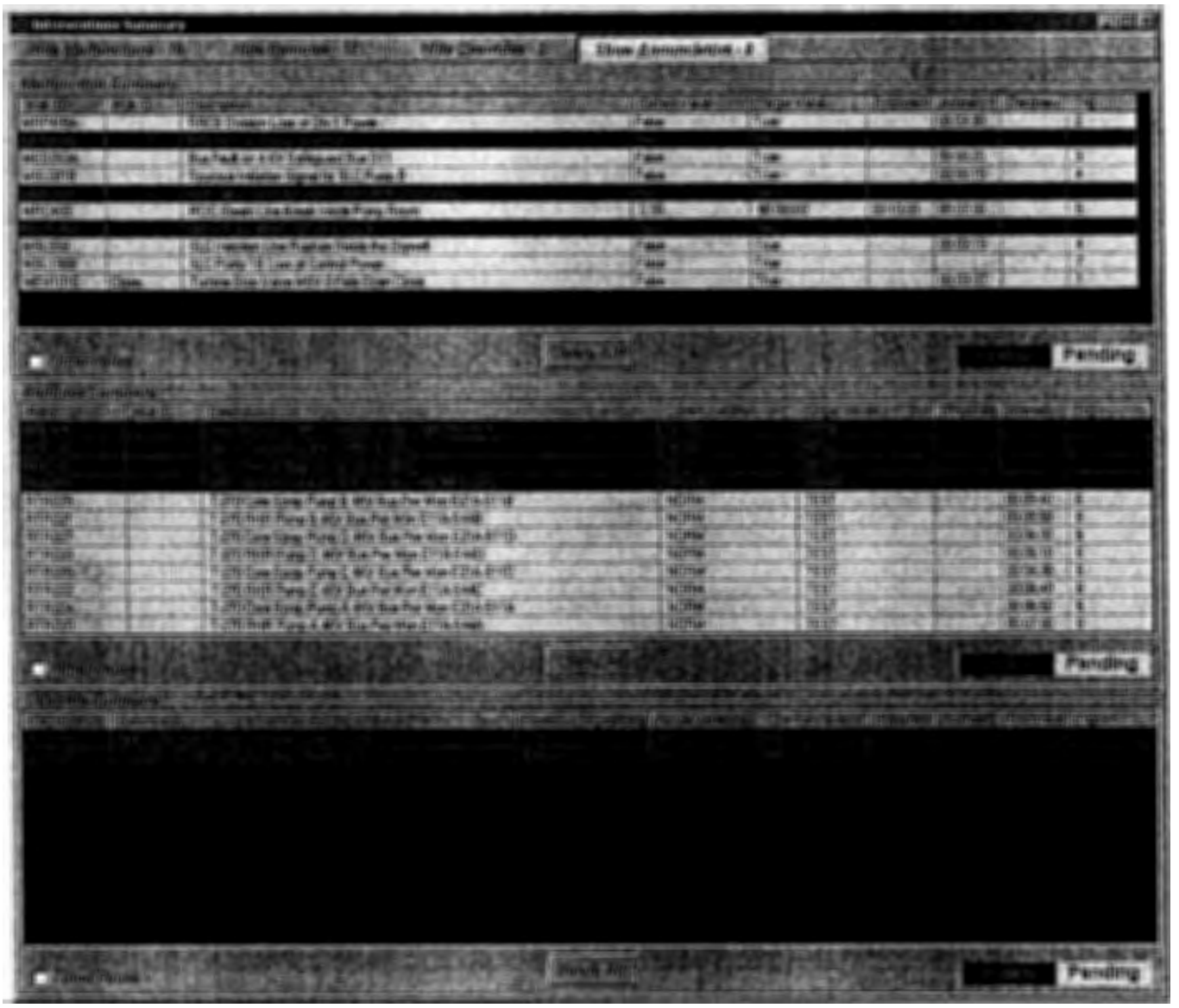
A. INITIAL PREPARATION

✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete TQ-AA-155, Operator Training Programs Attachment 02, Evaluated Scenario Administration Checklist.
	Complete TQ-LG-201-0113, Limerick Training Department Simulator Examination Security Actions Checklist

B. SIMULATOR SETUP

✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete Limerick Simulator Pre-Evaluation Checklist
	Reset Simulator to the Pre-loaded Cycle **IC-** developed for scenario **OR** Reset the simulator to **IC-17** (or designated base load IC) **AND** Load scenario file **SEG-6213E Rev001.scn** • Verify that all Malfunctions, Remotes, Overrides, Annunciators and Triggers are properly loaded **OR** Manually enter the Malfunctions, Remotes, Overrides, Annunciators and Triggers per the Scenario Generator Screen Shots:
	Simulator Operator (Driver) perform the following: • Momentarily place simulator in RUN • Acknowledge and clear all spurious alarms • Place the simulator back into FREEZE • Provide marked up copy of S93.7.A to step 4.7

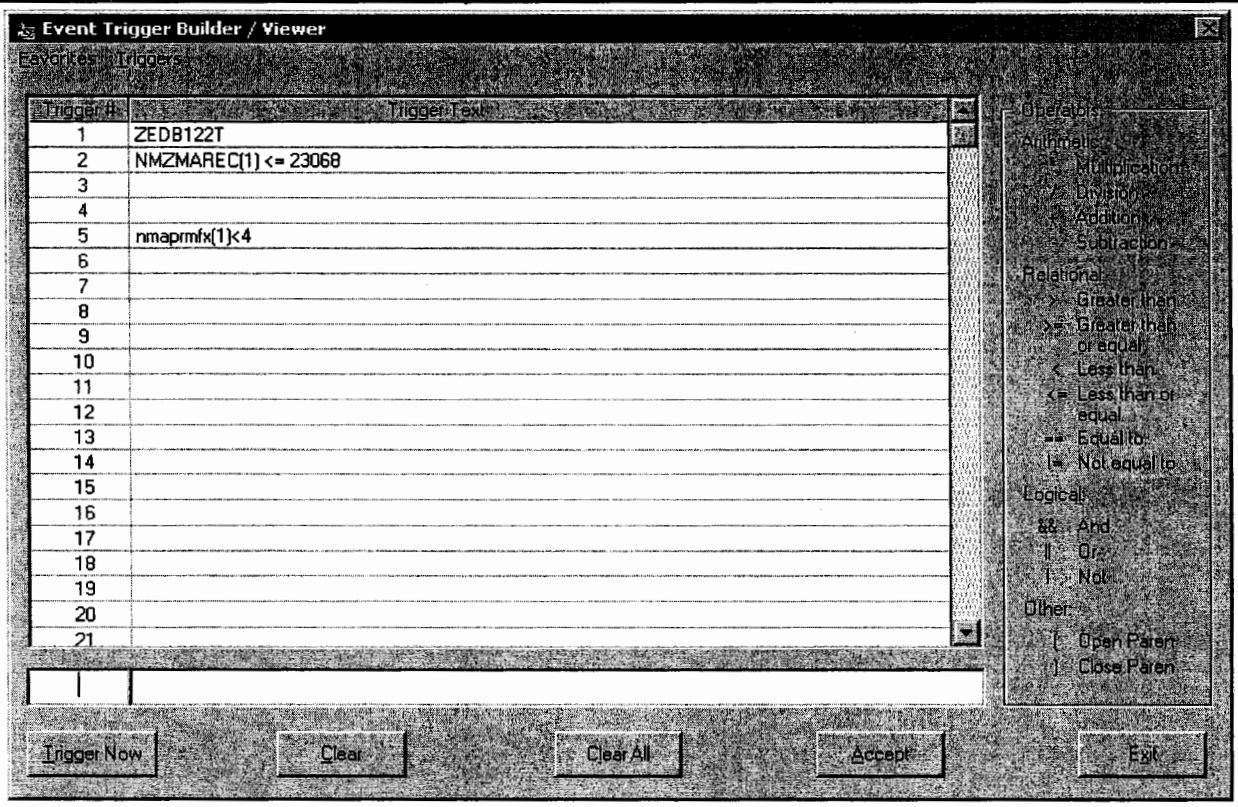
C. MALFUNCTION/REMOTE/OVERRIDE/ANNUNCIATORS FUNCTION TIME TABLE



D. EVENT TRIGGERS ASSIGNMENT

1. Timers should be used on event triggers where possible for time validation.
2. Timing of event triggers may be altered by the Lead Evaluator (or designee).
3. Verify triggers are actuated automatically as designed or manually initiate the trigger when the initiating action has occurred.
4. Inform Lead Evaluator (or designee) of expected plant response prior to actuation of each trigger.
5. Trigger #1 is automatically initiated when the crew transfers load centers.

	TRIGGER / TIME	MALFUNCTION / EVENT	DESCRIPTION
	1	Auto / ZEDB122T	114A Load Center Main Breaker to TRIP Initiates #3 TSV fails closed
	2	Auto / NMZMAREC(1)<=23068	Reactor power reduced to 88% Initiates loss of Div 1 RRCS
	3	Manual	(When directed by lead evaluator) Initiates D11 Bus Lockout
	4	Manual	Initiates '1B' SLC spurious start
	5	Auto / NMAPRMFX{1}<4	Reactor Power < 4% Initiates RCIC Steam Leak
	6	Manual	Perform remote function T-270
	7	Manual	Remove control power from '1B' SLC Pump



E. EQUIPMENT REPORTS AND LEAD EVALUATOR (OR DESIGNEE) OPERATIONS

1. Scripted Activity Reports should be followed with adherence to Operations Communication standards of performance.
2. The T-200 procedure reference book should be used for familiarity of reports to aid in operator prompting and expected communications.
3. The Lead Evaluator (or designee) should be informed if any event is not reported as scripted due to lack of Operator request.
4. The Standard Equipment Operator Response Times are per Attachment 1.

IX. QUANTITATIVE ATTRIBUTES

QUANTITATIVE ATTRIBUTES			
ATTRIBUTE	**MINIMUM NUMBER**	**ACTUAL NUMBER**	**DESCRIPTION (If Applicable)**
TOTAL MALFUNCTIONS	**5**	5	**See Assessment Items**
MALFUNCTIONS AFTER EOP	**1**	2	**See Assessment Items**
ABNORMAL EVENTS	**2**	3	E-D11, OT-104, OT-102
MAJOR TRANSIENTS	**1**	2	ATWS, RCIC Steam Leak
EOPs USED BEYOND PRIMARY SCRAM RESPONSE	**1**	3	T-102, T-103, T-101
EOP CONTINGENCY PROCEDURES USED	**1**	2	T-117, T-112
CREW CRITICAL TASKS	**2**	3	T-117.7, T-103.1 T-103.3 or T-103.7
TECHNICAL SPECIFICATIONS EXERCISED	**1**	5	3.1.5, 3.3.4.1, 3.8.1, 3.8.3.1, 3.5.1
SCENARIO RUN TIME	**45 Minutes**	**70 Minutes**	

Enter the level of difficulty (LOD) of each scenario using a 1 – 5 (easy – difficult) rating scale (LOD > 1 and < 5 are acceptable) 3.0

X. CREW CRITICAL TASKS

A. Critical Tasks are based on the current Crew Critical Task List revision, NUREG 1021 Rev 10 Supplement 1 and TQ-AA-150 requirements.

1. T-117.7 Terminate and prevent injection into the RPV.

K/A	295037	EK1.02	4.1/4.3
K/A	295037	EK3.03	4.1/4.5
K/A	295037	EA2.02	4.1/4.2

Standard: RPV level deliberately lowered below -50" by Terminating and Preventing injection into the RPV per T-270.

SAT/UNSAT

2. T-103.1 Implement T-290, to determine Reactor Enclosure conditions

K/A	295032	EA2.01	3.8/3.8

Standard: Direct the performance of T-290 to operations personnel located outside the control room and take action based on secondary containment conditions/parameters.

SAT/UNSAT

3a. T-103.3 Perform an emergency blowdown per T-112.

K/A	295032	EK3.01	3.5/3.8
K/A	295033	EK3.01	3.3/3.5
K/A	295036	EK3.01	2.6/2.8

Standard: After it is determined that two areas in Table SCC-2 have exceeded MSO values and a primary system is still discharging into Secondary Containment, open 5 ADS valves.

SAT/UNSAT

OR

3b. T-103.7 Rapid depressurization using Turbine Bypass Valves per T-101.

K/A	295032	EK3.01	3.5/3.8
K/A	295032	EK3.03	3.8/3.9
K/A	295032	EK1.05	3.7/3.9

Standard: After it is determined that actions prescribed in the TRIPs will not be effective at averting an Emergency RPV depressurization and before Emergency Blowdown requirements are met, all turbine BPVs are opened.

SAT/UNSAT

XI. ASSESSMENT OF CREW PERFORMANCE DURING CONDUCT OF THE DYNAMIC SIMULATOR EVALUATIONS:

A. Conduct the Simulator Evaluation Session per TQ-AA-155, Conduct of Simulator Training and Evaluation, Attachment 02, Evaluated Scenario Administration Checklist.

B. Assessment of Crew and Individual performance shall be consistent with OP-AA-20, Conduct of Operations Process Description.

C. Where possible record the time and position responsible for performance of each task or assessment item.

D. Items not performed as expected **SHALL** be discussed in the post performance crew critique.

E. During the performance of the evaluation, the Simulator Evaluators shall **MAINTAIN** notes of observations and information consistent with the timeline.

F. Assessment items with the symbol indicate a time critical standard for performance.

G. Assessment items with the symbol indicate a Probabilistic Risk Assessment (PRA) association with the task.

H. The Simulator Operator will respond with scripted or proceduralized responses when requested by the MCR operators with Procedure completion times requested per **Attachment 1.**

I. The Simulator Operator will also maintain a timeline and record of all reports and requests issued by the MCR personnel with response provided by the simulator operator using **Attachment 2.**

J. Shaded items do not require assessment for ILT Evaluations. The CRS may be requested to complete the Shift ED forms and determine the EAL classification at the completion of the scenario.

EVENT – 1 CROSS TIE 114A TO 124A LOAD CENTER

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger

Respond to request for assistance as appropriate.

Ensure **Trigger #1** automatically actuates when 114A LC Main Breaker is placed to TRIP, to initiate Main Turbine Stop Valve closure.

At time 2 min When directed to select Non-Preferred control power bus
report: The 114A-124A control power source has been selected to Non-Preferred (124A).

At time 2 min When directed to place 124B Transformer fan control switch in HAND
report: The 124A Load Center Transformer Fan Control Switch is in HAND and the fan is running.

If PRO requests a Peer Check for S93.7.A, an instructor may act as Peer Check but shall not correct any errors.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 1 CROSS TIE 114A TO 124A LOAD CENTER	
	EVALUATORS NOTE: S93.7.A, Supplying Power to a 480VAC Non-Safeguard Load Center From its Alternate Source is used to perform load center swap. Procedure starts at step 4.7.	
	Make PA announcement that Load Centers 114A and 124A will be cross-tied and to avoid the area during breaker re-alignment	PRO
	[S93.7.A 4.7] Place 114A-124A Tie Breaker control switch to CLOSE and HOLD	PRO
	[S93.7.A 4.7.1] Place 114A Main Bus Breaker to TRIP	PRO
	[S93.7.A 4.7.2] When Tie Breaker indicates closed, release Tie Breaker control switch	PRO
	[S93.7.A 4.7.3] Observe 124A Load Center ammeter and verify less than 50 amps	PRO
	[S93.7.A 4.7.10] Direct EO to place fan control switch for 124A transformer fan control switch to "HAND"	PRO

EVENT – 2 MAIN TURBINE STOP VALVE #3 CLOSURE

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger

Respond to request for assistance as appropriate.

At time 10 min after FSSV or EO action requested for Bypass Valves opening
report: There are no obvious reasons for Main Stop Valve closure.

Ensure **Trigger #1** automatically actuates when 114A LC Main Breaker is placed to TRIP, to initiate Main Turbine Stop Valve closure.

Ensure **Trigger #2** automatically actuates when reactor power decreased to 88% to initiate Div 1 RRCS failure.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 2 MAIN TURBINE STOP VALVE #3 CLOSURE	
	Reference ARCs: • 107 G-2, REACTOR HI PRESS • 105 B-2, MAJOR TROUBLE TURBINE CONTROL • 106 D-4, BYPASS VALVE OPEN	PRO
	[ARC MCR 107 G-2] Enter OT-102, Reactor High Pressure	SRO
	[OT-102 2.1] Immediately lower Reactor Power IAW RMSI to reduce Reactor pressure less than 1053 psig	RO
	Recognize MSV-3 closed	PRO/RO
	[OT-102 3.1] Direct performance of OT-102, Att. 2, step 1 for action on closed MSV	SRO
	[OT-102 Att#2] Reduce reactor power <88% IAW GP-5 and RMSI **(Malfunction)**	RO
	[ARC MCR 107 G-2] Reference Tech Spec 3.4.6.2 to reduce reactor steam dome pressure to <1053 psig within 15 minutes.	SRO
	[ARC MCR 105 B-2] Reference S31.1.B U/1 Responding to Alarms at DEHC HMI Panel (time permitting)	PRO
	Evaluate position on power/flow map per GP-5, App. 2 .	SRO
	Contact WWM for support	Crew

EVENT – 3 LOSS OF DIV 1 RRCS POWER

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger

Respond to request for assistance as appropriate.

At time _10 min__ after I&C requested to investigate power loss to RRCS
report: We found a blown fuse in the Division I RRCS cabinet on Unit 1 with indications of a short circuit. We will develop a repair plan for the circuit.

Ensure **Trigger #2** automatically actuates when reactor power decreased to 88% to initiate Div 1 RRCS failure.

Manually actuate **Trigger #3** when directed by Lead Evaluator to activate D11 Bus Lockout.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 3 LOSS OF DIV 1 RRCS POWER	
	Reference appropriate ARC'S • 004 B-5, DIV 1 RRCS OUT OF SERVICE • 108 H-1, STANDBY LIQUID TANK LO LO LEVEL	PRO
	[ARC-MCR-004 B-5] Determine loss of power to DIV 1 RRCS	Crew
	[ARC-MCR-004 B-5 / 108 H-1] Dispatch I&C to investigate problem	PRO
	Dispatch floor personnel to investigate RRCS loss of power	PRO
	[ARC-MCR-004 B-5] Reference the following Tech Specs: 3.1.5.a Declare 'A' SLC 7 days (place C SBL in service) 3.3.4.1.c 'A' ATWS/RPT system INOP 3.3.4.1.d Determine 72 hr action to be in STARTUP	SRO
	Contact WWM for support	SRO/PRO
	Protect Div II RRCS	SRO
	Brief crew on impact of loss of Div I RRCS	SRO
	SM Contact SOS and SDM	SRO

EVENT – 4 D11 BUS LOCKOUT

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger

Respond to request for assistance as appropriate.

Manually initiate **Trigger #3** when directed by Lead Evaluator to activate D11 Bus Lockout.

At time _5 min__ When requested to investigate D11 Bus Lockout
report: The D11 Bus Lockout relay 186-115A has actuated and there's a strong smell of burnt insulation in the room. It looks like a fault occurred in the 101-D11 breaker compartment, D11-BUS-09. There's evidence of charring around the compartment door frame.

At time _5 min__ When requested to investigate 10-C126 Trouble
report: All Unit 1 Turbine Enclosure Supply and Exhaust Fans have tripped.

At time _7 min__ When requested to place Backup Service Air Compressor in service
report: The Backup Service Air Compressor is in service.

At time _5 min__ When requested to verify '1B' PCIG Compressor is in service
report: The '1B' PCIG Compressor is in service.

If requested to open breakers for DWCW PCIVs per E-D11 step 2.2, after 8 minutes toggle remote function **RPC014A-17A** to **OPEN** and
report: E-D11 step 2.2 is complete.

If requested to close 11-1010 and 11-2010 valves, after 8 minutes toggle remote function **RSW396** to **YES** and report valves are closed.

Ensure **Trigger #_4_** Manually actuated at the direction of the lead evaluator.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 4 D11 BUS LOCKOUT	
	Reference appropriate ARC: • 120 A-1, D11 BUS/DIFF OVERCURRENT LOCKOUT • 120 A-2, 101 D11 BUS BRK TRIP • 120 C-4, D11 DIESEL RUNNING • 107 E-3, SPOTMOS TROUBLE ALARM DIV 1 • 111 A-5, 1A RECIRC PUMP MOTOR WINDING COOLER LO FLOW • 112 A-5, 1B RECIRC PUMP MOTOR WINDING COOLER LO FLOW	PRO
	[ARC-MCR-120 A-2] Recognize loss of D11 Safeguard Bus	PRO
	[ARC-MCR-120 A-1] Recognize D11 Bus lockout, enter and execute E-D11	SRO
	[ARC-MCR-120 A-1] Dispatch floor personnel to investigate D11 Bus and, verify diesel generator operating parameters normal	PRO
	[E-D11 2.1] At 10C681 Place the following to 'B' Loop: **(Malfunction)** (Swap recirc pump motor coolers and drywell sump cooler to B loop DWCW) • HSS-87-140 • HSS-87-151 • HSS-87-150	PRO
	[E-D11 2.3] At 10C655 Verify auto start of '1B' TECW Pump 1BP103	PRO
	[E-D11 2.4] At 10C667 Start 'C' ESW Pump 0CP548 **OR** Secure D11 D/G per S92.2.N	PRO
	Direct floor personnel to close 11-1010 and 11-2010 valves, if ESW running	PRO
	If D11 D/G is not secured, dispatch EO to perform running checks per S92.9.N	PRO
	[E-D11 2.2] Direct floor personnel to open breakers for DWCW PCIVs per E-D11 step 2.2	PRO
	[E-D11 2.5] Direct floor personnel to start Backup Service Air Compressor	PRO

EVENT – 4 D11 BUS LOCKOUT

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger

Respond to request for assistance as appropriate.

Ensure **Trigger #_4_** automatically actuated as HS-87-140 is placed to 'B' Loop, to initiate SLC Pump start.

At time _5 min__ When requested to investigate D11 Bus Lockout
report: The D11 Bus Lockout relay 186-115A has actuated and there's a strong smell of burnt insulation in the room. It looks like a fault occurred in the 101-D11 breaker compartment, D11-BUS-09.

At time _5 min__ When requested to investigate 10-C126 Trouble
report: All Unit 1 Turbine Enclosure Supply and Exhaust Fans have tripped.

At time _7 min__ When requested to place Backup Service Air Compressor in service
report: The Backup Service Air Compressor is in service.

At time _5 min__ When requested to verify '1B' PCIG Compressor is in service
report: The '1B' PCIG Compressor is in service.

If requested to open breakers for DWCW PCIVs per E-D11 step 2.2, after 8 minutes toggle remote function **RPC014A-17A** to **OPEN** and
report: E-D11 step 2.2 is complete.

If requested to close 11-1010 and 11-2010 valves, after 8 minutes toggle remote function **RSW396** to **YES** and report valves are closed.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 4 D11 BUS LOCKOUT	
	[E-D11 2.6] Verify auto start of A1, E1, C1 and G1 Drywell Cooler Fans	PRO
	[E-D11 2.7] Dispatch personnel to verify '1B' PCIG Compressor is in service	PRO
	[E-D11 2.8] Direct floor personnel to manually throttle service water to Gen H2 Coolers and Alterrex Coolers	PRO
	[E-D11 3.2] Complete MCR HVAC isolation per S78.8.A	PRO
	[S78.8.A 4.2.2. thru 4.2.5] At 10C681 • PLACE HS-78-017C to RESET • PLACE HS-78-017A to RESET • PLACE HSS-78-017C to RAD • PLACE HSS-78-017A to RAD • PLACE HS-78-017C to AUTO • PLACE HS-78-017A to AUTO • Depress and release HSS-78-017C TRIP • Depress and release HSS-78-017A TRIP	PRO
	[S78.8.A 4.3.2. thru 4.3.5] At 10C681 • PLACE HS-78-017B to RESET • PLACE HS-78-017Dto RESET • PLACE HSS-78-017B to RAD • PLACE HSS-78-017D to RAD • PLACE HS-78-017B to AUTO • PLACE HS-78-017Dto AUTO • Depress and release HSS-78-017C TRIP Depress and release HSS-78-017A TRIP	PRO
	Dispatch floor personnel to investigate 10-C126 panel trouble	PRO
	[ARC-MCR-120 A-2] Refer to ST-6-092-365-0 and ST-6-092-366-0 AND perform as required (time permitting)	SRO/PRO
	Reference the following Tech Specs as required: 3.4.3.1, 3.5.1, 3.6.1, 3.6.5, 3.7.1, 3.7.2, 3.6.1.4, 3.8.1.1 (1 hour to perform Inop Diesel ST) 3.8.2.1 (2 hours for Battery Charger – most limiting) TRM 3.3.7.5	SRO
	Brief crew on loss of significant equipment (E-D11 step 3.4)	SRO

EVENT – 5 '1B' SLC PUMP STARTS AND INJECTS
EVENT – 6 ATWS
EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure **Trigger #5** automatically actuates when APRM power < 4%, to initiate RCIC steam leak.

At time _5 min_ manually initiate **Trigger #** _7_ to insert **MSL198B,** SLC Pump '1B' Loss Of Control Power, to remove '1B' SLC Pump from injection and
report: '1B' SLC Pump Breaker has been opened.

OR

At time _5 min_ If directed to open feed for '1B' SLC Pump
DELETE malfunction **MSL001B** and override '1B' SLC Pump indicating lights off and
report: 1B SLC Pump Breaker has been opened.

If requested to re-close the breaker for '1B' SLC Pump
Insert malfunction **MSL001B** and **DELETE** override for indicating lights.

OR

Remove **MSL198B,** SLC Pump 1B Loss Of Control Power

At time _6 min_ after FSSV or EO action requested for T-214;
report: _T-214 is complete_ to _MCR_

When contacted after FSSV or EO action requested for T-215;
report: _T-215 is in progress_ to _MCR_

At time _10 min_ after FSSV or EO action requested for T-216;
report: _The scram air header isolation valve handwheel broke off, I'm looking for another way to isolate the air header_ to _MCR_

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 5 '1B' SLC PUMP STARTS AND INJECTS **EVENT – 6 ATWS** **EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS**	
	EVALUATORS NOTE: In response to the ATWS, the crew will implement T-101 and T-117, including reactor pressure and level control, and the initial level lowering per T-270. When reactor level is lowered to less than -50", Auto ARI will insert the control rods.	
	Reference ARC: • 108 I-4, STANDBY LIQUID SQUIB VALVE LOSS OF CONTINUITY • 113 B-5, CORE SPRAY LINE INTERNAL BREAK • 112 G-2, 1A RWCU RECIRC PUMP TRIP	RO/PRO
	[ARC-MCR-113 B-5] Recognize '1B' SLC Pump running and injecting without valid initiation signal	RO
	Attempt to secure '1B' SLC Pump	RO
	Direct floor personnel to open '1B' SLC Pump breaker	RO/PRO
	[ARC-MCR-108 I-4] Enter and execute OT-104, Att. 1 **(Abnormal)**	SRO
	[OT-104 Att#1] Direct manual scram	SRO
	Announce plant scram on PA	PRO
	Attempt manual scram	RO
	Recognize failure of 'B' RPS to de-energize	RO
	Enter T-101 on Reactor Power >4% with scram signal present	SRO
	[T-101 RC-4] Place RMS to SHUTDOWN	RO
	[T-101 RC-6] Insert IRMs and SRMs	RO
	[T-101 RC/Q-8] Runback Recirc pumps to minimum	RO
	[T-101 RC/Q-10] Trip both Recirc pumps at least 10 seconds apart	RO
	[T-101 RC/Q-12] Bypass RWM and manually insert control rods	RO

EVENT – 5 '1B' SLC PUMP STARTS AND INJECTS
EVENT – 6 ATWS
EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _11 min__ after FSSV or EO action requested for T-221, perform the following:
Toggle Remote Function **RTR051** to "**BYPASS**" and
report (via phone): __T-221 is complete on Unit 1.

At time _6 min__ after FSSV or EO action requested for implementation of T-251
contact MCR: and have Operators verify that HV-055-1F006 indicates closed in the MCR
AND perform the following: **Toggle** Remote Function **RTR309** to **"OPEN"** and
report: T-251 is complete in the field

At time _7 min_ **OR** immediately if pre-staged for at least 7 minutes_ after FSSV or EO action requested for T-270, manually perform T-270 as follows:
Toggle Remote Functions **RTR220 through RTR227** to **"TEST"**
OR load the 7-minute T-270 file from the Ops Training Scenarios\Remotes folder and
report (via phone): Section 4.7 of T-270 is complete
OR
Manually **Trigger #** __6__ to perform T-270 section 4.7

Manually **Trigger #** __7__ to open breaker for '1B' SLC Pump

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 5 '1B' SLC PUMP STARTS AND INJECTS **EVENT – 6 ATWS** **EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS**	
	EVALUATORS NOTE: The control rods will insert when ARI automatically initiates as reactor level decreases to -38" during the performance of T-270.	
	Recognize failure of Continuous Insert pushbutton **(Malfunction)**	RO
	Insert control rods using single notch insert pushbutton	RO
	[T-101 RC/Q-12] Direct performance of the following • T-213, Individual rod scram • T-214, Manual ARI • T-215, Scram solenoids • T-216, Air header • T-219, Maximize CRD cooling water flow during an ATWS • T-209, Injection from SLC storage tank with RCIC	SRO
	[T-101 RC/L-4] Exit RC/L and enter and execute T-117, Power / Level Control	SRO
	[T-117 LQ-5] Manually inhibit automatic ADS	PRO
	[T-101 RC/P-1] Stabilize RPV pressure	SRO
	[T-117 LQ-6] Direct performance of T-221 to bypass MSIV isolation to personnel outside Main Control Room (MCR)	SRO
	[T-117 LQ-7] Perform T-270 to reduce RPV level to less than -50 inches **(Critical Task)**	RO/PRO
	EVALUATORS NOTE: The following steps are directed by T-270, Terminate and Prevent Injection Into The RPV.	
	Direct performance of Section 4.7 of T-270 to personnel outside Main Control Room (MCR)	RO/PRO
	[T-270 step 4.2.3] HPCI IF HPCI initiation signal is <u>not</u> present, <u>THEN</u> shutdown 10S211, "HPCI Turbine" as follows: Simultaneously DEPRESS <u>AND</u> HOLD HS-056-161, "Pushbutton for HPCI Turbine Trip (E41A-S19) (TURBINE TRIP) <u>AND</u> CLOSE HV-55-1F003, "HPCI Main Steam Supply Outbd PCIV	PRO

EVENT – 5 '1B' SLC PUMP STARTS AND INJECTS
EVENT – 6 ATWS
EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure **Trigger** **#4** automatically actuates when APRM power < 4%, to initiate RCIC steam leak.

At time 11 min after FSSV or EO action requested for T-221, perform the following:
Toggle Remote Function **RTR051** to "**BYPASS**" and
report (via phone): T-221 is complete on Unit 1

At time 6 min after FSSV or EO action requested for implementation of T-251
contact MCR: and have Operators verify that HV-055-1F006 indicates closed in the MCR
AND perform the following: **Toggle** Remote Function **RTR309** to "**OPEN**" and
report: T-251 is complete in the field

At time 7 min **OR** immediately if pre-staged for at least 7 minutes after FSSV or EO action requested for T-270, manually perform T-270 as follows:
Toggle Remote Functions **RTR220 through RTR227** to "**TEST**"
OR load the 7-minute T-270 file from the Ops Training Scenarios\Remotes folder and
report (via phone): Section 4.7 of T-270 is complete
OR
Manually **Trigger#** **6** to perform T-270 section 4.7

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 5 '1B' SLC PUMP STARTS AND INJECTS **EVENT – 6 ATWS** **EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS**	
	[T-270 step 4.6.1] FEEDWATER ENSURE HV-06-138A, 1A RFP BPV (BYPASS) closed at panel 10C651	RO
	[T-270 step 4.6.2] ENSURE LIC-06-138, A Feedwater Startup Level Control, (LV STARTUP BYPASS) in manual and set to 0% at panel 10C603	RO
	[T-270 step 4.6.3] ENSURE LIC-06-120, Reactor Feedpumps Bypass Cont Valve, (PUMP BYPASS) in manual and set to 0% at panel 10C603	RO
	[T-270 step 4.6.4] ENSURE FIC-M1-1R601A, B, C "A,B,C RFPT Speed Controller in manual for all three RFPTs at panel 10C603	RO
	[T-270 step 4.6.5] DEPRESS EMERGENCY STOP pushbutton for all three RFPTs at panel 10C603	RO
	[T-270 step 4.6.6] WHEN EMERGENCY STOP light goes out, THEN depress AUTO START pushbutton for all three RFPTs at panel 10C603	RO
	Evaluator Note: HV-06-108A,B,C will stop being stoked closed when reactor level reaches -50 inches	
	[T-270 step 4.6.7] CLOSE HV-06-108A, 1A RFP Discharge	RO
	[T-270 step 4.6.8] CLOSE HV-06-108B, 1B RFP Discharge	RO
	[T-270 step 4.6.9] CLOSE HV-06-108C, 1C RFP Discharge	RO
	[T-117 LQ-7] Establish RPV level < –50 inches performing T-270 **(Critical Task)**	RO
	Direct performance of T-251, to establish HPCI flow path via Feedwater	SRO
	Recognize all control rods inserted due to auto ARI	RO
	Exit T-117 and re-enter T-101	SRO
	Call off performance of T-200 procedures not yet performed	Crew

EVENT – 5 '1B' SLC PUMP STARTS AND INJECTS
EVENT – 6 ATWS
EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure **Trigger #5** automatically actuates when APRM power < 4%, to initiate RCIC steam leak.

No further actions are required for this event

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 5 "1B" SLC PUMP STARTS AND INJECTS **EVENT – 6 ATWS** **EVENT – 7 CONTINUOUS INSERT PUSHBUTTON FAILS**	
	SM call EP Communicator to MCR	
	Shift Manager declares a Site Area Emergency (MS2) due to Threshold(s): 1. Automatic scram was not successful as indicated by Reactor Power > 4% **AND** 2. Manual scram/ARI actions were not successful from the Reactor Console as indicated by Reactor Power > 4% Within 15 minutes: Time Condition Available: _____ Time Classification Made: _____	
	SM accurately completes State/Local Event Notification Form EP-MA-114-100-F-01	
	SM Determines that there is not a release in progress.	
	The SM provides the Notification form to the EP Communicator within 9 minutes and makes required notifications of declaration being made per EP-MA-114-100 Time Classification Made _____ Time Notification Form provided to EP Communicator _____ Time Notification Made _____	
	SM completes Shift Emergency Director checklist EP-AA-112-100 F-01	
ⓓ	SM announces SAE on PA within 15 minutes of declaration	
	SM provides crew update on declaration with escalation criteria within 15 minutes of declaration	
ⓓ	The SM notifies NRC of the event within 1 hr. of the Declaration	

EVENT – 8 RCIC STEAM BREAK
EVENT – 9 '1M' SRV FAILS CLOSED

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure **Trigger #5** automatically actuates when APRM power < 4%, to initiate RCIC steam leak.

Following SE-8, fire plant announcement, when dispatched, Fire Brigade Leader
reports: The Fire Brigade leader is responding to the fire alarm code 1-1-2

Simulator Operator - should use the OCOEE T-103 Temperature and Radiation display Tables at the simulator Operator Station to track the temperatures/radiation changes in order to make timely T-290 reports

NOTE: Main Steam Line Rad levels will acquired from MCR, NOT on OCOEE

At time 5 min after FSSV or EO action requested for T-290 readings
report: T-290 readings as requested from OCOEE T-103 Temperature values from instructor terminal
AND Subsequent follow-up reports will be per the instructions of the CRS to MCR

At time when T-290 monitored parameter reaches the Maximum Normal Operating (MNO) or Maximum Safe Operating (MSO) value
report via phone: Appropriate temperature/radiation level with trend (UP FAST or UP SLOW) to MCR CRS

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 8 RCIC STEAM BREAK **EVENT – 9 '1M' SRV FAILS CLOSED**	
	Reference ARC; • 006 E-1-L, REAC 1 177' EL RCIC PUMP • 107 H-5, DIV 3 Steam Leak Det SYS HI Temp / Trouble • 107 F-5, DIV 1 Steam Leak Det SYS HI Temp / Trouble • 004 A-2, A REAC ENCL HVAC PNL 1AC208 Trouble	PRO
	[ARC-MCR-006 E-1-L] (FIRE ALARM) Enter SE-8	PRO
	[ARC-MCR-006 E-1-L] Dispatch Fire Brigade Leader (FBL)	PRO
	Notify FBL of potential for steam leak verify door hot-to-touch	PRO
	Notify FBL of Fire Procedure F-R-108	PRO
	[ARC-MCR-107 F-5] Enter T-103 (Division 1 Steam Leak Detection alarm)	SRO
	[T-103 SCC-3] Direct use of PAMS, Fuel Zone, and EQ PMS only	SRO
	[T-103 SCC-6] Direct performance of T-290 **(Critical Task)**	SRO
	[T-103 SCC/T-3] Direct performance of T-291 (time permitting)	SRO
	[ARC-MCR-004 A-2] Dispatch EO to investigate Panel 1AC208 Trouble alarm	PRO
	Recognize indications of a RCIC steam leak	PRO
	Recognize RCIC Outboard Valve de-energized	PRO
	Direct closing HV-49-1F007 from handswitch	SRO
	Recognize/report failure of HV-49-1F007 to close	PRO
	The SM is notified that RCIC Isolation valves have failed to close Time _____	SRO
	Direct floor personnel to attempt closure of HV-49-1F007 from MCC	PRO
	Recognize failure of RCIC to isolate with active steam leak in progress	Crew
	[T-103 SCC/T-5] Direct isolation of RCIC System per T-250 after report of exceeding MNO	SRO

EVENT – 8 RCIC STEAM BREAK

EVENT – 9 '1M' SRV FAILS CLOSED

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Simulator Operator - should use the OCOEE T-103 Temperature and Radiation display Tables at the simulator Operator Station to track the temperatures/radiation changes in order to make timely T-290 reports

NOTE: Main Steam Line Rad levels will acquired from MCR, NOT on OCOEE

At time _5 min_ after FSSV or EO action requested for T-290 readings
report: _T-290 readings as requested from OCOEE T-103 Temperature values from instructor terminal
AND _Subsequent follow-up reports will be per the instructions of the CRS_ to _MCR_

At time when T-290 monitored parameter reaches the Maximum Normal Operating (MNO) or Maximum Safe Operating (MSO) value
report via phone: _Appropriate temperature/radiation level with trend (UP FAST or UP SLOW)_ to _MCR CRS_

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 8 RCIC STEAM BREAK **EVENT – 9 '1M' SRV FAILS CLOSED**	
	[ARC-MCR-004 A-2] Re-enter T-103 (1AC208 Trouble Alarm and Report)	SRO
	Re-enter T-103 (Reactor Enclosure Floor Drain Sump Alarm and Report)	SRO
	Depressurize RPV within 100 °F/hour cooldown rate to reduce leakrate into Reactor Enclosure	PRO
	Reference ARC as required: • 005 A-1, Motor Driven Fire Pump Auto Start • 005 B-2, Diesel Driven Fire Pump Auto Start • 127 H-4, Reac Encl Flr Drn Sump HI-HI Level • 002 F-5, Reac Encl Stm Flooding Damper Panel 10C234	RO/PRO
	[SE-8 3.3.4] Re-enter SE-8 on Diesel Driven and Motor Driven Fire Pumps starting	PRO
	[SE-8 Att#8] Evacuate personnel from affected areas of Unit 1 Reactor Enclosure and reference SE-24, In-Plant Evacuations	PRO
	Reference ARCs as required: • 107 G-5, DIV 2 STEAM LEAK DET SYS HI TEMP/ TROUBLE • 107 I-5, DIV 4 STEAM LEAK DET SYS HI TEMP/ TROUBLE	PRO
	Recognize second area, Room 309, reported above MNO temperature value	SRO
	[T-103 SCC/T-9] Track Room 309 temperature toward MSO temperature value	SRO
	[T-101 RC/P-6] Consider rapidly depressurizing the RPV using Main Turbine Bypass Valves prior to exceeding MSO value in two Reactor Enclosure areas	SRO
	[T-103 SCC/T-11] Enter T-112 AND Execute concurrently	SRO
	[T-112 EB-13] Open 5 ADS SRVs **(Critical Task)**	PRO
	Recognize '1M' SRV did not open by monitoring DAS	PRO
	[T-112 EB-14] Open a non-ADS SRV **(Malfunction)**	PRO
EVALUATORS NOTE: This SEG may be terminated when 5 SRVs are opened and reactor level has been stabilized within the required band.		

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	Rough Log(s) Maintained by the crew with the following items noted: • 114A Load Center • #3 Stop Valve closes • Loss of DIV 1 DC to RRCS • D11 Bus Lockout • '1B' SLC initiation • Reactor Scram and T-101 entry • ATWS and T-117 entry • EP Declaration Site Area Emergency • Turbine Trip • LOCA Signal • RCIC room steam leak • All Control Rods In • '1M' SRV failure • T-112 Emergency Blowdown on second room • Tech Specs: 3.4.3.1, 3.5.1, 3.6.1, 3.6.5, 3.7.1, 3.7.2, 3.6.1.4,	Crew
	Critique any instances where fundamentals were not properly adhered to, and whether in-the-moment coaching was provided by Supervision. Provide examples of effective Leadership and areas for improvement.	SM

Attachment 1
Simulator Operator Response Times

Procedure	Performance	Response Time (Minutes)
T-209	Injection from the Standby Liquid Control Storage Tank with the RCIC System	45
T-212	Bypassing SQUIB Valves for SLC Injection	19
T-215	De-energization of Scram Solenoids	7
T-216	Manual Isolation and Vent of Scram Air Header	7
T-217	RPS/ARI Reset and Backup Method of Draining Scram Discharge Volume	17
T-219	Maximizing CRD Cooling Water Header Flow during ATWS Conditions	23
T-221	MSIV Isolation Bypass Procedure	11
T-225	Startup and Shutdown of Suppression Pool and Drywell Spray Operations	8
T-240	Maximizing CRD flow after Shutdown During Emergency Conditions	8
T-245	RPV Injection from RHR S/D Cooling	12
T-248	Injection from SLC Test Tank to RPV	15
T-251	Establish a HPCI Injection flow Path VIA Feedwater Only	6
T-270	Terminate and Prevent Injection into the RPV	7
T-290	Instrumentation Available for T-103 SAMP-2	5
S46.7.A (4.2.1)	Control Rod Drive Hydraulic System Operation Following Reactor Scram (Securing CRD flow to the Reactor - Close 46-1F060, CRD Water Pressure Control Station Inlet Valve)	7
SE-10-1 Resets and Floor action	Breaker Reset Following LOCA (Also reset ARMs, RHRSW Rad Monitor and RDCS)	10

Attachment 2
Communications Log

CREW: _____

DATE: _____ LSEG: _____

START TIME: _____ STOP TIME: _____

SM: _____ RO: _____ WCS: _____

CRS: _____ PRO: _____ FSSV: _____

TIME	PERSON CALLING	PERSON BEING CALLED	COMMUNICATION / REQUEST	CALL BACK TIME

XII. CREW PREBRIEF INSTRUCTIONS

- Unit 1 is in OPCON 1 at 100% power
- Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- None

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- None

Planned Evolutions:

- Cross-Tie 114A Load Center to 124A Load Center per S93.7.A to remove the 114A Load Center Transformer supply breaker for maintenance.

Documents Provided:

- S93.7.A, Supplying Power to a 480 VAC Non-Safeguard Load Center from it's Alternate Source completed up to and including step 4.6.1
- Pre-Job Briefing Sheet for S93.7.A

LIMERICK GENERATING STATION
SIMULATOR EVALUATION GUIDE

CODE NO:	SEG-6214E	REV NO:	001
AUTHOR:	J. N. KOELLE	APPROXIMATE RUN TIME:	70 minutes
TYPE:	SIMULATOR EVALUATION GUIDE	EFFECTIVE DATE:	11/6/15
PROGRAM:	LICENSED OPERATOR TRAINING		
COURSE:	LICENSED OPERATOR (REQUALIFICATION/INITIAL) TRAINING		
TITLE:	Simulator Evaluation Guide for Individual and Crew Performance		

Prepared By: _____ Date: 11/12/15
Training Instructor - Signature

Reviewed By: N/A FOR NRC INITAL Date: N/A
Program (ILT or LOR) Lead - Signature

Reviewed By: A.W. HIGHTOWER, EPM Date: 11/12/15
EP (as appropriate) - Signature

Reviewed By: N/A Date: N/A
RE (as appropriate) - Signature

Approval: _____ Date: 11-19-15
OPS Manager - Signature

Approved For Use: _____ Date: 11-19-15
Training Manager - Signature

Facility: Limerick 1 & 2 Scenario No.: SEG-6214E Rev 1 Op-Test No.: _____.

Examiners: _____ Operators: _____

Initial Conditions:

Unit 1 is at 100% power. Unit 2 is at 100% power.

Turnover:

No equipment is known to be inoperable.

Event No.	Malfunction Number	Event Type*	Event Description
1	118 I-5	C-PRO R-RO	Loss of Iso-Phase Bus Cooling **(Abnormal)**
2	MRP029A MV1232B	I-RO TS-SRO	RPS Level Instrument Failure **(Abnormal)**
3	MCR412A MCR547 MRD016C (10-11) (34-35) (42-23)	C-RO C-PRO TS-SRO	CRD Pump Failure CRD System Failure **(Abnormal)** HCU Accumulator(s) Trouble
4	MRD557 MSL559 MMT002	M-ALL C-RO	ATWS (Scram Air Header fails to depressurize) with Turbine Trip
5	MAD148C	C-PRO	'1M' SRV fails open (electrical)
6	MRC457B	C-PRO	RCIC fails in automatic

* **(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor**

I. **PURPOSE:** Systematically evaluate individual and team performance to identify areas for improvement. Critical Tasks and Assessment Items from this evaluation guide are to be used to assess crew and individual performance and as input into a 4.0 Crew Critique Process.

II. SIMULATOR EVALUATION GUIDE OBJECTIVES:

A. The following evaluation objectives apply to the Crew (C), Shift Manager (SM), Control Room Supervisor (S), Unit Reactor Operator / Plant Reactor Operator (R), or Incident Assessor / Shift Technical Advisor (A) as indicated in the following categories.

1. The general condition for each of the evaluation objectives will be "Given the plant conditions and sequence of events in the Simulator Evaluation Guide (SEG)".
2. The general acceptable evaluation objective criteria for each of the evaluation objectives will be "To perform effectively as an individual and contribute to successful crew performance in accordance with appropriate reference plant procedures and Operations Expectations, Fundamentals and Strategies".
3. Specific UNSAT evaluation objective criteria will be consistent with TQ-AA-155, Conduct of Simulator Training and Evaluation with applicable forms and job aids.
4. During performance of this Simulator Evaluation Guide, the individuals and crew should satisfactorily demonstrate the following overall procedure and plant control objectives:
   - Direct and perform actions per ON-107, Control Rod Drive System Problems
   - Direct and perform actions per ON-101, Loss of Iso-Phase Bus Cooling
   - Direct and perform actions per OT-114, Inadvertent Opening of a Relief Valve
   - Direct and perform actions per OT-117, RPS Failures
   - Direct and perform actions per T-101, RPV Control
   - Direct and perform actions per T-102, Primary Containment Control
   - Direct and perform actions per T-117, Level/Power Control
   - Direct and perform actions per T-251, Establish a HPCI Injection Flow Path via Feedwater Only
   - Direct and perform actions per T-221, MSIV Isolation Bypass Procedure

III. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence.
B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision.
C. All Pen & Ink Changes shall be in accordance with TQ-AA-223.

Temp Change #	Date of Change	Purpose of Change	LORT Approval	Action Tracking	Revision Date

IV. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.
B. The description of the Revision should adequately indicate how the training content of the Revision has changed.
C. The description of the Revision should also include previous format reference and number and previous template used (e.g for conversion of LSTS to LLORSEG format).

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
Rev000	This is a reformat to the new SEG Evaluation template. This SEG-E replaces LSES-7015, Rev 4.	9/3/14
Rev001	Revised for Use	7/29/15

V. SCENARIO EVENT AND EVALUATION SUMMARY:

Event One: After the crew has assumed responsibility, a loss of Isophase Bus Cooling will occur.

Evaluation: To evaluate the crew's ability enter and execute ON-101 and perform a power reduction in accordance with GP-5 Appendix 2, "Planned Rx Maneuvering Without Shutdown," and the RMSI until Isophase Bus Cooling is restored.

Event Two: Once power has been reduced to approximately 85% due to loss of Isophase Cooling and cooling is restored, the A1 RPS level instrument will fail downscale with a failure of 'A' RPS to half-scram.

Evaluation: Evaluate crew's ability to recognize the failure to half-scram, enter OT-117 and insert a manual half-scram on 'A' RPS. The SRO will also reference Tech Spec 3.3.1 for the failed RPS channel.

Event Three: After a half-scram has been inserted, the '1A' CRD Pump will trip on overcurrent. An HCU accumulator alarm will be received shortly after the pump trip. The '1B' CRD pump will start, and then trip on low suction pressure. The suction filter bypass valve will fail to open, and two more HCU accumulator alarms will be received.

Evaluation: Evaluate the crew's response to loss of CRD, including mitigating actions taken per ON-107, Loss of CRD, and GP-4, Rapid Plant Shutdown.

Event Four: When the crew attempts to scram the reactor, the scram air header will fail to depressurize resulting in a high power ATWS. Complicating the event, the SLC line will rupture inside Primary Containment.

Evaluation: Evaluate the crew's ability to utilize T-101, RPV Control, and T-117, Level/Power Control, to take control reactor level and pressure and insert control rods.

Event Five: When the Reactor Mode Switch is placed in Shutdown, the '1M' SRV will fail open resulting in a gradual heat-up of the Suppression Pool.

Evaluation: Evaluate the crew's ability to implement OT-114 and direct actions to close the '1M' SRV.

SCENARIO EVENT AND EVALUATION SUMMARY cont'd

Event Six: RCIC will fail to inject in automatic after receipt of an automatic initiation signal.

Evaluation: Evaluate the crew's ability to diagnose the failure of RCIC to start from a LO-LO Level initiation signal and start RCIC manually.

Event Seven: After level is intentionally lowered and pressure has been stabilized, the Main Turbine Thrust Bearing Wear Detector will cause a Turbine trip.

Evaluation: Evaluate the crew's ability to Implement T-270 and operate the Feedwater system to maintain RPV level in the appropriate band, and insert control rods. Suppression Pool temperature will exceed 110°F requiring the crew to lower level below –161 inches.

Termination Point: The scenario may be terminated when, RPV level has been intentionally lowered and is being maintained above –186" and control rods are inserted per T-216.

VI. REFERENCES

A. Training Procedures
   1. TQ-AA-150, Operator Training Programs
   2. TQ-AA-155, Conduct of Simulator Training and Evaluation

B. Annunciator Response Cards (ARC)
   1. 111 A-5, 1A RECIRC PUMP MOTOR WINDING COOLING WATER LO FLOW
   2. 118 I-5, Iso-Phase Bus Cooler Trouble
   3. 112 A-5, 1B RECIRC PUMP MOTOR WINDING COOLING WATER LO FLOW
   4. 108 H-4, CRD Charging Water Low Pressure
   5. 108 G-1, 1A/1B CRD Water Pump Trip
   6. 108 G-2, 1A/1B CRD Water Pump Motor Overcurrent
   7. 108 F-1, CRD Accumulator Trouble
   8. 108 G-5, CRD Hydraulic HI Temp
   9. 105 J-5, TBWD PREALARM/SYS TROUBLE
   10. 107 H-1, REACTOR WATER LEVEL BELOW LEVEL 3
   11. 110 E-3, RPS System A Out Of Service
   12. 111 D-5, NSSSS Isolation System OOS (INBD)

C. System Procedures (S)

D. General Procedures (GP)
   1. GP-4, Rapid Plant Shutdown to Hot Shutdown
   2. GP-5, Steady State Operations
   3. GP-5, Appendix 3, Unintentional Drop in Power

E. Off Normal Procedures (ON)
   1. ON-107, Control Rod Drive System Problems
   2. ON-101, Loss of Isophase Bus Cooling

F. Operating Transient Procedures (OT)
   1. OT-114, Inadvertent Opening of a Relief Valve
   2. OT-117, RPS Failures

G. Event Procedures (E)

H. Special Event Procedures (SE)
   1. SE-10, LOCA

I. Surveillance Test and Routine Test Procedures (ST and RT)

J. Technical Specifications and TRM (TS)
   1. 3.6.3.a
   2. 3.3.2.b
   3. 3.1.3.5
   4. 3.3.1.b

K. Transient Response Implementation Procedures (T-100 series)/SAMPs
   1. T-101, RPV Control
   2. T-102, Primary Containment Control
   3. T-112, Emergency Blowdown
   4. T-117, Level/Power Control

L. TRIP 200 Series Procedures
   1. T-209, Injection from the Standby Liquid Control Storage Tank with the RCIC System
   2. T-213, Individual Control Rod Scram/Solenoid De-Energization
   3. T-214, Manual Initiation of ARI
   4. T-215, De-energization of Scram Solenoids
   5. T-216, Manual Isolation and Vent of Scram Air Header
   6. T-221, MSIV Isolation Bypass Procedure
   7. T-251, Establish a HPCI Injection Flow Path via Feedwater Only
   8. T-270, Terminate and Prevent Injection Into the RPV

M. EP-AA-1008, Limerick, Radiological Emergency Plan Annex for Limerick Generating Station

N. Administrative Procedures
   1. OP-AA Procedures
      a. OP-AA-1, Conduct of Operations
      b. OP-AA-20, Conduct of Operations Process Description
      c. OP-AA-101-111-1003, Operations Department Standards and Expectations
      d. OP-AA-101-113, Operations Fundamentals
      e. OP-AA-101-113-1006, 4.0 Crew Critique Guidelines
      f. OP-AA-106-101-1006, Operational Decision Making Process
   2. OP-LG Procedures
      a. OP-LG-101-111-1000, Licensed Operator Duties
      b. OP-LG-102-106, Operator Response Time Program at Limerick
      c. OP-LG-103-102-1000, Human Performance Continuing Good Practices
      d. OP-LG-103-102-1002, Strategies for Successful Transient Mitigation
      e. OP-LG-108-101-1001, Simple Quick Acts / Transient Acts

O. Current Shift Night Orders Forced Outage Plan

P. INPO Significant Operating Experience Reports (SOER), Significant Event Reports (SER) and INPO Event Reports (IER)
   1. IER-L1 11-3, Weaknesses in Operator Fundamentals
   2. SER 3-05, Weakness in Operator Fundamentals
   3. SOER 10-02, Engaged Thinking Organizations

VII. PREBRIEF INSTRUCTIONS

Unit 1 is in OPCON 1 at 100% power
Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- Maintain Operation per GP-5, Steady State Operations

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- None

Planned Evolutions:

- Continue operation at 100% per GP-5

Documents Provided:

- None

VIII. DIRECTIONS FOR EVALUATION PREPARATION

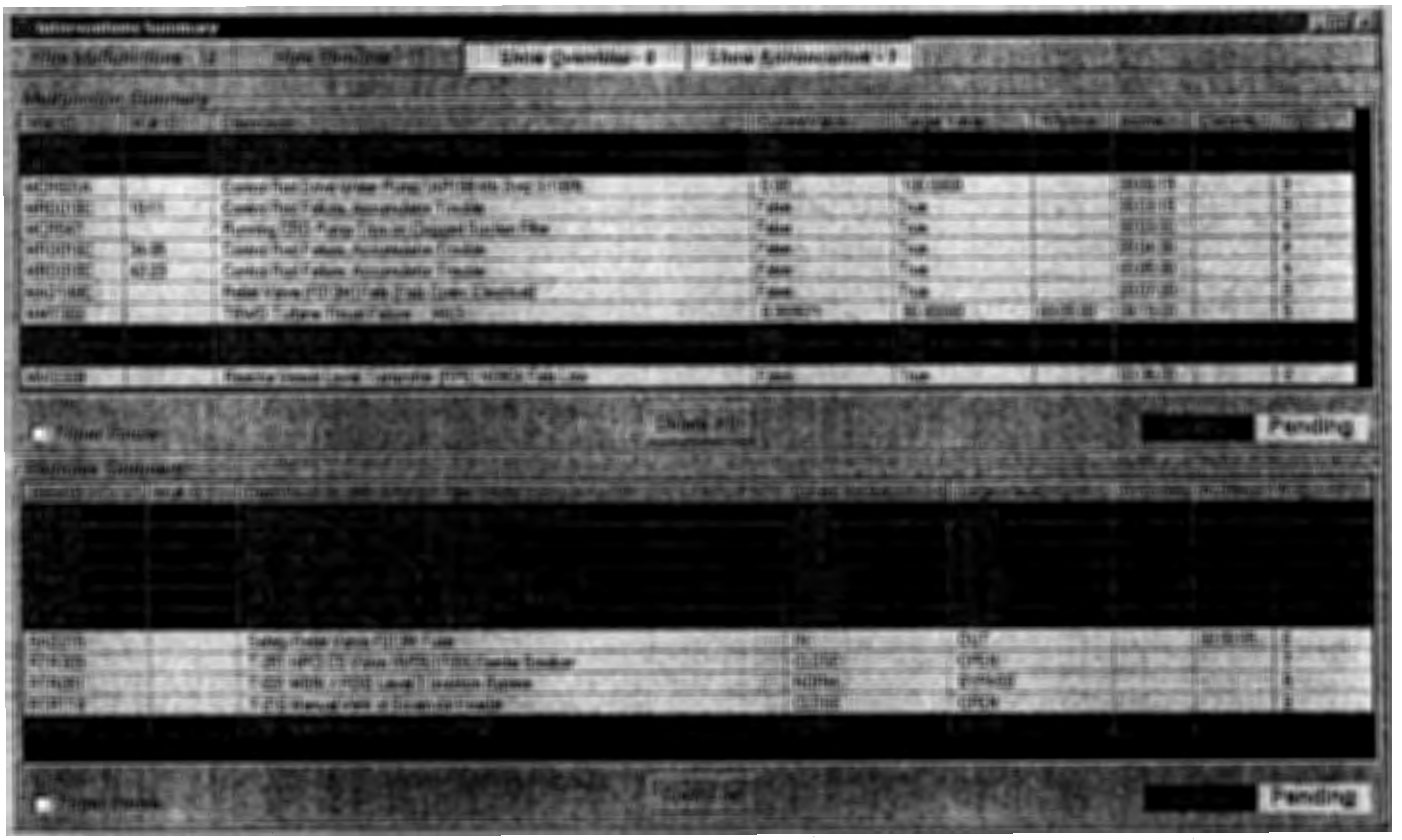
A. INITIAL PREPARATION

✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete TQ-AA-155, Operator Training Programs Attachment 02, Evaluated Scenario Administration Checklist.
	Complete TQ-LG-201-0113, Limerick Training Department Simulator Examination Security Actions Checklist
	Complete Limerick Simulator Pre-Evaluation Checklist

B. SIMULATOR SETUP

✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete Limerick Simulator Pre-Evaluation Checklist
	Reset Simulator to the Pre-loaded Cycle **IC-** developed for this Scenario **OR** Reset the simulator to **IC-17** **AND** Load scenario file **SEG-6214E Rev001.scn** • Verify that all Malfunctions, Remotes, Overrides, Annunciators and Triggers are properly loaded **OR** • Manually enter the Malfunctions, Remotes, Overrides, Annunciators and Triggers per the Scenario Generator Screen Shots:
	Simulator Operator (Driver) perform the following: • Momentarily place simulator in RUN • Acknowledge and clear all spurious alarms • Place the simulator back into FREEZE • Place appropriate tags and equipment in required condition / status.

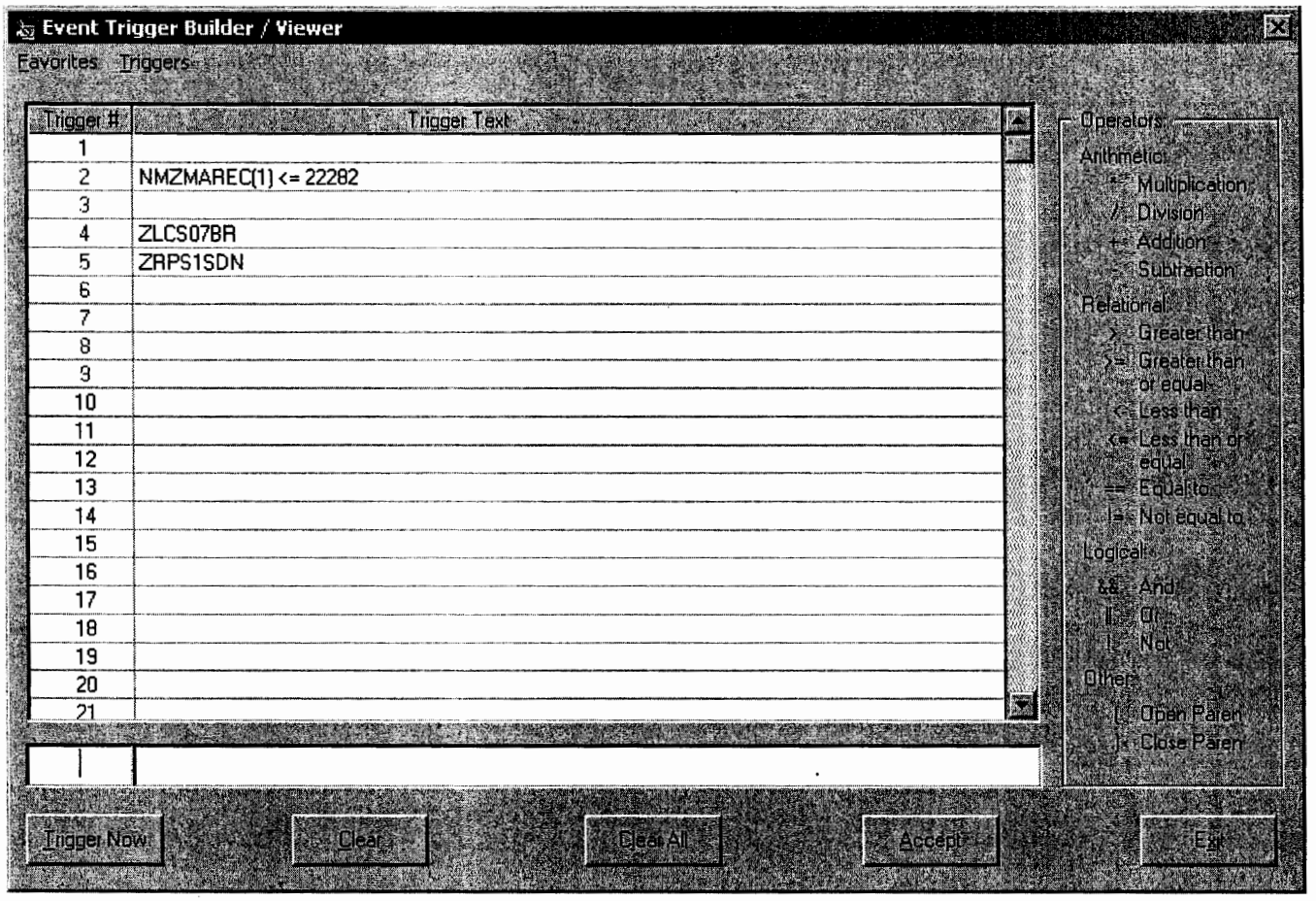
C. MALFUNCTION/REMOTE/OVERRIDE/ANNUNCIATORS FUNCTION TIME TABLE



D. EVENT TRIGGERS ASSIGNMENT

1. Timers should be used on event triggers where possible for time validation.
2. Timing of event triggers may be altered by the Lead Evaluator (or designee).
3. Verify triggers are actuated automatically as designed or manually initiate the trigger when the initiating action has occurred.
4. Inform Lead Evaluator (or designee) of expected plant response prior to actuation of each trigger.
5. Trigger #1 is manually initiated at Lead Evaluator (or designee) direction after the crew assumes responsibility for operation.

	TRIGGER / TIME	MALFUNCTION / EVENT	DESCRIPTION
	1	Manual	Isophase Bus cooler trouble alarm
	2	Auto / NMZMAREC(1)<=22282	Reduction in reactor power to 85% initiates RPS level Instrument Failure
	3	Manual	'1A' CRD Pump overcurrent trip
	4	Auto / ZLCS07BR	'1B' CRD pump handswitch to START Initiates '1B' CRD Pump low suction pressure trip and accumulator trouble alarms
	5	Auto / ZRPS1SDN	Mode Switch to Shutdown Initiates SLC Failure, Relief Valve 'M' Failure and Main Turbine Trip
	6	Manual	Initiates remote to pull '1M' SRV fuses
	7	Manual	T-251 Opens Feeder Breaker for HV-55-1F006 Valve
	8	Manual	T-221 Bypass for MSIV Closure on RPV Level < -129 Inches
	9	Manual	T-216 Vents Scram Air Header



E. EQUIPMENT REPORTS AND LEAD EVALUATOR (OR DESIGNEE) OPERATIONS

1. This table section is moved and now integrated with Assessment of Crew Performance to facilitate simulator Operator and Instructor observation of crew activities related to simulator operation and instructor intervention.
2. Scripted Activity Reports should be followed with adherence to Operations Communication standards of performance.
3. The T-200 procedure reference book should be used for familiarity of reports to aid in operator prompting and expected communications.
4. The Lead Evaluator (or designee) should be informed if any event is not reported as scripted due to lack of Operator request.
5. The Standard Equipment Operator Response Times are per **Attachment 1**
6. A record of communications from the MCR and to the MCR will be maintained by the Simulator Operator using **Attachment 2.**
7. The OCOEE Simulator Operator Station P&IDs, Floor Plans and Panels must be used by the Simulator Operator as reference information when making reports to the MCR for plant parameters which are not driven by a communications script. Examples include: ARMs, Blowout Panel status, Reactor Building Area Temperatures and Pressures, RMMS, Turbine Enclosure parameters etc.

IX. QUANTITATIVE ATTRIBUTES

QUANTITATIVE ATTRIBUTES			
ATTRIBUTE	MINIMUM NUMBER	ACTUAL NUMBER	DESCRIPTION (If Applicable)
TOTAL MALFUNCTIONS	5	6	See Assessment Items
MALFUNCTIONS AFTER EOP	1	2	See Assessment Items
ABNORMAL EVENTS	2	3	ON-101, ON-107, OT-117
MAJOR TRANSIENTS	1	1	ATWS
EOPs USED BEYOND PRIMARY SCRAM RESPONSE	1	2	T-101, T-102
EOP CONTINGENCY PROCEDURES USED	1	1	T-117
CREW CRITICAL TASKS	2	5	T-117.1, T-117.12, T-117.8, T-101.1, OT-114.1
TECHNICAL SPECIFICATIONS EXERCISED	1	4	3.1.3.5., 3.6.3, 3.3.1, 3.3.2
SCENARIO RUN TIME	45 Minutes	70 Minutes	

Enter the level of difficulty (LOD) of each scenario using a 1 – 5 (easy – difficult) rating scale (LOD > 1 and < 5 are acceptable) 3.0

X. CREW CRITICAL TASKS

A. Critical Tasks are based on the current Crew Critical Task List revision, NUREG-1021 Rev 10 and TQ-AA-150 requirements.

1. T-117.1 Inhibit automatic ADS.

K/A	295037	EA2.06	4.0/4.1
K/A	218000	A4.04	4.1/4.1

Standard: Prevent automatic initiation of ADS

SAT/UNSAT

2. T-117.12 Terminate and prevent injection into the RPV.

K/A	295037	EK1.02	4.1/4.3
K/A	295037	EK3.03	4.1/4.5
K/A	295037	EA2.02	4.1/4.2

Standard: RPV level deliberately lowered by Terminating and Preventing injection into the RPV per LQ-11 when conditions of step LQ-14 are met

SAT/UNSAT

3. T-117.8 Maintain RPV level between -186 inches and the level to which it was intentionally lowered.

K/A	295037	EA2.01	4.2/4.3
K/A	295037	EA2.02	4.1/4.2

Standard: RPV level maintained between -186 inches and -161 inches after initially raising PRV level into the required band. Any deviations from the RPV level band DO NOT require and Emergency Blowdown per T-117.

SAT/UNSAT

4. T-101.1 Implement T-216 to insert control rods.

K/A	295015	AA1.02	4.0/4.2
K/A	295037	EA2.05	4.2/4.3
K/A	295037	EA1.05	3.9/4.5

Standard: Implement the performance of T-216 to operations personnel located outside the control room.

SAT/UNSAT

5. OT-114.1 Close the stuck open relief valve.

K/A	239002	A2.03	4.1/4.2

Standard: Direct closure of the stuck open SRV by removing fuses or reducing turbine inlet pressure per OT-114.

SAT/UNSAT

XI. ASSESSMENT OF CREW PERFORMANCE DURING CONDUCT OF THE DYNAMIC SIMULATOR EVALUATIONS:

A. Conduct the Simulator Evaluation Session per TQ-AA-155, Conduct of Simulator Training and Evaluation, Attachment 02, Evaluated Scenario Administration Checklist

B. Assessment of Crew and Individual performance shall be consistent with OP-AA-20, Conduct of Operations Process Description

C. Where possible record the time and position responsible for performance of each task or assessment item

D. Items not performed as expected **SHALL** be discussed in the post performance crew critique

E. During the performance of the evaluation, the Simulator Evaluators shall **MAINTAIN** notes of observations and information consistent with the timeline

F. Assessment items with the symbol indicate a time critical standard for performance

G. Assessment items with the symbol indicate a Probabilistic Risk Assessment (PRA) association with the task

H. The Simulator Operator will respond with scripted or proceduralized responses when requested by the MCR operators with Procedure completion times requested per **Attachment 1**

I. The Simulator Operator will also maintain a timeline and record of all reports and requests issued by the MCR personnel with response provided by the simulator operator using **Attachment 2**

J. Shaded items do not require assessment for ILT Evaluations. The CRS may be requested to complete the Shift ED forms and determine the EAL classification at the completion of the scenario.

EVENT - 1 LOSS OF ISOPHASE BUS COOLING (Abnormal)

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time 5 min when requested to investigate Unit 1 Isophase Bus Cooling,
report: The '1A' Isophase Bus Cooling Fan is tripped and the '1B' Fan has failed to auto start. I am attempting to start the '1B' Isophase Cooling Fan.

As soon as power is lowered less than 85%,
DELETE override for annunciator 118 I-5, contact MCR and
report: '1B' Isophase Fan is running and Isophase Bus temperatures are lowering.

If requested, at time 5 min from initial request to report Isophase Bus Temperatures,
report: 'A' phase temperature is 75°C and rising slow. 'C' phase temperature is 80°C and rising slowly. If crew asks for a trend, report: Both temperatures are rising approximately 1 degree/minute.

Alarm setpoints TISH-10-123A, 176 deg F
TISH-10-123C, 80 deg C

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 1 LOSS OF ISOPHASE BUS COOLING (Abnormal)	
	Reference ARC: • 118 I-5, UNIT 1 ISOPHASE BUS COOLER TROUBLE	PRO
	[ARC-MCR-118-I-5] Dispatch EO to 10C930 panel to investigate cause of alarm	PRO
	[ARC-MCR-118-I-5] If a total loss of Isolated Phase Bus cooling ENTER ON-101, Loss of Isophase Bus Cooling	SRO
	Enter ON-101 after receiving report of no cooling fans running	SRO
	[ON-101 2.2] Direct EO to restore cooling using S34.2.B	PRO
	[ON-101 2.3] Lower Main Generator reactive load to 0 MVARs **(Malfunction)**	PRO
	EVALUATORS NOTE: OP-LG 103-102-1002, Strategies for Successful Transient Mitigation, allows use of the "63% LOSS OF FWP" pushbutton in the case of Loss of Isophase Bus Cooling.	
	[ON-101 2.4] Recognize cooling will not be restored within 10 minutes and reduce power IAW GP5 Appendix 2 and RMSI until Generator Amps <20,000 amps	SRO/RO
	[ON-101 2.5] Direct EO to Monitor Isophase Bus temperatures	PRO
	[GP-5 App#2 3.1] DETERMINE target power level for intended drop in Rx power	SRO
	[GP-5 App#2 3.1] Notify PECO TSO and generation Dispatch of Rx power reduction	PRO
	Respond to report of Isophase Bus Cooling restored and stop lowering power	RO
	Contact WWM for support	PRO
	Contact Reactor Engineering for support	PRO

EVENT - 2 RPS LEVEL INSTRUMENT FAILS (Abnormal)

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure **Trigger # 2** automatically actuates when '1A' APRM indicates ≤ 85% power to initiate RPS level instrument failure.

At time 5 min when directed to investigate RPS level instrument failure in AER, **report:** *LIS-42-1N680A* is tripped downscale.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 2 RPS LEVEL INSTRUMENT FAILS (Abnormal)	
	Reference appropriate ARCs: • 107 H-1, Reactor Water Level Below Level 3 • 110 E-3, RPS System A Out Of Service • 111 D-5, NSSSS Isolation System OOS (INBD)	RO
	[ARC-MCR 107 H-1] Verify actual reactor level is normal/ with no RPS actuation	RO
	[ARC-MCR 110 E-3] Recognize/report scram annunciators without half or full scram	SRO
	Enter OT-117, RPS Failures	RO
	Dispatch EO to Aux Equipment Room to investigate reactor level transmitter status	RO
	Refer to PMS "Unacknowledged Alarms" and determine A1 RPS Low Level trip unit actuation or wait for EO report from AER	RO
	[OT-117 3.2] Direct RO to insert half-scram using A1 channel **(Malfunction)**	SRO
	[OT-117 3.2] Insert A1 half-scram	RO
	[OT-117 3.2.1] Verify 'A' side RPS lights extinguished	RO
	Reference Tech Specs 3.3.1.b and 3.3.2.b	SRO
	Contact WWM for support	Crew

EVENT - 3 LOSS OF CRD PUMPS (Abnormal)

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At the direction of the lead evaluator initiate **Trigger #_3_** for '1A' CRD Pump overcurrent trip.

At time _5 min__ after FSSV or EO action requested for "1A" CRD Pump trip,
report: The '1A' CRD Pump has an overcurrent flag up on the 'B' and 'C' phases.

At time _5 min__ after FSSV or EO action requested for '1B' CRD Pump start
report: '1B' CRD Pump is ready for a start.

If requested to close the 1F014A, '1A' CRD Pump Discharge Valve, perform the following:
Toggle Remote **RCR018** to close and
report: _46-1F014A is **closed**_

When requested to open the 1F014B, '1B' CRD Pump Discharge Valve perform the following:
Toggle Remote **RCR019** to **OPEN** and
report: 46-1F014B is **open;** '1B' CRD Pump start is SAT.

At time _5 min_ for the first HCU alarm (Then_1 minute_ for each subsequent alarm) after FSSV or EO action requested HCU Accumulator Trouble Alarms,
reports: _Accumulator pressure for HCU 10-11 is **900** psig and no water drained
Accumulator pressure for HCU 34-35 is **905** psig No Trend and no water drained
Accumulator pressure for HCU 42-23 is **945** psig No Trend and no water drained

At time _5 min___ after FSSV or EO action requested to Bypass CRD Pump Suction Filter
report: _The 46-1F045 valve handle spins free and the valve stem is not moving.

If Maintenance support requested to support the CRD Pump Suction Filter Bypass
report: The valve stem is separated inside the valve body. It can't be fixed without blocking the suction and going internal on the valve.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 3 LOSS OF CRD PUMPS (Abnormal)	
	EVALUATORS NOTE: The '1A' CRD Pump will trip on overcurrent, and an HCU accumulator alarm will be received shortly after the pump trip. The '1B' CRD pump will start, and then trip on low suction pressure. The suction filter bypass valve will fail to open, and two more HCU accumulator alarms will be received. The crew will respond to the loss of CRD, and take actions directed by ON-107, Loss of CRD, and eventually GP-4, Rapid Plant Shutdown.	
	Reference appropriate ARCs: • 108 H-4, CRD Charging Water Low Pressure • 108 G-1, 1A/1B CRD Water Pump Trip • 108 G-2, 1A/1B CRD Water Pump Motor Overcurrent • 108 F-1, CRD Accumulator Trouble • 108 G-5, CRD Hydraulic HI Temp	PRO/RO
	[ARC-MCR-108 G-1] Recognize '1A' CRD overcurrent pump trip	RO
	[ARC-MCR-108 G-1] Refer to ON-107, Control Rod Drive System Problems. (Attachment 1)	SRO/RO
	Dispatch EO to investigate pump trip	RO/PRO
	[ARC-MCR-108 F-1] Dispatch Operator to inspect Unit 1 HCUs for accumulator trouble	RO/PRO
	[ON-107 Att #2] **CLOSE** 046-1F014A Discharge Stop Check	RO
	[ON-107 Att #2] Direct and start the '1B' CRD Pump **(Malfunction)**	SRO/RO
	Reference ARCs • 108 G-3, 1A/1B CRD Pump Suction Lo Press • 108 H-3, CRD Pump Suction Hi DP	PRO/RO
	[ON-107 Att #2] **OPEN** 046-1F014B Discharge Stop Check	RO
	[ARC-MCR-108 G-3] Recognize '1B' CRD trip on low suction pressure	RO
	[ON-107 Att#5] Begin 20 minute clock when 2nd accumulator Trouble alarm received	SRO
	[ARC-MCR-108 F-1] Acknowledge abnormally low CRD HCU accumulator pressures	RO

EVENT - 3 LOSS OF CRD PUMPS (Abnormal)

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure Trigger #_4_ automatically actuated on the start of the 1B CRD Pump
To initiate clogged CRD suction filter and HCU accumulator trouble alarms.

At time _5 min_ for the first HCU alarm (Then_1 minute_ for each subsequent alarm) after FSSV or EO action requested HCU Accumulator Trouble Alarms,
reports: _Accumulator pressure for HCU 10-11 is **900** psig and no water drained
Accumulator pressure for HCU 34-35 is **905** psig No Trend and no water drained
Accumulator pressure for HCU 42-23 is **945** psig No Trend and no water drained

At time _5 min___ after FSSV or EO action requested to Bypass CRD Pump Suction Filter
report: _The 46-1F045 valve handle spins free and the valve stem is not moving.

If Maintenance support requested to support the CRD Pump Suction Filter Bypass
report: The valve stem is separated inside the valve body. It can't be fixed without blocking the suction and going internal on the valve.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 3 LOSS OF CRD PUMPS (Abnormal)	
	Contact WWM for Maintenance assistance with CRD Pumps	PRO
	[Tech Spec 3.1.3.5 ON-107 Att #5 step 1.0] **IF** one CRD scram accumulator is inoperable, **THEN PERFORM** the following within 8 hours: • **RESTORE** the inoperable accumulator to operable **OR DECLARE** associated control rod inoperable. • **IF** restoration is **not** completed, **THEN TAKE** action to be in at least HOT SHUTDOWN within the next 12 hours. • **IF** more than CRD inoperable accumulator restart a CRD Pump within 20 minutes or place the reactor mode switch in Shutdown	SRO
	[ON-107 Att. 2 step 2] Direct EO to open Suction Filter Bypass Valve 46-1F045	RO
	Contact Maintenance for assistance in opening valve	PRO/RO
	Investigate CRD Hydraulic High Temperature	PRO
	Recognize CRD will not be restored in 20 minutes and Direct a GP-4 Shutdown	SRO
	SM notifies SOS, SDM and initiates SER	SRO

EVENT - 4 ATWS (Major)
EVENT - 5 '1M' SRV FAILS OPEN
EVENT - 6 RCIC FAILS TO AUTO START

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure Trigger #_5_ automatically actuated as Reactor Mode Switch is taken to SHUTDOWN To initiate '1M' SRV opening and Main Turbine trip (after time delays).

At time _2 min_ after FSSV or EO action requested for T-213
report: Ask for a list of control rods to be manually scrammed.

At time _6 min___ after FSSV or EO action requested for T-214
report: T-214 is complete but no change in status.

At time _11 min___ after FSSV or EO action requested for T-221, perform the following:
Manually Activate Trigger _# 8_ and when complete:
report (via phone): T-221 is complete.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 4 ATWS (Major) **EVENT - 5 '1M' SRV FAILS OPEN** **EVENT - 6 RCIC FAILS TO AUTO START**	
	EVALUATORS NOTE: When the crew attempts to shutdown the Rx, the scram air header will fail to depressurize resulting in a high power ATWS with a failure of the SLC System. The crew will enter T-101, RPV Control, for Rx pressure control and T-117, Level/Power Control, to take actions mitigating a failure to scram. After the mode switch is in shutdown the '1M' SRV fails open resulting in a gradual heatup of the Suppression Pool, and RCIC will fail to inject in automatic after receipt of an automatic initiation signal.	
	[GP-4 3.1] Transfer House Loads	PRO
	[GP-4 3.2] Reduce Recirc Flow to Minimum	RO
	[GP-4 3.3] Initiate manual scram when Core Flow < 60 Mlbm/hr	RO
	[T-101 RC-4] Place the reactor mode switch in SHUTDOWN (w/in 20 minutes of 2nd accumulator alarm)	RO
	[T-101 RC-6] Insert IRMs and SRMs	RO
	Recognize RPS fails to de-pressurize the Scram Air Header	RO
	Enter and execute T-101 on Rx power > 4% w/scram condition	SRO
	[T-101 RC-5] Initiate RRCS and recognize ARI fails to de-pressurize the Scram Air Header	RO
	[T-101 RC/Q-10] Trip both Recirc pumps at least 10 seconds apart	RO
	[T-101 RC/Q-12] Direct performance of the following • T-213, Individual rod scram • T-214, Manual ARI • T-216, Air header **(Critical Task)**	SRO
	Recognize manual control of feedwater is required to bypass Post Scram Level Control	RO

EVENT - 4 ATWS (Major)
EVENT - 5 '1M' SRV FAILS OPEN
EVENT - 6 RCIC FAILS TO AUTO START

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _6 min__ after FSSV or EO action requested for T-251, perform the following:
Contact: Main Control Room (MCR) and have Operators verify that HV-055-1F006 indicates closed in the MCR.
Manually Activate Trigger _**# 7**_ for **RTR309** to **OPEN** and
report: __ T-251 is complete in the field.

At time _7 min **OR** (Immediately if pre-staged for at least 7 minutes)_ after FSSV or EO action requested for T-270, perform the following:
Toggle Remote Functions **RTR220 through RTR227** to "**TEST**"
OR load the 7-minute T-270 file from the Ops Training Scenarios\Remotes folder, and
report (via phone): _Section 4.7 of T-270 is complete.

At time _5 min__ after FSSV or EO action requested for OT-114, perform the following:
Activate Trigger # 6 for RAD215 to Removed and
report: _Fuses for "1M" SRV have been pulled per OT-114.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 4 ATWS (Major) **EVENT - 5 '1M' SRV FAILS OPEN** **EVENT - 6 RCIC FAILS TO AUTO START**	
	Recognize SLC start on manual RRCS initiation after time delay and running with low discharge pressure	RO
	Secure SLC pumps	RO
	[T-101 RC/Q-20] Direct performance of T-209, Injection Form SBLC Storage Tank	SRO
	[T-101 RC/L-4] Exit RC/L and enter and execute T-117, Power / Level Control	SRO
	[T-101 RC/Q-19, T-117 LQ-5] Manually inhibit automatic ADS **(Critical Task)**	PRO
	[T-117 LQ-6] Direct performance of T-221 to personnel outside Main Control Room (MCR)	SRO
	Recognize '1M' SRV open	PRO
	Enter and execute OT-114, Inadvertent Opening of a Relief Valve	SRO
	Establish Suppression Pool Temperature as a Critical Parameter	SRO
	Direct performance of OT-114, Att. 1	PRO
	Trend time to 95 °F and 110 °F for Suppression Pool temp	SRO/PRO
	[OT-114 Immediate Operator Action] Place 2 Loops of Suppression Pool Cooling in Service within 6 minutes of inadvertent actuation (OP-LG-102-106)	PRO
	[OT-114 Att#1] Direct floor personnel to pull fuses for '1M' SRV per OT-114, Att. 2 **(Critical Task)**	PRO
	Place RHRSW in service as directed by S12.1.A, RHR Service Water System Startup. (A/B Loop RHRSW) • *Open HV-51-1F014A and HV-51-1F014B* • *Throttle Open HV-51-1F068A and HV-51-1F068B for 18 to 20 seconds* • *Start 0A or 0C RHRSW Pump* • *Throttle HV-51-1F068A to remain below 11,000 GPM and pump discharge pressure 75 – 85 psig* • *Start 0B or 0D RHRSW Pump* • *Throttle HV-51-1F068B to remain below 11,000 GPM and pump discharge pressure 75 – 85 psig*	PRO

EVENT - 4 ATWS (Major)
EVENT - 5 '1M' SRV FAILS OPEN
EVENT - 6 RCIC FAILS TO AUTO START

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _6 min__ after FSSV or EO action requested for T-251, perform the following:
Contact: Main Control Room (MCR) and have Operators verify that HV-055-1F006 indicates closed in the MCR.
Manually Activate **Trigger # 7** for **RTR309** to **OPEN** and
report: __T-251 is complete in the field.

At time _7 min **OR** (Immediately if pre-staged for at least 7 minutes)_ after FSSV or EO action requested for T-270, perform the following:
Toggle Remote Functions **RTR220 through RTR227** to **"TEST"**
OR load the 7-minute T-270 file from the Ops Training Scenarios\Remotes folder, and
report (via phone): _Section 4.7 of T-270 is complete.

At time _5 min__ after FSSV or EO action requested for OT-114, perform the following:
Activate **Trigger # 6 for RAD215 to Removed** and
report: _Fuses for "1M" SRV have been pulled per OT-114.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 4 ATWS (Major) **EVENT - 5 '1M' SRV FAILS OPEN** **EVENT - 6 RCIC FAILS TO AUTO START**	
	EVALUATORS NOTE: The following steps are directed by T-270, terminate and Prevent Injection into the RPV.	
	[T-117 LQ-7] **Direct** performance of Section 4.7 of T-270 to personnel outside Main Control Room (MCR)	PRO
	[T-270 step 4.2.3] HPCI Simultaneously DEPRESS AND HOLD HS-056-161, "Pushbutton for HPCI Turbine Trip (E41A-S19) (TURBINE TRIP) AND CLOSE HV-55-1F003, "HPCI Main Steam Supply Outbd PCIV	PRO
	[T-270 step 4.6.1] FEEDWATER ENSURE HV-06-138A, 1A RFP BPV (BYPASS) closed at panel 10C651	RO
	[T-270 step 4.6.2] ENSURE LIC-06-138, A Feedwater Startup Level Control, (LV STARTUP BYPASS) in manual and set to 0% at panel 10C603	RO
	[T-270 step 4.6.3] ENSURE LIC-06-120, Reactor Feedpumps Bypass Cont Valve, (PUMP BYPASS) in manual and set to 0% at panel 10C603	RO
	[T-270 step 4.6.4] ENSURE FIC-M1-1R601A, B, C "A,B,C RFPT Speed Controller in manual for all three RFPTs at panel 10C603	RO
	[T-270 step 4.6.5] DEPRESS EMERGENCY STOP pushbutton for all three RFPTs at panel 10C603	RO
	[T-270 step 4.6.6] WHEN EMERGENCY STOP light goes out, THEN depress AUTO START pushbutton for all three RFPTs at panel 10C603	RO
	[T-270 step 4.6.7] CLOSE HV-06-108A, 1A RFP Discharge	RO
	[T-270 step 4.6.8] CLOSE HV-06-108B, 1B RFP Discharge	RO
	[T-270 step 4.6.9] CLOSE HV-06-108C, 1C RFP Discharge	RO
	[T-117 LQ-7] Perform T-270 to lower level to below –50 inches **(Critical Task)**	RO
	Recognize SRV closed after field report that fuses are pulled	RO/PRO

EVENT - 4	**ATWS (Major)**
EVENT - 5	**'1M' SRV FAILS OPEN**
EVENT - 6	**RCIC FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 4 ATWS (Major) **EVENT - 5 '1M' SRV FAILS OPEN** **EVENT - 6 RCIC FAILS TO AUTO START**	
	Stabilize and maintain RPV Level between – 60" and – 100"	RO
	[T-117 LQ-17] Direct performance of T-251	SRO
	Verify isolations for +12.5 inches RPV level and – 38" RPV level	PRO
	Identify that RCIC failed to Auto Start at -38"	PRO/RO
	Manually start RCIC **(Malfunction)**	PRO
	Recognize SRV closed after fuses are pulled	Crew
	Reference appropriate ARC: • 105 J-5, TBWD PREALARM/SYS TROUBLE	PRO
	Recognize Main Turbine trip	RO/PRO
	SM calls EP Communicator to MCR	SRO
	Shift Manager declares a Site Area Emergency **(MS2)** due to Threshold(s): **1.** Automatic Scram was **not** successful as indicated by Reactor power **> 4%** **AND** **2.** Manual scram / ARI actions were **not** successful from the Reactor Console as indicated by Reactor Power **> 4%** **Within 15 minutes** Time Condition Available: _____ Time Classification Made: _____	
	The SM Determines that there is not a release in progress.	
	SM accurately completes State/Local Event Notification Form EP-MA-114-100-F-01	
	The SM provides the Notification form to the EP Communicator **within 9 minutes** and makes required notifications of declaration being made per EP-MA-114-100 Time Classification Made _____ Time Notification Form provided to EP Communicator _____ Time Notification Made _____	
	SM completes Shift Emergency Director checklist EP-AA-112-100 F-01	
	SM announces SAE on PA within 15 minutes of declaration	

EVENT - 7 MAIN TURBINE TRIPS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _10 min___ after FSSV or EO action requested for SE-10 Floor Actions
Load **All SE-10 Floor Actions with Time Delays Scenario** and
report: _The status of individual resets as requested **OR** when all resets are timed out
report: _All SE-10 Floor Actions are complete.

After_ second lowering per T-270 is complete and **when** directed by Lead Evaluator after FSSV or EO action requested for T-216 perform the following:
report: _We are preparing to vent the scram air header per T-216, rod motion should occur
Manually Activate **Trigger** _**#9**_ for **RTR114** to **OPEN** and
report: _T-216 is complete.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 7 MAIN TURBINE TRIPS	
	EVALUATORS NOTE: After reactor level is intentionally lowered and pressure has been stabilized, the Main Turbine Thrust Bearing Wear Detector will cause a Turbine trip. The crew will continue as directed by T-270 and operate the Feedwater system to maintain RPV level in the appropriate band. Suppression Pool temperature will exceed 110°F requiring the crew to lower level below –161 inches.	
	SM announces SAR to crew with escalation criteria within 15 minutes	
	SM notifies NRC within 1 hour	
	Stabilize Rx pressure with SRVs, 990-1096 psig **(Malfunction)**	PRO
	If RPV pressure rises above 1096 psig, re-enter T-101	SRO
	Establish Critical Parameter reporting for Suppression Pool Temperature	SRO
	When Suppression Pool temperature exceeds 95 °F, enter T-102	SRO
	When Suppression Pool temperature reaches 110 °F, perform T-270 until reactor power is < 4%, **RPV level is -161 inches**, **or** all SRVs are closed **(Critical Task)**	SRO/PRO
	EVALUATORS NOTE: The following steps are from SE-10, LOCA and are performed at the Safeguards Panel (Diesel Panel).	
	Perform SE-10, LOCA, actions in MCR	RO
	[SE-10 3.1] **PLACE** the following to "CLOSE" • 52-20224/CS, "D*24 Safeguard L.C. D*24-G-D MCC Bkr" (SAFEGUARDS B), on *BC661 • 52-20124/CS, "D*14 Safeguard L.C. D*14-G-D MCC Bkr" (SAFEGUARDS A), on *AC661.	RO
	[SE-10 3.2] **PLACE** to "RESET": • 43-22322/CS, "Div. III Non SFGD Instr. Panel" (INST AC 201 CONTROL PNL), on *CC661 • 43-22422/CS, "Div. IV Non SFGD Instr. Panel" (INST AC 202 CONTROL PNL), on *DC661.	RO
	Direct performance of SE-10 Floor Actions to personnel outside MCR	PRO/RO
	Verify isolations for -129 inches RPV level	PRO
	Secure SLC Pumps after LOCA restart	RO
	RPV level restored and stabilized between – 186 and – 161 inches RPV level	RO

EVENT - 7 MAIN TURBINE TRIPS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _10 min___ after FSSV or EO action requested for SE-10 Floor Actions
Load **All SE-10 Floor Actions with Time Delays Scenario** and
report: _The status of individual resets as requested **OR** when all resets are timed out
report: _All SE-10 Floor Actions are complete.

After_ second lowering per T-270 is complete and **when** directed by Lead Evaluator after FSSV or EO action requested for T-216 perform the following:
report: _We are preparing to vent the scram air header per T-216, rod motion should occur
Manually Activate **Trigger #9** for **RTR114** to **OPEN** and
report: T-216 is complete.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 7 MAIN TURBINE TRIPS	
	SP temperature tracked on HCTL Curve	SRO
	Recognize all control rods in due to T-216 **(Critical Task)**	RO
	Exit T-117, Level/Power Control	SRO
	Stabilize level and reactor pressure after rod insertion to maintain the cooldown rate	RO
	Establish Reactor Level Band consistent with conditions to allow Cooldown Rate to be maintained	SRO/RO
	Major TRIP decisions confirmed by Shift Manager and WCS	
EVALUATORS NOTE: This scenario may be terminated when Control Rods are inserted and RPV level has been stabilized in band.		

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	Rough Log(s) Maintained by the crew with the following items noted: • Loss Of Iso-Phase Bus • RPV level inst failure • CRD Pump Trip • 2nd Accumulator Trouble Alarm after trip of second CRD Pump • ATWS / Attempted SCRAM • T-101 entry • T-117 entry • Isolations verified for 12.5 inches, -38 inches and -129 inches • 'M' SRV Failure • RCIC Failure to Auto Start • <-161" • All rods in • Tech Specs 3.6.3.a, 3.3.2.b, 3.1.3.5	Crew
	Critique any instances where fundamentals were not properly adhered to, and whether in-the-moment coaching was provided by Supervision. Provide examples of effective Leadership and areas for improvement.	SM

Attachment 1
Simulator Operator Response Times

Procedure	Performance	Response Time (Minutes)
T-209	Injection from the Standby Liquid Control Storage Tank with the RCIC System	45
T-212	Bypassing SQUIB Valves for SLC Injection	19
T-215	De-energization of Scram Solenoids	7
T-216	Manual Isolation and Vent of Scram Air Header	7
T-217	RPS/ARI Reset and Backup Method of Draining Scram Discharge Volume	17
T-219	Maximizing CRD Cooling Water Header Flow during ATWS Conditions	23
T-221	MSIV Isolation Bypass Procedure	11
T-225	Startup and Shutdown of Suppression Pool and Drywell Spray Operations	8
T-240	Maximizing CRD flow after Shutdown During Emergency Conditions	8
T-245	RPV Injection from RHR S/D Cooling	12
T-248	Injection from SLC Test Tank to RPV	15
T-251	Establish a HPCI Injection flow Path VIA Feedwater Only	6
T-270	Terminate and Prevent Injection into the RPV	7
T-290	Instrumentation Available for T-103 SAMP-2	5
S46.7.A (4.2.1)	Control Rod Drive Hydraulic System Operation Following Reactor Scram (Securing CRD flow to the Reactor - Close 46-1F060, CRD Water Pressure Control Station Inlet Valve)	7
SE-10-1 Resets and Floor action	Breaker Reset Following LOCA (Also reset ARMs, RHRSW Rad Monitor and RDCS)	10

Attachment 2
Communications Log

CREW: _____

DATE: _____ LSEG: _____

START TIME: _____ STOP TIME: _____

SM: _____ RO: _____ WCS: _____

CRS: _____ PRO: _____ FSSV: _____

TIME	PERSON CALLING	PERSON BEING CALLED	COMMUNICATION / REQUEST	CALL BACK TIME

XII. CREW PREBRIEF INSTRUCTIONS

Unit 1 is in OPCON 1 at 100% power
Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- None

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- None

Planned Evolutions:

- Continue operation at 100% per GP-5

Documents Provided:

- None

Exelon Generation

LIMERICK GENERATING STATION
SIMULATOR EVALUATION GUIDE

CODE NO:	SEG-4055E	REV NO:	001
AUTHOR:	J.N. KOELLE	APPROXIMATE RUN TIME:	60 minutes
TYPE:	SIMULATOR EVALUATION GUIDE	EFFECTIVE DATE:	1/6/16
PROGRAM:	LICENSED OPERATOR TRAINING		
COURSE:	LICENSED OPERATOR (REQUALIFICATION/INITIAL) TRAINING		
TITLE:	Simulator Evaluation Guide for Individual and Crew Performance		

Prepared By: _____ Date: 11/12/15
Training Instructor - Signature

Reviewed By NA FOR NRC INITIAL Date: N/A
Program (ILT or LOR) Lead - Signature

Reviewed By: A.W. HIGHTOWER, EPM Date: 11/12/15
EP (as appropriate) - Signature

Reviewed By: NA Date: NA
RE (as appropriate) - Signature

Approval: _____ Date: 11-19-15
OPS Manager - Signature

Approved For Use: _____ Date: 11-19-15
Training Manager - Signature

Facility: Limerick 1 & 2 Scenario No.: SEG-4055E Rev 1 Op-Test No.: 1 .

Examiners: _____ Operators: _____

Initial Conditions:
Unit 1 is at 100 % power. Unit 2 is at 100% power.

Turnover:
RCIC is running per S49.1.D for oil sampling. S49.1.D is complete up to and including step 4.3.7. RCIC will be shutdown when sampling is complete.

Event No.	Malfunction Number	Event Type*	Event Description
1	E51-S37 E51-S37-PB	I-PRO C-RO TS-SRO	Inadvertent RCIC Startup and injection **(Abnormal)**
2	MED015E MDG420C	C-PRO TS-SRO	D13 Dead Bus Transfer to 101 / D13 D/G fails to start **(Malfunction)**
3	VIC108B MCN604B	R-RO C-PRO	'1B' Condensate Pump Vibration requiring shutdown **(Abnormal)**
4	MRR441	C-ALL	Leak in the Drywell **(Abnormal)**
5	MHP447A E41-S20 MRR440A MED262A MSL196A MSL196B MSL196C MRC466	M-ALL	LOCA with Loss of High Pressure Injection Sources
6	MCR547	C-RO	Loss of CRD system due to clogged suction filter **(Abnormal)**
7	MCS183A	C-PRO	'1A' Core Spray Pump fails to auto start **(Malfunction)**

* **(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor**

I. **PURPOSE:** Systematically evaluate individual and team performance to identify areas for improvement. Critical Tasks and Assessment Items from this evaluation guide are to be used to assess crew and individual performance and as input into a 4.0 Crew Critique Process.

II. SIMULATOR EVALUATION GUIDE OBJECTIVES:

A. The following evaluation objectives apply to the Crew (C), Shift Manager (SM), Control Room Supervisor (S), Unit Reactor Operator / Plant Reactor Operator (R), or Incident Assessor / Shift Technical Advisor (A) as indicated in the following categories.

1. The general condition for each of the evaluation objectives will be "Given the plant conditions and sequence of events in the Simulator Evaluation Guide (SEG)".
2. The general acceptable evaluation objective criteria for each of the evaluation objectives will be "To perform effectively as an individual and contribute to successful crew performance in accordance with appropriate reference plant procedures and Operations Expectations, Fundamentals and Strategies".
3. Specific UNSAT evaluation objective criteria will be consistent with TQ-AA-155, Conduct of Simulator Training and Evaluation with applicable forms and job aids.
4. During performance of this Simulator Evaluation Guide, the individuals and crew should satisfactorily demonstrate the following overall procedure and plant control objectives:

- Direct and perform actions per OT-104, Unexpected/Unexplained Positive or Negative Reactivity Addition
- Direct and perform actions per OT-101, High Drywell Pressure
- Direct and perform actions per ON-107, Control Rod Drive Problems
- Direct and perform actions per E-D13 U1, Loss of D13 Safeguard Switchgear
- Direct and perform actions per GP-5, App. 2, Unplanned Reduction in Reactor Power
- Direct and perform actions per T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation
- Direct and perform actions per T-101, RPV Control
- Direct and perform actions per T-102, Primary Containment Control
- Direct and perform actions per T-111, Level Restoration/Steam Cooling
- Direct and perform actions per T-112, Emergency Blowdown
- Direct and perform transition to Implement the Emergency Plan with accurate and timely Event Declarations and Notifications

III. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	LORT Approval	Action Tracking	Revision Date

IV. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (e.g for conversion of LSTS to LLORSEG format).

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
Rev000	This is a reformat to the new SEG Evaluation template. This SEG replaces LSES-5009, Rev 3	9/2/14
Rev001	Revised to the new SEG Evaluation template.	7/17/15

V. SCENARIO EVENT AND EVALUATION SUMMARY:

Event One: When the crew accepts responsibility, RCIC, running for oil sampling, will get an inadvertent initiation signal and inject into the vessel resulting in a rise in reactor power.

Evaluation: Evaluate the crew's ability to recognize the rise in reactor power, execute OT-104 and shutdown RCIC per S49.2.A.

Event Two: After RCIC has been secured, 101-D13 will trip resulting in auto closure of the 201-D13 breaker after a momentary power loss to D13. Complicating the event, the D13 D/G will fail to auto start.

Evaluation: Evaluate the crew's ability to recognize the dead bus transfer of D13 Bus to the 201 source and respond to the temporary power loss to D13. In addition, Tech Specs 3.8.1 should be referenced to determine actions for the INOP offsite source and D13 D/G.

Event Three: After the crew has performed the actions per E-D13, the '1B' Condensate Pump will experience rising vibration levels and will eventually trip.

Evaluation: To determine the crew's ability to reduce reactor power in accordance with GP-5, App. 2 to lower Feedwater flow to less than 11.3 Mlbm/hr in preparation to remove the '1B' Condensate Pump from service.

Event Four: When the Condensate Pump is shutdown, a coolant leak will occur in the Drywell.

Evaluation: To determine the crew's ability to take appropriate actions per OT-101, including performing a rapid plant shutdown when actions to isolate the leak are unsuccessful.

Event Five: During the plant shutdown, the Drywell leak will increase and a loss of the 11 Unit Aux Bus will occur resulting in a loss of Feedwater. Complicating the event, HPCI will fail to start and the SLC squib valves will fail to fire.

Evaluation: Evaluate the crew's ability to respond to the LOCA and the loss of high pressure feed and execute T-102 and T-111.

SCENARIO EVENT AND EVALUATION SUMMARY cont'd

Event Six: Following the loss of high pressure injection systems, the '1A' CRD pump will trip due to a clogged suction filter.

Evaluation: Evaluate the crew's ability to respond to loss of CRD. The crew should enter ON-107 and restore CRD to service directing floor personnel to open the suction filter bypass valve.

Event Seven: When RPV level drops below -129", the '1A' Core Spray Pump will fail to auto start.

Evaluation: Evaluate the crew's ability to recognize the failed Core Spray Pump and manually start the pump to maximize injection with all available sources.

Termination Point: The scenario may be terminated when the Emergency Blowdown is complete, RPV level is restored to normal band, Drywell Spray is in service, an Alert has been declared (FA1) and the Emergency Plan implemented.

VI. REFERENCES

A. Training Procedures
   1. TQ-AA-150, Operator Training Programs
   2. TQ-AA-155, Conduct of Simulator Training and Evaluation
   3. TQ-AA-151, ILT Certification and NRC Examination Development and Administration

B. Annunciator Response Cards (ARC)
   1. 121 B-1, D13 BUS UNDERVOLTAGE
   2. 121 A-2, 101-D13 BUS BKR TRIP
   3. 121 D-2, D13 STANDBY AC PWR SYSTEM OUT OF SERVICE
   4. 121 G-1, 1 UNIT DIV 3 SFGD BATTERY CHARGER TROUBLE
   5. 111/112 A-3, 1A/1B RECIRC PUMP SEAL CLG WATER LO FLOW
   6. 112 H-2, RWCU PUMP SUCTION LO FLOW
   7. 112 G-2, 1A RWCU RECIRC PUMP TRIP
   8. 107 I-2, VIBRATION ALARM ALERT
   9. 107 I-3, VIBRATION ALARM DANGER
   10. 115 B-5, DRYWELL COOLER DRAIN FLOW HIGH
   11. 107 F-2, DRYWELL HI PRESS
   12. 003 E-1, NORTH STACK HI-HI RAD
   13. 003 F-1, UNITS 1&2 SOUTH STACK HI-HI RAD
   14. 003 G-1, Reactor Enclosure Common Area Hi Rad
   15. 003 G-2, Turbine Enclosure Common Area Hi Rad
   16. 003 B-4, Unit 1 &2 Containment Leak Detector Hi/Low Flow
   17. 109 F-3 1 Suppression Atmospheric Analyzer Trouble/INOP

C. System Procedures (S)
   1. S49.1.D, RCIC System Full flow Functional Test And Turbine Oil Priming

D. General Procedures (GP)

E. Off Normal Procedures (ON)
   1. ON-107, Control Rod Drive System Problems

F. Operating Transient Procedures (OT)
   1. OT-104, Unexpected/Unexplained Positive or Negative Reactivity Addition
   2. OT-101, High Drywell Pressure

G. Event Procedures (E)

H. Special Event Procedures (SE)
   1. SE-10, LOCA

I. Surveillance Test and Routine Test Procedures (ST and RT)

J. Technical Specifications and TRM (TS)
   1. 3.8.1.1
   2. 3.7.3
   3. TRM 4.4.4

K. Transient Response Implementation Procedures (T-100 series)/SAMPs
   1. T-101, RPV Control
   2. T-102, Primary Containment Control
   3. T-111, Level Restoration/Steam Cooling
   4. T-112, Emergency Blowdown

L. TRIP 200 Series Procedures
   1. T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation
   2. T-240, Maximizing CRD Flow After Shutdown During Emergency Conditions

M. EP-AA-1008, Limerick, Radiological Emergency Plan Annex for Limerick Generating Station

N. Administrative Procedures
   1. OP-AA Procedures
      a. OP-AA-1, Conduct of Operations
      b. OP-AA-20, Conduct of Operations Process Description
      c. OP-AA-101-111-1003, Operations Department Standards and Expectations
      d. OP-AA-101-113, Operations Fundamentals
      e. OP-AA-101-113-1006, 4.0 Crew Critique Guidelines
      f. OP-AA-106-101-1006, Operational Decision Making Process
   2. OP-LG Procedures
      a. OP-LG-101-111-1000, Licensed Operator Duties
      b. OP-LG-102-106, Operator Response Time Program at Limerick
      c. OP-LG-103-102-1000, Human Performance Continuing Good Practices
      d. OP-AA-103-102-1001, Strategies For Successful Transient Mitigation
      e. OP-LG-103-102-1002, Strategies for Successful Transient Mitigation
      f. OP-LG-108-101-1001, Simple Quick Acts / Transient Acts

O. Current Shift Night Orders Forced Outage Plan

P. INPO Significant Operating Experience Reports (SOER), Significant Event Reports (SER) and INPO Event Reports (IER)
   1. IER-L1 11-3, Weaknesses in Operator Fundamentals
   2. SER 3-05, Weakness in Operator Fundamentals
   3. SOER 10-02, Engaged Thinking Organizations
   4. INPO 15-004, Operator Fundamentals

VII. PREBRIEF INSTRUCTIONS

- Unit 1 is in OPCON 1 at 100% power
- Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- RCIC is running per S49.1.D, RCIC System Full flow Functional Test And Turbine Oil Priming for oil sampling. RCIC will be shutdown when sampling is complete.
- ST-6-060-390-1, Suppression Pool Temperature checks required by S49.1.D are in progress

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- None

Planned Evolutions:

- Maintain power at 100% per GP-5

Documents Provided:

- ST-6-060-390-1 Suppression Pool Temperature Monitoring complete up to step 4.3.1.1 first temperature logged on attachment 1
- S49.1.D, RCIC System Full flow Functional Test And Turbine Oil Priming completed up to and including step 4.3.7
- MCR will be notified to shutdown RCIC when oil sampling is complete.

VIII. DIRECTIONS FOR EVALUATION PREPARATION

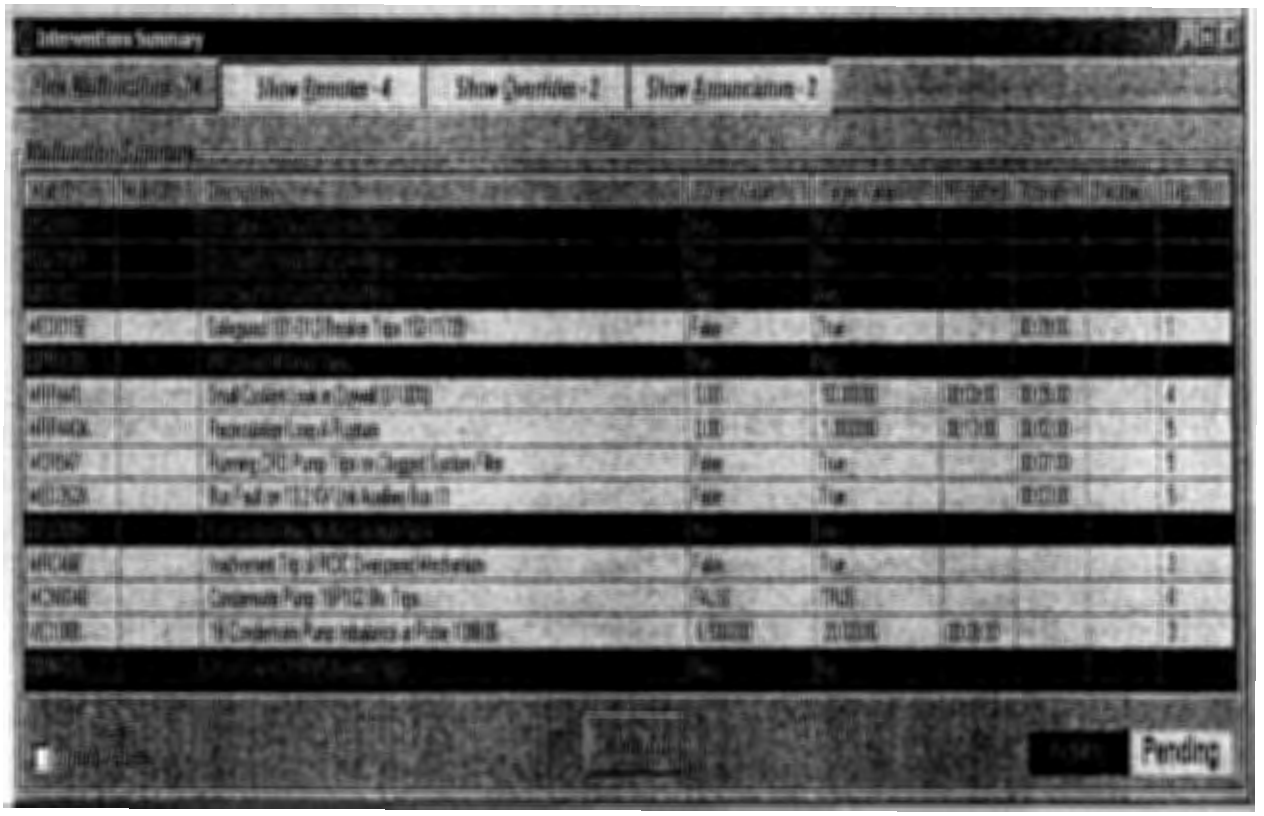
A. INITIAL PREPARATION

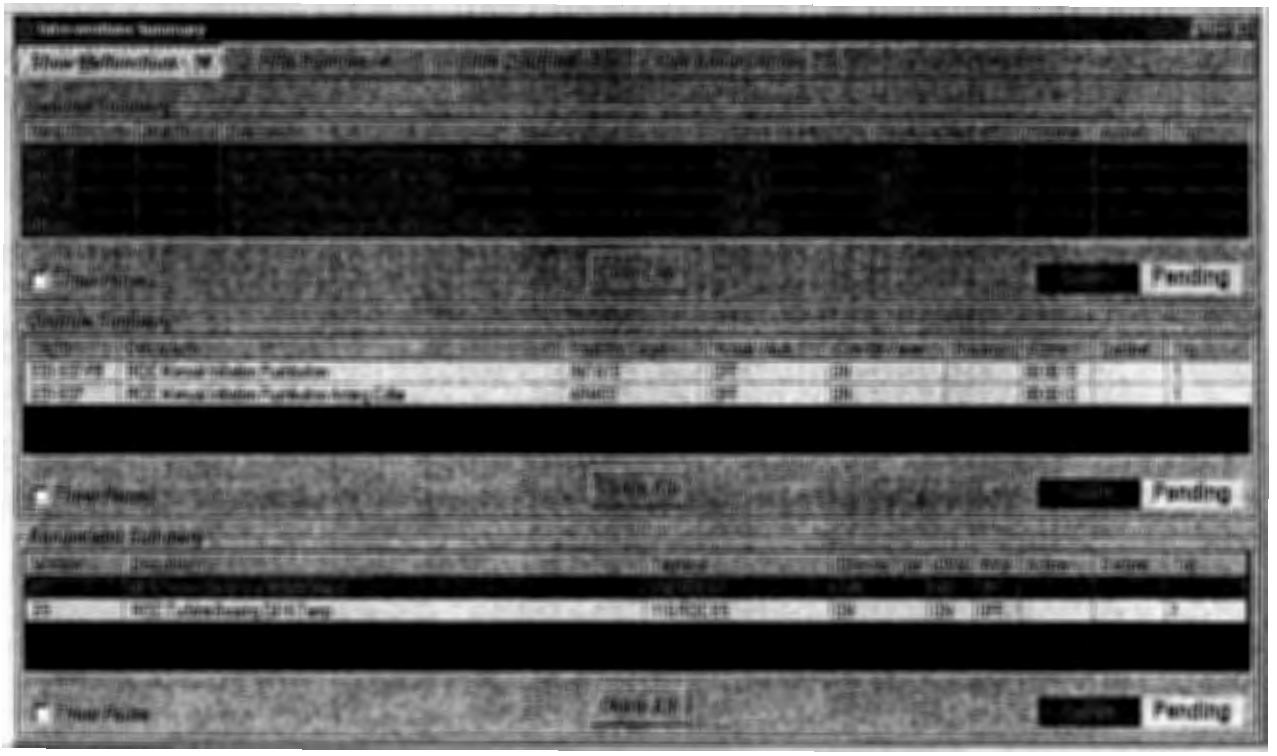
✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete TQ-AA-155, Operator Training Programs Attachment 02, Evaluated Scenario Administration Checklist.
	Complete TQ-LG-201-0113, Limerick Training Department Simulator Examination Security Actions Checklist
	Complete Limerick Simulator Pre-Evaluation Checklist

B. SIMULATOR SETUP

✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete Limerick Simulator Pre-Evaluation Checklist
	Reset Simulator to the Pre-loaded Cycle **IC** developed for Scenario **OR** Reset the simulator to **IC-17** **AND** Load scenario file **SEG4055E Rev001scn** • Verify that all Malfunctions, Remotes, Overrides, Annunciators and Triggers are properly loaded **OR** Manually enter the Malfunctions, Remotes, Overrides, Annunciators and Triggers per the Scenario Generator Screen Shots:
	Simulator Operator (Driver) perform the following: • Momentarily place simulator in RUN • Acknowledge and clear all spurious alarms • Place the simulator back into FREEZE • Place appropriate tags and equipment in required condition / status. • Ensure '1A' RECW Pump in service • Start RCIC IAW S49.1.D • Provide the following; • ST-6-060-390-1 Suppression Pool Temperature Monitoring • S49.1.D complete up to and including step 4.3.7

C. MALFUNCTION/REMOTE/OVERRIDE/ANNUNCIATORS FUNCTION TIME TABLE

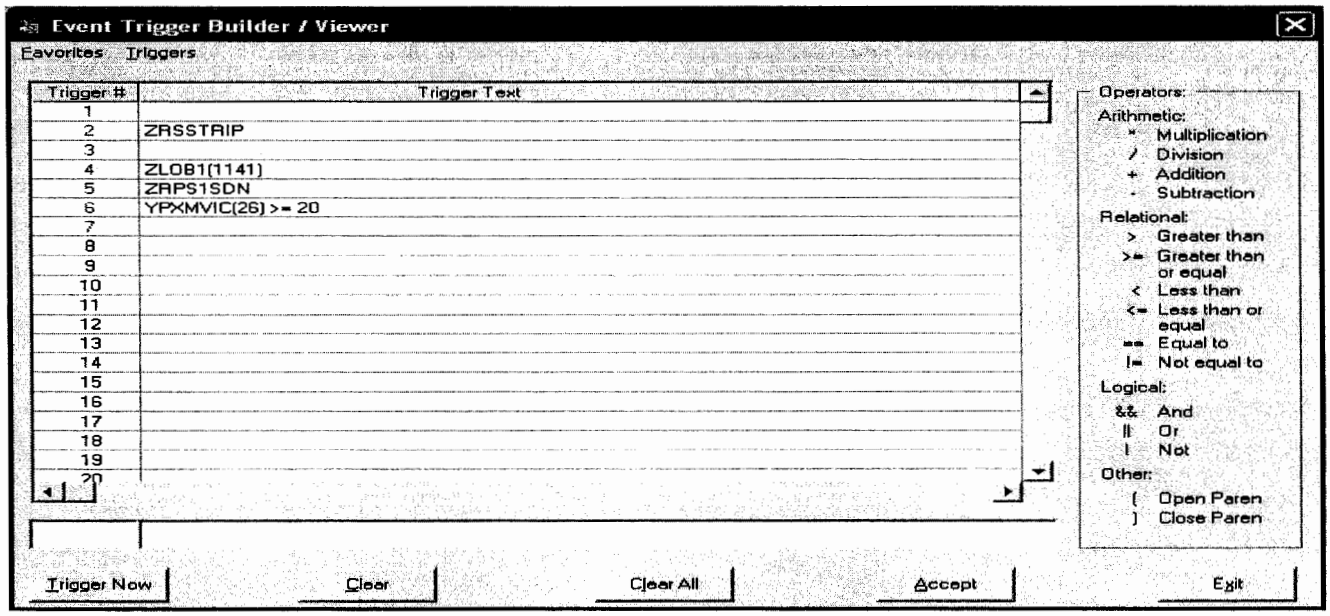




D. EVENT TRIGGERS ASSIGNMENT

1. Timers should be used on event triggers where possible for time validation
2. Timing of event triggers may be altered by the Lead Evaluator (or designee)
3. Verify triggers are actuated automatically as designed or manually initiate the trigger when the initiating action has occurred.
4. Inform Lead Evaluator (or designee) of expected plant response prior to actuation of each trigger.
5. Trigger #1 is manually initiated at Lead Evaluator (or designee) direction after the crew assumes responsibility for operation.

	TRIGGER / TIME	MALFUNCTION / EVENT	DESCRIPTION
	1	MANUAL	Initiates RCIC inadvertent injection and 201-D14 trip
	2	Auto / ZRSSTRIP	RCIC Turbine Trip pushbutton RCIC overspeed trip
	3	Manual	'1B' Condensate Pump vibration
	4	Auto / ZL0B1(1141)	'1B' Condensate Pump green light lit Coolant Leakage in Drywell
	5	Auto / ZRPS1SDN	MODE SW TO SHUTDOWN LOCA, trip of 11 Unit Aux Bus and CRD clogged suction filter
	6	Auto / YPXMVIC{26}>=20	'1B' Condensate Pump vibration >20 mils pump trip
	7	Manual	RCIC HI OIL TEMP annunciator (if needed)



E. EQUIPMENT REPORTS AND LEAD EVALUATOR (OR DESIGNEE) OPERATIONS

1. Scripted Activity Reports should be followed with adherence to Operations Communication standards of performance.
2. The T-200 procedure reference book should be used for familiarity of reports to aid in operator prompting and expected communications.
3. The Lead Evaluator (or designee) should be informed if any event is not reported as scripted due to lack of Operator request.
4. The Standard Equipment Operator Response Times are per Attachment 1

IX. QUANTITATIVE ATTRIBUTES

QUANTITATIVE ATTRIBUTES			
ATTRIBUTE	**MINIMUM NUMBER**	**ACTUAL NUMBER**	**DESCRIPTION (If Applicable)**
TOTAL MALFUNCTIONS	**5**	6	**See Assessment Items**
MALFUNCTIONS AFTER EOP	**1**	2	**See Assessment Items**
ABNORMAL EVENTS	**2**	2	OT-104, OT-101
MAJOR TRANSIENTS	**1**	1	LOCA with loss of high pressure feed
EOPs USED BEYOND PRIMARY SCRAM RESPONSE	**1**	2	T-102, T-111
EOP CONTINGENCY PROCEDURES USED	**1**	1	T-112
CREW CRITICAL TASKS	**2**	3	T-112.1 **or** T-102.2, T-112.2, T-102.1
TECHNICAL SPECIFICATIONS EXERCISED	**1**	3	3.8.1.1, 3.7.3 TRM 4.4.4
SCENARIO RUN TIME	**45 Minutes**	60 Minutes	

Enter the level of difficulty (LOD) of each scenario using a 1 – 5 (easy – difficult) rating scale (LOD > 1 and < 5 are acceptable) 3.0

X. CREW CRITICAL TASKS

A. Critical Tasks are based on the current Crew Critical Task List revision, NUREG 1021 Rev 10 Supplement 1 and TQ-AA-150 requirements.

1a. **T-112.1** **Perform emergency blowdown per T-112.**

K/A	295031	EA1.07	3.7/3.7
K/A	295031	EA2.04	4.6/4.8

Standard: When RPV level drops below TAF, open 5 SRV's.

SAT/UNSAT

OR

1b. **T-102.2** **Perform emergency blowdown per T-112.**

K/A	295024	EA1.08	3.9/3.9
K/A	295024	EA2.04	3.9/3.9

Standard: When Suppression Pool Pressure cannot be maintained below the Pressure Suppression Pressure (PC/P-3) curve and before Drywell pressure exceeds 55 psig, open 5 SRV's.

SAT/UNSAT

2. **T-111.3** **Maintain RPV level greater than the TAF.**

K/A	295031	EA1.01	4.4/4.5
K/A	295031	EA1.02	4.5/4.5
K/A	295031	EA1.05	4.3/4.3
K/A	295031	EA1.11	4.1/4.1
K/A	295031	EA1.12	3.9/4.1

Standard: Operate injection systems to maintain reactor level greater than the TAF <u>or</u> enter T-112, perform an emergency blowdown, and when pressure permits, inject with low pressure ECCS to restore RPV level above TAF.

SAT/UNSAT

3. **T-102.1** **Spray the Drywell per T-225.**

K/A	295024	EA1.11	4.2/4.2
K/A	295028	EA1.01	3.8/3.9
K/A	295028	EA1.04	3.9/4.0

Standard: When Drywell temperature and pressure are on the SAFE side of curve PC/P-2, spray the Drywell before exceeding 340°F or 55 psig.

SAT/UNSAT

XI. ASSESSMENT OF CREW PERFORMANCE DURING CONDUCT OF THE DYNAMIC SIMULATOR EVALUATIONS:

A. Conduct the Simulator Evaluation Session per TQ-AA-155, Conduct of Simulator Training and Evaluation, Attachment 02, Evaluated Scenario Administration Checklist

B. Assessment of Crew and Individual performance shall be consistent with OP-AA-20, Conduct of Operations Process Description

C. Where possible record the time and position responsible for performance of each task or assessment item

D. Items not performed as expected **SHALL** be discussed in the post performance crew critique

E. During the performance of the evaluation, the Simulator Evaluators shall **MAINTAIN** notes of observations and information consistent with the timeline

F. Assessment items with the ⏲ symbol indicate a time critical standard for performance

G. Assessment items with the ⚑ symbol indicate a Probabilistic Risk Assessment (PRA) association with the task

H. The Simulator Operator will respond with scripted or proceduralized responses when requested by the MCR operators with Procedure completion times requested per **Attachment 1**

I. The Simulator Operator will also maintain a timeline and record of all reports and requests issued by the MCR personnel with response provided by the simulator operator using **Attachment 2**

J. Shaded items do not require assessment for ILT Evaluations. The CRS may be requested to complete the Shift ED forms and determine the EAL classification at the completion of the scenario.

EVENT - 1 RCIC INADVERTENT INJECTION (Abnormal)

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Manually actuate **Trigger #_1_** to initiate RCIC initiation signal and trip of 101-D13 following time delay.

As directed by Lead Evaluator, if crew fails to recognize RCIC injection,
Manually actuate **Trigger #_7_** to bring in RCIC HI OIL TEMP alarm.

Ensure **Trigger #_2_** automatically actuates when RCIC TRIP pushbutton is depressed to initiate RCIC Overspeed Trip.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 1 RCIC INADVERTENT INJECTION (Abnormal)	
	EVALUATORS NOTE: With RCIC running, an inadvertent injection signal will occur resulting in RCIC injection into the vessel and a rise in reactor power. When RCIC Turbine Trip PB is depressed a RCIC overspeed trip occurs, closing the trip throttle valve.	
	RO reports rising reactor power and takes immediate action to lower power less than 100% with Recirc flow	RO
	Crew enters OT-104	SRO
	Recognize power rise due to RCIC injection	RO
	Notify SRO of RCIC injecting into the reactor vessel	PRO
	[OT-104 IOA] **REDUCE** Rx power per GP-5 appendix 2 **AND** RMSI to below pre-transient level.	RO
	[OT-104, 3.3] **PERFORM** Attachment #4 to determine if operating in authorized region of Power/Flow Map	SRO
	Determine RCIC initiation is spurious and secure injection **(Malfunction)**	SRO
	[OT-104, Att. 2] Trip RCIC IAW S49.2.A	PRO
	[S49.2.A 4.3] • DEPRESS AND RELEASE SEAL IN reset pushbutton • IF SEAL IN light remains Lit THEN PERFORM section 4.5	PRO
	[S49.2.A 4.5] • ENSURE Barometric Condenser Vacuum Pump operation • DEPRESS AND RELEASE Turbine Trip pushbutton • VERIFY RCIC turbine comes to rest	PRO
	Establish HPCI as Protected	SRO
	[OT-104, 3.3] **CONSIDER** reportability of Rx power excursion and for Inadvertent injection	SRO
	[OT-104, 3.5] **DEMAND** a P-1 edit	RO
	Reference Tech Spec 3.7.3 for RCIC INOP 14 day LCO	SRO
	Contact WWM for support to investigate RCIC	SRO

EVENT - 2 101-D13 BREAKER TRIPS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Actuation of **Trigger #_1_** started RCIC initiation signal **and** trip of 101-D13 following time delay.

Respond to request for assistance as appropriate.

At time _5 min_ when requested to investigate cause of 101-D13 breaker trip,
report: There are no targets up on the 101-D13 breaker. There is nothing apparent that would have caused the breaker to trip.

When WWM support requested for the 101-D13 breaker,
respond: That a troubleshooting plan will be developed.

At time _5 min_ when requested to reset CREFAS Fresh Air Supply Rad Monitors,
Toggle Remote Function **RRM015** to **RESET** and,
report: CREFAS fresh air supply rad monitors have been reset.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 2 101-D13 BREAKER TRIPS	
	Reference appropriate ARC: • 121 B-1, D13 Bus Undervoltage • 121 A-2, 101-D13 Bus Bkr Trip • 121 D-2, D13 Standby AC Power System Out of Service • 121 G-1, 1 Unit Div 3 SFGD Battery Charger Trouble • 003 E-1, North Stack Hi-Hi Rad • 003 F-1, Units 1&2 South Stack Hi-Hi Rad	PRO
	Recognize/report 101-D13 trip and dead bus transfer to 201-D13	PRO
	[ARC-MCR-121 B-1] Recognize D13 D/G failed to auto start	PRO
	Start D13 manually	SRO/PRO
	Enter E-D13 on temporary power loss	SRO
	[E-D13 2.1] ENSURE the following positioned to loop A: • HSS-87-140, Drywell Equip Drn Clg coil selected • HSS-87-151, Recirc pp Mtr Air Clr loop selected • HSS-87-150, Recirc pp Mtr Air Clr Loop selected	PRO
	[E-D13 2.2] Verify '1A' RECW Pump tripped & '1B' RECW Pump running	PRO
	[E-D13 2.3] Recognize '1A' RWCU Pump trip	PRO/RO
	[E-D13 2.4.2] Notify Chemistry that RWCU is out of service and to perform compensatory sampling	PRO
	[E-D13 2.3.1] Take action to isolate RWCU or perform fast restart per S44.7.A or Shutdown RWCU per S44.2.A (Time permitting)	PRO
	[E-D13 2.7] Recognize '1A' CRD Pump tripped	RO
	Enter ON-107, Control Rod Drive System Problems	SRO
	[ON-107 Att #1] Re-start '1A' CRD Pump	RO

EVENT - 2 101-D13 BREAKER TRIPS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time 5 min when requested to investigate cause of 101-D13 breaker trip,
report: There are no targets up on the 101-D13 breaker. There is nothing apparent that would have caused the breaker to trip.

At time 5 min when requested to reset CREFAS Fresh Air Supply Rad Monitors,
Toggle Remote Function **RRM015** to **RESET** and,
report: CREFAS fresh air supply rad monitors have been reset.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 2 101-D13 BREAKER TRIPS	
	Reference appropriate ARC: • 109 F-3, 1 Suppression Atmospheric Analyzer Trouble/INOP • 003 G-1, Reactor Enclosure Common Area Hi Rad • 003 G-2, Turbine Enclosure Common Area Hi Rad • 003 B-4, Unit 1 &2 Containment Leak Detector Hi/Low Flow	PRO
	Direct EO to reset Rad monitors in AER	PRO
	Reset Suppression Atmospheric Analyzer at 10S206 pnl	PRO
	Verify 0C ESW pump start (0C667 panel)	PRO
	Verify '1A' Drywell Chiller operating	PRO
	[ARC-MCR-001 A-1] Reset MCR Rad 'C' Isolation per S78.7.A	PRO
	[S78.7.A 4.3.1] **PLACE** HS-78-017C to RESET C	PRO
	[S78.7.A 4.3.2] ENSURE HSS-78-017C to "NOR"	PRO
	[S78.7.A 4.3.3] PLACE HS-78-017C to "AUTO"	PRO
	[ARC-MCR-003 B-4] Re-open Containment Leak Detector Isolation Valves 190 A&C	PRO
	[ARC-MCR-121 B-1] Reference Tech Spec 3.8.1.1 Action d. for INOP diesel and one offsite source	SRO
	[ARC-MCR-121 B-1] Direct performance of ST-6-092-365-0 for Tech Spec 3.8.1.1 action e	SRO
	[ARC-MCR-121 B-1] Dispatch floor personnel to investigate cause of 101-D13 trip	PRO
	[ARC-MCR-121 B-1] Dispatch floor personnel to investigate cause of D13 D/G failure to start	PRO
	Contact OCC for support	SRO
	Dispatch floor personnel to investigate 10C221, FPC	PRO
	Contact SDM and SOS for breaker trip	SRO

EVENT - 3 '1B' CONDENSATE PUMP VIBRATIONS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Manually actuate **Trigger #_3_** to initiate '1B' Condensate Pump vibrations.

At time _5 min_ when requested to investigate '1B' Condensate Pump vibration
report: _The '1B' Condensate Pump is vibrating heavily and the motor is visibly shaking.

Note: As soon as possible after '1B' Condensate Pump is tripped,
DELETE Malfunction **VIC108B.**

Note: Trigger #_6_ will auto trip '1B' Condensate Pump if vibration levels reach 20 mils.

IF the Condensate Pump **TRIPPED** automatically (at 20 mils) due to the operators not securing the pump, then provide the following
report: The '1B' Condensate pump breaker has tripped on overcurrent.

Ensure **Trigger # _4_** automatically actuates when '1B' Condensate Pump Discharge Valve green light is lit, to initiate a coolant leak in the Drywell.

When requested reset rad monitors Load **REMOTES** "Reset all Rad Monitors"

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 3 '1B' CONDENSATE PUMP VIBRATIONS	
	Reference appropriate ARCs. • 107 I-2, VIBRATION ALARM ALERT • 107 I-3, VIBRATION ALARM DANGER	PRO/RO
	Recognize rising trend in Condensate Pump vibration on VMS	PRO
	Establish '1B' Condensate Pump vibration as Critical Parameter	PRO
	Dispatch floor personnel to investigate '1B' Condensate Pump vibration	PRO
	[ARC-MCR-107 I-3] CRS briefs MCR on plan to secure '1B' Condensate Pump following field report and rising vibration levels	SRO
	Enter GP-5 Appendix 3 for unintentional power drop	SRO
	[GP-5 Appendix 2] Reduce power to lower feedwater flow < 11.3 Mlbm/hr per GP-5	SRO
	Secure '1B' Condensate Pump per S05.2.A after field report **(Malfunction)**	PRO
	Reference ARC. • 104 F-2, 1B Condensate Pump Brk Trip	PRO
	[ARC-MCR-104 F-2] Ensure Recirc Pump High Speed runback occurs after trip of '1B' Condensate Pump if Feedwater Flow is > 80.3%.	RO
	[ARC-MCR-104 F-2] Ensure '1B' Condensate Pump discharge valve is closed	PRO/RO
	Re-enter OT-104 for power change if reactor power was not manually lowered when Condensate Pump tripped	SRO
	[GP-5 Appendix 2] Contact Chemistry for > 15% power reduction	PRO

EVENT - 4 COOLANT LEAK IN THE DRYWELL (Abnormal)

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure **Trigger # 4** automatically actuates when '1B' Condensate Pump Discharge Valve green light is lit to initiate a coolant leak in the Drywell.

Ensure **Trigger # 5** automatically actuates when the Reactor Mode Switch is taken to SHUTDOWN, to cause a loss of all high pressure feed by performing the following:
in 2 minutes initiating 1% LOCA
in 3 minutes initiate a fault on 11 Bus
in 7 minutes trip the running CRD Pump on clogged suction filter

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 4 COOLANT LEAK IN THE DRYWELL (Abnormal)	
	Reference appropriate ARC: • 115 B-5, DRYWELL COOLER DRAIN FLOW HIGH • 107 F-2, DRYWELL HI PRESS • 003 B-2, Units 1&2 Containment Leak Detector Hi Radiation • 112 C-5, Drywell Equip Drain Tank/Floor Drain Sump Leakage Hi Flow	PRO
	Enter OT-101 on rising Drywell pressure	SRO
	Perform OT-101, Att. 4	PRO
	Establish Drywell pressure as critical parameter and establish threshold to perform manual scram	SRO
	EVALUATOR NOTE: **Threshold (1)** (Unidentified or pressure boundary leakage into the Drywell > 10 gpm) for the following **UNUSUAL EVENT (MU5)** declaration is determined by monitoring Drywell Floor Drain Tank Level on the Plant Monitoring System (PMS) computer. MU5 may **not** be declared due to the rise in drywell pressure that causes the ALERT escalation on 1.68# Drywell pressure shortly after the UE level is reached. In this case the Time Condition Available for the FA1 alert should be the time that MU5 Threshold was met (> 10 gpm Unidentified leakage)	
	SM call EP Communicator to MCR	
	Shift Manager declares an Unusual Event **(MU5)** due to Threshold(s): **1.** Unidentified or pressure boundary leakage into the Drywell > **10 gpm** **OR** **2.** Identified leakage into the Drywell > **25 gpm** **Within 15 minutes** Time Condition Available: _____ Time Classification Made: _____	
	SM accurately completes State/Local Event Notification Form EP-MA-114-100-F-01	
	The SM Determines that there is not a release in progress	
	The SM provides the Notification form to the EP Communicator **within 9 minutes** and makes required notifications of declaration being made per EP-MA-114-100 Time Classification Made _____ Time Notification Form provided to EP Communicator _____ Time Notification Made _____	
	SM completes Shift Emergency Director checklist EP-AA-112-100 F-01	
	SM announces Unusual Event on PA within 15 minutes of declaration	

EVENT - 4	COOLANT LEAK IN THE DRYWELL (Abnormal)

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Ensure **Trigger # 5** automatically actuates when the Reactor Mode Switch is taken to SHUTDOWN, to cause a loss of all high pressure feed by performing the following:
in 2 minutes initiating 1% LOCA
in 3 minutes initiate a fault on 11 Bus
in 7 minutes trip the running CRD Pump on clogged suction filter

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 4 COOLANT LEAK IN THE DRYWELL (Abnormal)	
	[OT-101 Att#4] **ENSURE** the following isolated (time permitting) • Main Steam Line Sample Valves • Recirc Sample Valves • RWCU System • Main Steam Line Drains	PRO/RO
	[OT-101 3.4] (time permitting) Perform GP-4 Shutdown after determining OT-101 actions were not successful in arresting the leak	PRO/RO
	[OT-101 3.4] Manually scram reactor prior to 1.68 psig	RO
	Enter T-101 on RPV Level <+12.5"	SRO
	[T-101 RC-4] Place Mode Switch in SHUTDOWN	RO
	[T-101 RC-6] Insert SRMs/IRMs	RO
	[T-101 RC/Q-2] Trip Main Turbine	PRO
	[T-101 RC/Q-2] Ensure Generator Lockout	PRO
	[T-101 RC-5] Verify Isolations are complete for <12.5"	PRO
	Enter T-102 on 1.68 psig Drywell Pressure	SRO
	Re-enter T-101, when Drywell Pressure is > 1.68 psig	SRO
	[T-101 RC-6] Verify Isolations are complete on Drywell pressure > 1.68 psig	PRO
	[T-101 RC/P-22] Depressurize without exceeding cooldown rate to reduce leak input	PRO
	Secure both Recirc Pumps within 10 minutes of RECW isolation (May trip on Aux Bus Fast Transfers if Scram prior to Transfer House Loads)	PRO

EVENT - 5	**LOSS OF HIGH PRESSURE FEED WITH LOCA (Major)**
EVENT - 6	**'1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER**
EVENT - 7	**'1A' CORE SPRAY PUMP FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _10 min_ after FSSV or EO action requested for 11 Unit Aux Bus, and **report:** _An 11 Bus Lockout actuated. There's indications of a fault and the smell of burnt insulation.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 5 LOSS OF HIGH PRESSURE FEED WITH LOCA (Major) **EVENT - 6 '1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER** **EVENT - 7 '1A' CORE SPRAY PUMP FAILS TO AUTO START**	
	Shift Manager declares an Alert **(FA1)** due to Threshold(s): **RC.3.1.** Drywell pressure **> 1.68 psig** **AND** **RC.3.2.** Drywell pressure rise due to RCS Leakage **Within 15 minutes** Time Condition Available: _____ Time Classification Made: _____	SRO
	SM accurately completes State/Local Event Notification Form EP-MA-114-100-F-01	
	The SM Determines that there is not a release in progress	
	The SM provides the Notification form to the EP Communicator **within 9 minutes** and makes required notifications of declaration being made per EP-MA-114-100 Time Classification Made _____ Time Notification Form provided to EP Communicator _____ Time Notification Made _____	
	SM completes Shift Emergency Director checklist EP-AA-112-100 F-01	
	SM announces Alert on PA within 15 minutes of declaration	

EVENT - 5	**LOSS OF HIGH PRESSURE FEED WITH LOCA (Major)**
EVENT - 6	**'1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER**
EVENT - 7	**'1A' CORE SPRAY PUMP FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _10 min_ after FSSV or EO action requested for 11 Unit Aux Bus, provide Initial Investigation
report: _An 11 Bus Lockout actuated. There's indications of a fault and the smell of burnt insulation.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 5 LOSS OF HIGH PRESSURE FEED WITH LOCA (Major) **EVENT - 6 '1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER** **EVENT - 7 '1A' CORE SPRAY PUMP FAILS TO AUTO START**	
	EVALUATORS NOTE: Following the scram, a loss of Feedwater Pumps and Condensate occurs as the 11 BUS trips. Also, HPCI fails to start when required. As RPV level decreases the crew will enter T-111, Level Restoration/Steam Cooling, start all available systems, including T-240, Maximizing CRD Flow After Shutdown During Emergency Conditions	
	Recognize HPCI failed to start on Drywell pressure > 1.68 psig	PRO
	Dispatch floor personnel to investigate HPCI failure	PRO
	Reference ARC; • 125 F-1, 11 Bus BRK Trip	PRO
	[ARC-MCR-125 F-1] Recognize the trip of the 11 Unit Aux Bus	PRO
	[ARC-MCR-125 F-1] Dispatch floor personnel to investigate trip of 11 Unit Aux Bus	PRO
	Recognize RPV level decreasing and loss of Feedwater	RO
	Enter T-111, Level Restoration/Steam Cooling	SRO
	[T-101 RC/L-11, T-111 LR-5] Manually inhibit auto ADS	PRO
	Establish RPV level as critical parameter	SRO
	[T-111 LR-8] Start 2 Subsystems- '1C' & '1D' LPCI Pumps or 'A' or 'B' Loop Core Spray	PRO
	[T-111 LR-7] Direct and start SLC per S48.1.B	
	Recognize Hi discharge pressure and secure A & B SLC pumps	SRO
	Start the '1C' SLC Pump and then secure due to high discharge pressure	RO
	[T-111 LR-6] Direct Maximize CRD flow per T-240	SRO
	Reduce RPV depressurization and stabilize pressure to conserve inventory	RO
	Re-enter T-102 on Drywell temp > 145°F	SRO
	[T-102 DW/T-5] Maximize Drywell Cooling bypassing isolations per GP-8	PRO

EVENT - 5	**LOSS OF HIGH PRESSURE FEED WITH LOCA (Major)**
EVENT - 6	**'1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER**
EVENT - 7	**'1A' CORE SPRAY PUMP FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _10 min_ after FSSV or EO action requested for 11 Unit Aux Bus, provide Initial Investigation
report: _An 11 Bus Lockout actuated. There's indications of a fault and the smell of burnt insulation.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 5 LOSS OF HIGH PRESSURE FEED WITH LOCA (Major) **EVENT - 6 '1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER** **EVENT - 7 '1A' CORE SPRAY PUMP FAILS TO AUTO START**	
	Establish Suppression Pool pressure as Critical Parameter	SRO
	[T-102 PC/P-7] **BEFORE** Supp Pool press reaches 7.5 psig, Spray the Suppression Pool per T-225	PRO
EVALUATORS NOTE: The following steps are performed as directed by T-225, Startup and Shutdown of Suppression Pool (4.2) and Drywell Spray Operation (4.5).		
	[T-225 4.2.3] **IF** RHR pump not running **THEN** start 1A(B)P202 "RHR Pump"	PRO
	[T-225 4.2.4] **ENSURE** the following valves open: • HV-51-1F047A(B), "1A(B) RHR Htx Shell Side Inlet Vlv" (INLET) • HV-51-1F003A(B), "1A(B) RHR Htx Shell Side Outlet Vlv" (OUTLET) • HV-C-51-1F048A(B), "1A(B) RHR Htx Shell Side Bypass Vlv" (HEAT EXCH BYPASS)	PRO
	[T-225 4.2.5] **OPEN** HV-51-1F024A(B), "1A(B) RHR Pp Full Flow Test Return Vlv" (SUPP POOL CLG A(B)) **AND OBTAIN** flow of 8,000 to 8,500 gpm as indicated on FI-51-1R603A(B), FL.	PRO
	[T-225 4.2.6] **OPEN** HV-51-1F027A(B), "1A(B) RHR Supp Pool Spray Line PCIV" (SUPP POOL SPRAY).	PRO
	[T-225 4.2.8] **PLACE** RHR Service Water Pump for RHR Heat Exchanger to be used in service per S12.1.A, RHR Service Water System Startup.	PRO
EVALUATORS NOTE: The following steps are performed as directed by S12.1.A, RHR Service Water System Startup. (B Loop RHRSW)		
	[S12.1.A 4.1.4/5 or App1 1.3] • **OPEN** HV-51-1F014A(B), HEAT EXCHANGER INLET. • Throttle **OPEN** HV-51-1F068A(B) for 18 to 20 seconds.	PRO
	[S12.1.A 4.1.6(7) or App1 1.4] **VERIFY** PI-51-105A-1(B), HX DISCH, indicates system static pressure greater than or equal to 15 psig.	PRO

EVENT - 5	**LOSS OF HIGH PRESSURE FEED WITH LOCA (Major)**
EVENT - 6	**'1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER**
EVENT - 7	**'1A' CORE SPRAY PUMP FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 5 LOSS OF HIGH PRESSURE FEED WITH LOCA (Major) **EVENT - 6 '1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER** **EVENT - 7 '1A' CORE SPRAY PUMP FAILS TO AUTO START**	
	[S12.1.A 4.1.8 or App1 1.4] **IF** the HI RAD AND/OR HI Pump Discharge pressure trips need to be bypassed **AND** the required actions of ODCM Part 1 Control 3.1.1 have been met for the INOPERABLE RHRSW Radiation Monitor, **THEN PLACE** HSS-12-002A(B), PUMP TRIP BYPASS, in "BYPASS."	PRO
	[S12.1.A 4.2.1.1 or App1 1.6] **IF** 'A' Loop pump (0A(C)-P506) is to be placed in service, **THEN ENSURE** 0A-V543 OR 0C-V543, Spray Pond Pump Room Fans, in "RUN" at 00C681.	PRO
	[S12.1.A 4.2.1.2 or App1 1.7] **IF** 'B' Loop pump (0B(D)-P506) is to be placed in service, **THEN ENSURE** 0B-V543 OR 0D-V543, Spray Pond Pump Room Fans, in "RUN" at 00C681.	PRO
	[S12.1.A 4.2.2 or App1 1.8] **START** 0A(B,C,D)P506, RHRSW PUMP.	PRO
	[S12.1.A 4.2.3 or App1 1.9] **THROTTLE** HV-51-1F068A(B) to the maximum obtainable position without exceeding 11,000 gpm on FI-51-*R602A(B) while maintaining pump disch pressure (PI-12-001A-1(B)) between 75 psig to 85 psig.	PRO
	[T-225 4.2.9] **CLOSE** HV-C-51-1F048A(B), "1A(B) RHR Htx Shell Side Bypass Vlv" (HEAT EXCH BYPASS).	PRO
EVALUATORS NOTE: The following steps are performed as directed by T-225, Startup and Shutdown of Suppression Pool (4.2) and Drywell Spray Operation (4.5).		
	DIRECT [T-102 PC/P-9] Spray the **Drywell** per T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation	SRO
	[T-225 4.5.1] **ENSURE** HV-51-1F004A(B), "1A(B) RHR Pump Suction PCIV" (SUCTION A(B)), open	PRO
	[T-225 4.5.2] **ENSURE** the following valves closed: • HV-51-1F006A(B), "1A(B) RHR Pp S/D Clg Suct Intertie Vlv" • HV-51-1F015A(B), "1A(B) Shutdown Clg Injection PCIV" HV-51-1F016A(B), "1A(B) RHR Cntmt Spray Line Outboard PCIV" • HV-51-1F017A(B), "1A(B) RHR LPCI Inj PCIV"	PRO

EVENT - 5	**LOSS OF HIGH PRESSURE FEED WITH LOCA (Major)**
EVENT - 6	**'1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER**
EVENT - 7	**'1A' CORE SPRAY PUMP FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 5 LOSS OF HIGH PRESSURE FEED WITH LOCA (Major) **EVENT - 6 '1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER** **EVENT - 7 '1A' CORE SPRAY PUMP FAILS TO AUTO START**	
	[T-225 4.5.3] **IF** RHR pump not running **THEN START** 1A(B)P202 "RHR Pump."	PRO
	[T-225 4.5.4] **ENSURE** the following valves open: • HV-51-1F047A(B), "1A(B) RHR Htx Shell Side Inlet Vlv" (INLET) • HV-51-1F003A(B), "1A(B) RHR Htx Shell Side Outlet Vlv" (OUTLET) • HV-C-51-1F048A(B), "1A(B) RHR Htx Shell Side Bypass Vlv" (HEAT EXCH BYPASS)	PRO
	[T-225 4.5.5] **TRIP** Reactor Recirc Pumps.	PRO/RO
	[T-225 4.5.6] **REMOVE** Drywell Cooling Fans from service by placing all 16 Drywell Cooler Fan switches to "OFF."	PRO/RO
	[T-225 4.5.7] **IF** Drywell High Pressure **AND** LOCA signals are present, **THEN GO TO** T-225 step 4.5.11.	PRO
	[T-225 4.5.11] **OPEN** HV-51-1F024A(B), "1A(B) RHR Pp Full Flow Test Return Vlv" (SUPP POOL CLG A(B)), **AND OBTAIN** flow of 9,250 to 10,500 gpm as indicated on FI-51-1R603A(B), FL.	PRO
	[T-225 4.5.12] **OPEN** only one loop HV-51-1F021A(B), "1A(B) RHR Cntmt Spray Line Inboard PCIV" (INBOARD).	PRO
	[T-225 4.5.13] **REQUEST** SSV verify drywell temperature **AND** drywell pressure are on SAFE side of Drywell Spray Initiation Limit Curve per T-102, Primary Containment Control **OR** SAMP-1, RPV and Primary Containment Flooding Control.	PRO/SRO
	[T-225 4.5.14] Throttle **OPEN** only one loop HV-51-1F016A(B), "1A(B) RHR Cntmt Spray Line Outboard PCIV" (OUTBOARD) to initiate spray **AND OBSERVE** raising flowrate as indicated on FI-51-1R603A(B), FL.	PRO

EVENT - 5	**LOSS OF HIGH PRESSURE FEED WITH LOCA (Major)**
EVENT - 6	**'1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER**
EVENT - 7	**'1A' CORE SPRAY PUMP FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At Time 4 min after FSSV or EO is directed to open CRD suction filter bypass
Delete MCR547 running CDR pp trips on clogged suction filter
Report Suction filter bypass valve 46-1F045 is open

At time 10 min after FSSV or EO action requested for SE-10 Floor Actions
Load **All SE-10 Floor Actions with Time Delays Scenario** and
report: The status of individual resets as requested **OR** when all resets are timed out
report: All SE-10 Floor Actions are complete

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 5 LOSS OF HIGH PRESSURE FEED WITH LOCA (Major) **EVENT - 6 '1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER** **EVENT - 7 '1A' CORE SPRAY PUMP FAILS TO AUTO START**	
	Reference ARC; • 108 G-1, 1A/1B CRD Water Pump Trip • 108 G-3, 1A/1B CRD Pump Suction LO Press	RO
	Recognize '1A' CRD Pump trip on suction filter clogging	RO
	Enter ON-107, CRD Problems	SRO
	[ON-107 Att#2] Dispatch personnel to open CRD suction filter bypass	RO
	[ON-107 Att#2] Restart '1A' or '1B' CRD Pump after bypassing the suction filter **(Malfunction)**	RO
	Minimize steam users to conserve RPV inventory	PRO/RO
	Crew recognizes MSIVs closed on Group 1 Isolation < - 129 inches	Crew
EVALUATORS NOTE: The following steps are from SE-10, LOCA and are performed at the Safeguards Panel (Diesel Panel).		
	Perform SE-10 following LOCA signal	RO
	[SE-10 3.1] **PLACE** the following to "CLOSE" • 52-20224/CS, "D*24 Safeguard L.C. D*24-G-D MCC Bkr" (SAFEGUARDS B), on *BC661 • 52-20124/CS, "D*14 Safeguard L.C. D*14-G-D MCC Bkr" (SAFEGUARDS A), on *AC661.	RO
	[SE-10 3.2] **PLACE** to "RESET": • 43-22322/CS, "Div. III Non SFGD Instr. Panel" (INST AC 201 CONTROL PNL), on *CC661 • 43-22422/CS, "Div. IV Non SFGD Instr. Panel" (INST AC 202 CONTROL PNL), on *DC661.	RO
	[SE-10 4.3] Maintain ECCS for injection **IF** Low Pressure ECCS is not required to restore RPV level, **THEN ALIGN** per SSV direction.	SRO

EVENT - 5	**LOSS OF HIGH PRESSURE FEED WITH LOCA (Major)**
EVENT - 6	**'1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER**
EVENT - 7	**'1A' CORE SPRAY PUMP FAILS TO AUTO START**

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

At time _10 min___ after FSSV or EO action requested for SE-10 Floor Actions
Load **All SE-10 Floor Actions with Time Delays Scenario** and
report: The status of individual resets as requested **OR** when all resets are timed out
report: All SE-10 Floor Actions are complete_

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT - 5 LOSS OF HIGH PRESSURE FEED WITH LOCA (Major) **EVENT - 6 '1A' CRD PUMP TRIPS ON CLOGGED SUCTION FILTER** **EVENT - 7 '1A' CORE SPRAY PUMP FAILS TO AUTO START**	
	Direct SE-10 Floor actions	PRO
	Recognize '1A' Core Spray Pump failed to start/re-start on LOCA signal	PRO
	Manually start '1A' Core Spray Pump **(Malfunction)**	PRO
	Restart CRD and SLC after LOCA signal, if available (SLC OOS)	RO
	Enter T-112 when RPV level drops to -161 inches, or if the safe side of the PSP curve cannot be maintained. (Containment Cooling in service)	SRO
	DIRECT [T-112 EB-12] Open five (5) ADS valves	SRO
	PERFORM [T-112 EB-12] Open all 5 ADS valves **(Critical Task)**	PRO
	[T-111 LR-20] Maximize RPV injection using all available systems subsystems and alt subsystems EXCEEDING pump NPSH and vortex limits if necessary.	PRO
	Align all low pressure ECCS for RPV injection and secure from Suppression Pool/Drywell Spray	PRO
	When Reactor pressure permits, inject with all available low pressure ECCS, to restore RPV level above -161 inches **(Critical Task)**	PRO
	When it is determined RPV level can be maintained above -161 inches, re-enter T-101 at RC/L-1	SRO
	Restore RPV level to +12.5" to +54"	PRO
	Reenter T-102 on Suppression Pool Temperature >95°F	SRO
	Restore Drywell Spray per T-225 **(Critical Task)**	PRO
	Restore Suppression Pool Spray per T-225	PRO
	Bypass isolations per GP-8 and restore H2/O2 analyzers to service (time permitting)	PRO

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	Rough log maintained with the following entries: • RCIC initiation • 101-D13 trip • D13 D/G failure • '1B' Condensate Pump OOS • Drywell Leak • SCRAM • LOCA signal • 11 BUS brk trip • RPV Level below TAF • Lowest RPV Level • Emergency Blowdown • RPV Level above TAF • '1A' Core Spray Pump fails to start • '1A' CRD Pump Trip (clogged suction) • HPCI Failure	
	Critique any instances where fundamentals were not properly adhered to, and whether in-the-moment coaching was provided by Supervision. Provide examples of effective Leadership and areas for improvement.	

Attachment 1
Simulator Operator Response Times

Procedure	Performance	Response Time (Minutes)
T-209	Injection from the Standby Liquid Control Storage Tank with the RCIC System	45
T-212	Bypassing SQUIB Valves for SLC Injection	19
T-215	De-energization of Scram Solenoids	7
T-216	Manual Isolation and Vent of Scram Air Header	7
T-217	RPS/ARI Reset and Backup Method of Draining Scram Discharge Volume	17
T-219	Maximizing CRD Cooling Water Header Flow during ATWS Conditions	23
T-221	MSIV Isolation Bypass Procedure	11
T-225	Startup and Shutdown of Suppression Pool and Drywell Spray Operations	8
T-240	Maximizing CRD flow after Shutdown During Emergency Conditions	8
T-245	RPV Injection from RHR S/D Cooling	12
T-248	Injection from SLC Test Tank to RPV	15
T-251	Establish a HPCI Injection flow Path VIA Feedwater Only	6
T-270	Terminate and Prevent Injection into the RPV	7
T-290	Instrumentation Available for T-103 SAMP-2	5
S46.7.A (4.2.1)	Control Rod Drive Hydraulic System Operation Following Reactor Scram (Securing CRD flow to the Reactor - Close 46-1F060, CRD Water Pressure Control Station Inlet Valve)	7
SE-10-1 Resets and Floor action	Breaker Reset Following LOCA (Also reset ARMs, RHRSW Rad Monitor and RDCS)	10

Attachment 2
Communications Log

CREW: _____

DATE: _____ LSEG: _____

START TIME: _____ STOP TIME: _____

SM: _____ RO: _____ WCS: _____

CRS: _____ PRO: _____ FSSV: _____

TIME	PERSON CALLING	PERSON BEING CALLED	COMMUNICATION / REQUEST	CALL BACK TIME

PREBRIEF INSTRUCTIONS

- Unit 1 is in OPCON 1 at 100% power
- Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- RCIC is running per S49.1.D, RCIC System Full flow Functional Test And Turbine Oil Priming for oil sampling. RCIC will be shutdown when sampling is complete.
- ST-6-060-390-1, Suppression Pool Temperature checks required by S49.1.D are in progress

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- None

Planned Evolutions:

- Maintain power at 100% per GP-5

Documents Provided:

- ST-6-060-390-1 Suppression Pool Temperature Monitoring complete up to step 4.3.1.1 first temperature logged on attachment 1
- S49.1.D, RCIC System Full flow Functional Test And Turbine Oil Priming completed up to and including step 4.3.7
- MCR will be notified to shutdown RCIC when oil sampling is complete.

Exelon Generation.

LIMERICK GENERATING STATION
SIMULATOR EVALUATION GUIDE

CODE NO:	SEG-4056E	REV NO:	001
AUTHOR:	R. A. FORST	APPROXIMATE RUN TIME:	80 minutes
TYPE:	SIMULATOR EVALUATION GUIDE	EFFECTIVE DATE:	1/6/16
PROGRAM:	LICENSED OPERATOR TRAINING		
COURSE:	LICENSED OPERATOR (REQUALIFICATION/INITIAL) TRAINING		
TITLE:	Simulator Evaluation Guide for Individual and Crew Performance		

Prepared By: _____ Date: 1/4/16
Training Instructor - Signature

Reviewed By NA FOR NRC INITIAL Date: N/A
Program (ILT or LOR) Lead - Signature

Reviewed By: A.W. HIGHTOWER, EPM Date: 1/5/16
EP (as appropriate) - Signature

Reviewed By: N/A Date: N/A
RE (as appropriate) - Signature

Approval: _____ Date: 1-6-16
OPS Manager - Signature

Approved For Use: _____ Date: 1/6/16
Training Manager - Signature

Facility: Limerick 1 & 2 Scenario No.: SEG-4056E Rev 1 Op-Test No.: 1 .

Examiners: _____ Operators: _____

Initial Conditions: Unit 1 is at 6 % power with a startup in progress. Unit 2 is at 100% power.

Turnover: Startup is in progress per GP-2. Crew is to continue withdrawing control rods IAW rod move sheet until 2 Bypass Valves are open in preparation to enter OPCON 1.

Event No.	Malfunction Number	Event Type*	Event Description
1	N/A	R-RO	Withdraw control rods to raise power
2	MRD016F (18-19)	C-RO TS-SRO	Control Rod (18-19) scrams **(Abnormal)**
3	MPC482A	C-PRO	'1A' Drywell Chiller trip **(Abnormal)**
4	MED279A	C-PRO TS-SRO	Loss of 10-Y201 safeguard electrical panel **(Abnormal)**
5	MRD016F (34-23) (58-35)	C-RO	2nd and 3rd Control Rod (34-23) and (58-35) scram **(Malfunction)**
6	MED261	M-All	Grid Instability Resulting in Loss of Offsite Power
7	MHP447B	C-PRO	HPCI system failure on initiation **(Malfunction)**
8	MDG420C	C-PRO	D13 Diesel Auto Start Failure (Recoverable) **(Malfunction)**
9	MRR440A	M-All	Small Break LOCA (1.5% ramped over 5 minutes) **(Malfunction)**
10	MRC466	C-PRO	RCIC Turbine trip on overspeed **(Malfunction)** (Recoverable after RPV Level reaches -120")

* **(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor**

I. **PURPOSE:** Systematically evaluate individual and team performance to identify areas for improvement. Critical Tasks and Assessment Items from this evaluation guide are to be used to assess crew and individual performance and as input into a 4.0 Crew Critique Process.

II. SIMULATOR EVALUATION GUIDE OBJECTIVES:

A. The following evaluation objectives apply to the Crew (C), Shift Manager (SM), Control Room Supervisor (S), Unit Reactor Operator / Plant Reactor Operator (R), or Incident Assessor / Shift Technical Advisor (A) as indicated in the following categories.

1. The general condition for each of the evaluation objectives will be "Given the plant conditions and sequence of events in the Simulator Evaluation Guide (SEG)".
2. The general acceptable evaluation objective criteria for each of the evaluation objectives will be "To perform effectively as an individual and contribute to successful crew performance in accordance with appropriate reference plant procedures and Operations Expectations, Fundamentals and Strategies".
3. Specific UNSAT evaluation objective criteria will be consistent with TQ-AA-155, Conduct of Simulator Training and Evaluation with applicable forms and job aids.
4. During performance of this Simulator Evaluation Guide, the individuals and crew should satisfactorily demonstrate the following overall procedure and plant control objectives:

- Direct and perform actions per ON-104, Control Rod Problems
- Direct and perform actions per OT-101, High Drywell Pressure
- Direct and perform actions per OT-104, Unexpected/Unexplained Positive or Negative Reactivity Addition
- Direct and perform E-10/20, Loss of Offsite Power
- Direct and perform actions per GP-2, Plant Startup
- Direct and perform actions per T-101, RPV Control
- Direct and perform actions per T-102, Primary Containment Control
- Direct and perform actions per T-111, Level Restoration/Steam Cooling
- Direct and perform actions per T-112, Emergency Blowdown

III. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	LORT Approval	Action Tracking	Revision Date

IV. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (e.g for conversion of LSTS to SEG format).

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
Rev000	This scenario was originally developed as 2012 ILT NRC Scenario 2. This revision is to reformat and changes the initial conditions from 100% power to 14% power.	10/22/14
Rev 001	Revised for use to Startup at 6% power with system malfunction changes	7/1/15

V. SCENARIO EVENT AND EVALUATION SUMMARY:

Event One: When the crew takes the shift, the RO will raise reactor power by withdrawing control rods.

Evaluation: Evaluate the RO's ability to withdraw control rods IAW by S73.1.A, the rod pull sheet and verify proper RMCS operation.

Event Two: On the fourth control rod selected, the rod will scram while being withdrawn to its target position.

Evaluation: Evaluate the crew's ability to execute ON-104 for a scrammed control rod, recognize indications that the rod has scrammed, and take actions for a scrammed control rod.

Event Three: After the scrammed control rod is addressed, the '1A' Drywell Chiller will trip.

Evaluation: To determine the crew's ability to respond to the chiller trip, track drywell pressure and temperature, and place the '1B' Drywell Chiller in service and enter OT-101 for the loss of Drywell Cooling, if required.

Event Four: After Drywell cooling is restored, an electrical fault will cause a loss of a Safeguard 'Y' panel

Evaluation: Evaluate the crew's ability to evaluate the loss of the 'Y' Panel and lost indications. The SRO will evaluate Tech Specs for 'Y' Power Distribution as well as all affected equipment.

SCENARIO EVENT AND EVALUATION SUMMARY cont'd

Event Five: Following the loss of the "Y" panel, a second control rod will scram.

Evaluation: Evaluate the crew's identification of a second control rod scram and immediately shutting down the reactor, entering T-100 or T-101, as required.

Events Six thru Ten: After Tech Specs have been referenced, a total Loss Of Offsite Power will occur resulting in a loss of feedwater to the reactor. Complicating the event will be failure of the D13 Diesel to auto start only. Shortly after the loss of power, a small Recirc rupture will occur resulting in lowering RPV level and rising Drywell pressure. Additionally, RCIC will trip on overspeed.

Evaluation: Evaluate the crew's ability to enter and execute E-10/20, Loss of Offsite Power, T-101, T-102 and T-111. The crew is expected to recognize failure of D13 Diesel to auto start and to manually start the diesel to energize the D13 Bus. The crew is also expected to spray the Suppression Pool with a RHR loop until RPV Level approaches TAF at which point all ECCS will be aligned for injection. The crew will also direct an EO to reset the RCIC overspeed trip and reopen the trip/throttle valve after the overspeed trip is reset. The crew is also expected to investigate the failure of the HPCI Auxiliary Oil Pump. The crew will perform a T-112 Emergency Blowdown when RPV level is less than -161" and restore RPV level to normal band with 'A' and 'C' LPCI, 'A' Core Spray loop and RCIC. After level is restored, the crew will re-align RHR to spray the Drywell per T-225.

Termination Point: The scenario may be terminated when the Emergency Blowdown is complete, RPV level is restored to normal band with ECCS and Containment Spray is in service.

VI. REFERENCES

A. Training Procedures
   1. TQ-AA-150, Operator Training Programs
   2. TQ-AA-151, ILT Certification and NRC Examination Development and Administration
   3. TQ-AA-155, Conduct of Simulator Training and Evaluation

B. Annunciator Response Cards (ARC)
   1. 108 F-4, ROD DRIFT
   2. 002 F-4 & F-5, RE SFD PNLs 10C245, 10C243 TROUBLE
   3. 002 F-2, REFUELING FLOOR LOW DELTA P/LOSS OF POWER/INOP
   4. 002 A-4, CONTROL ROOM EMER FRESH AIR ISO VLVS LOSS OF POWER
   5. 003 E-1, NORTH STACK HI-HI RAD
   6. 003 F-1, UNITS 1&2 SOUTH STACK HI-HI RAD
   7. 003 G-1, REACTOR ENCLOSURE AREA HI RADIATION
   8. 004 B-3, REAC ENCL LOW DELTA P/ LOSS OF POWER/INOP
   9. 004 C-1, A DRYWELL CHILLER TROUBLE/LOSS OF POWER
   10. 107 H-2, REACTOR HI/LO LEVEL
   11. 107 F2, DRYWELL HI PRESS
   12. 107 D-5, FWLCS TROUBLE
   13. 111/112 A-5, 1A/B RECIRC PUMP MOTOR WINDINGS LOW FLO
   14. 113 B-5, CORE SPRAY LINE INTERNAL BREAK
   15. 115 A/E-1, DIV 2 CORE SPRAY/RHR OUT OF SERVICE
   16. 116 B-3, RCIC PUMP LO FLOW
   17. 117 B-3, HPCI PUMP LO FLOW
   18. 120 F-3, 101 SAFEGUARD BUS UNDERVOLTAGE
   19. 120 F-4, 201 SAFEGUARD BUS UNDERVOLTAGE
   20. 122 D-1, D12 D/G TROUBLE
   21. 125 E-1, 1 UNIT PROTECTION RELAYS ENERGIZED
   22. 125 F-1, 11 BUS BRK> TRIP
   23. 125 F-4, 12 BUS BRK> TRIP

C. System Procedures (S)

D. General Procedures (GP)

E. Off Normal Procedures (ON)
   1. ON-104, Control Rod Problems

F. Operating Transient Procedures (OT)
   1. OT-104, Unexpected/Unexplained Positive or Negative Reactivity Addition
   2. OT-101, High Drywell Pressure

G. Event Procedures (E)
   1. E-10/20, Loss of Offsite Power

H. Special Event Procedures (SE)
   1. SE-10, LOCA
I. Surveillance Test and Routine Test Procedures (ST and RT)
J. Technical Specifications and TRM (TS)
   1. 3.5.1
   2. 3.8.2.1
   3. 3.8.1
K. Transient Response Implementation Procedures (T-100 series)/SAMPs
   1. T-101, RPV Control
   2. T-102, Primary Containment Control
   3. T-111, Level Restoration/Steam Cooling
   4. T-112, Emergency Blowdown
L. TRIP 200 Series Procedures
   1. T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation
   2. T-240, Maximizing CRD Flow After Shutdown During Emergency Conditions
M. EP-AA-1008, Limerick, Radiological Emergency Plan Annex for Limerick Generating Station
N. Administrative Procedures
   1. OP-AA Procedures
      a. OP-AA-1, Conduct of Operations
      b. OP-AA-20, Conduct of Operations Process Description
      c. OP-AA-101-111-1003, Operations Department Standards and Expectations
      d. OP-AA-101-113, Operations Fundamentals
      e. OP-AA-101-113-1006, 4.0 Crew Critique Guidelines
      f. OP-AA-106-101-1006, Operational Decision Making Process
   2. OP-LG Procedures
      a. OP-LG-101-111-1000, Licensed Operator Duties
      b. OP-LG-102-106, Operator Response Time Program at Limerick
      c. OP-LG-103-102-1000, Human Performance Continuing Good Practices
      d. OP-AA-103-102-1001, Strategies For Successful Transient Mitigation
      e. OP-LG-103-102-1002, Strategies for Successful Transient Mitigation
      f. OP-LG-108-101-1001, Simple Quick Acts / Transient Acts
O. Current Shift Night Orders Forced Outage Plan
P. INPO Significant Operating Experience Reports (SOER), Significant Event Reports (SER) and INPO Event Reports (IER)
   1. IER-L1 11-3, Weaknesses in Operator Fundamentals
   2. SER 3-05, Weakness in Operator Fundamentals
   3. SOER 10-02, Engaged Thinking Organizations
   4. INPO 15-004, Operator Fundamentals

VII. PREBRIEF INSTRUCTIONS

- Unit 1 is in OPCON 2 at 6% power
- Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- Reactor Startup in progress per GP-2 complete to step 3.4.36.
- Two Condensate Pumps in service
- RFPs maintaining RPV level
- Main Turbine BPVs controlling Rx pressure
- HPCI and RCIC are operable
- Offgas Recombiner is in service
- Main Turbine Chest warmed
- The OOM has been contacted and Start-Up Review is in progress in preparation for going to RUN

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- For this scenario there will be No RMSRO available

Planned Evolutions:

- Continue with startup per GP-2 raising power until 1 Bypass Valve is full open and make provisions to enter OPCON 1
- Shift Managers walkdown for OPCON 1 scheduled in 2 hours.

Documents Provided:

- GP-2, Normal Plant Startup, completed to step 3.4.36.
- Rod Move Sheet with next control rod 18-43 to be withdrawn to position 12
- S73.1.A

VIII. DIRECTIONS FOR EVALUATION PREPARATION

A. INITIAL PREPARATION

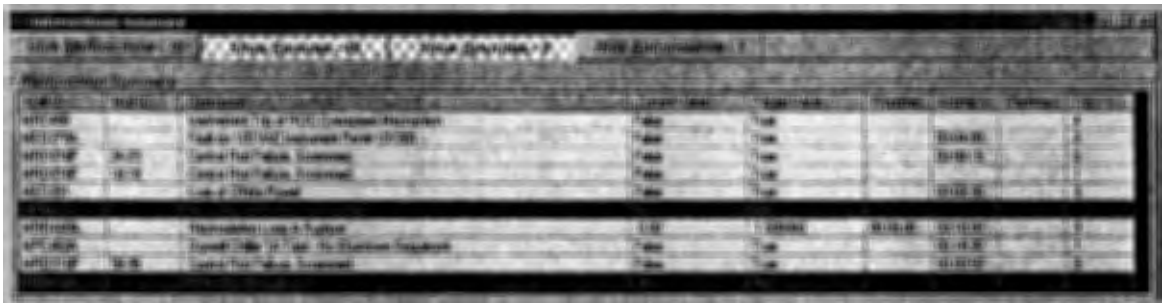
✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete TQ-AA-155, Operator Training Programs Attachment 02, Evaluated Scenario Administration Checklist.
	Complete TQ-LG-201-0113, Limerick Training Department Simulator Examination Security Actions Checklist

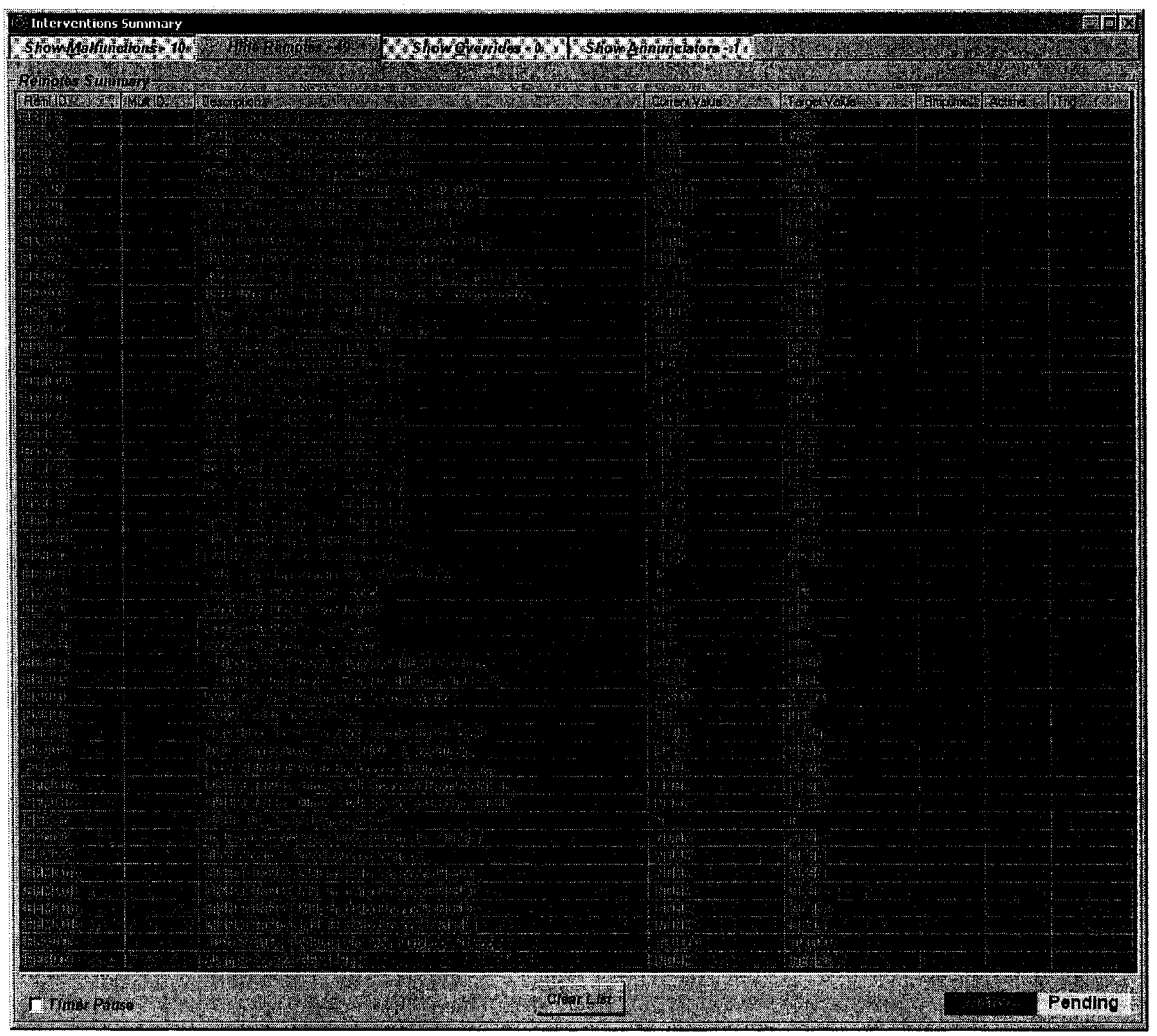
B. SIMULATOR SETUP

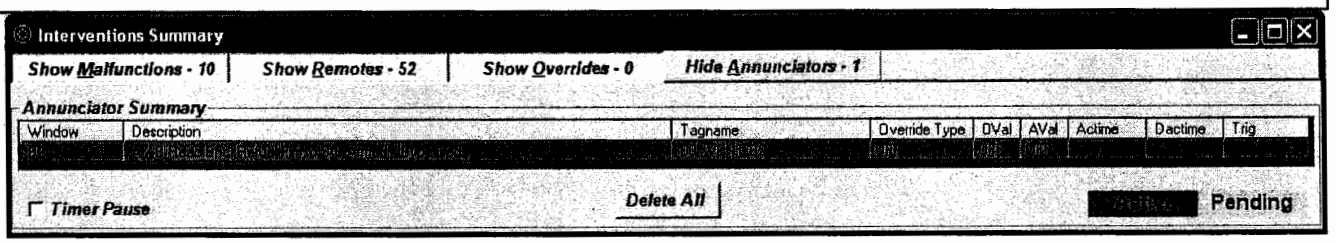
✔	ITEM / MALFUNCTION / REMOTE FUNCTIONS
	Complete Limerick Simulator Pre-Evaluation Checklist
	Reset Simulator to the Pre-loaded Cycle **IC-**Developed for this Scenario **OR** Reset the simulator to **IC-9** **AND** Load scenario file **SEG4056E Rev001scn** • Verify that all Malfunctions, Remotes, Overrides, Annunciators and Triggers are properly loaded • Ensure A Drywell chiller in service **OR** Manually enter the Malfunctions, Remotes, Overrides, Annunciators and Triggers per the Scenario Generator Screen Shots:

	Simulator Operator (Driver) perform the following:
	• Momentarily place simulator in RUN
	• Acknowledge and clear all spurious alarms
	• Place the simulator back into FREEZE
	• Place appropriate tags and equipment in required condition / status.
	• Provide the following;
	  • GP-2, Normal Plant Startup complete up to step 3.4.36
	  • Control Rod pull sheet (If using control booth copy – **Sequence step 20, Group 7 starting with rod 18-43)**
	  • S73.1.A, Normal Operation of the Reactor Manual Control System.

C. MALFUNCTION/REMOTE/OVERRIDE/ANNUNCIATORS FUNCTION TIME TABLE



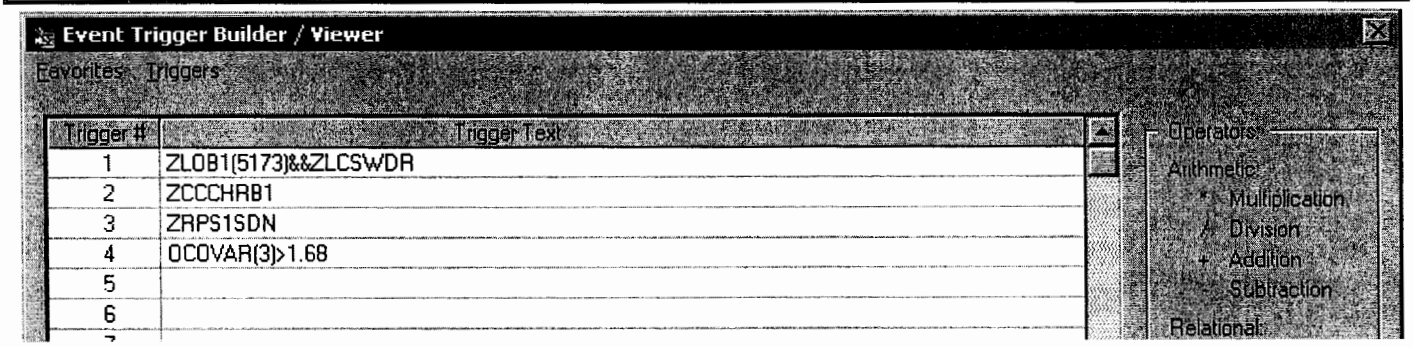




D. EVENT TRIGGERS ASSIGNMENT

1. Timers should be used on event triggers where possible for time validation
2. Timing of event triggers may be altered by the Lead Evaluator (or designee)
3. Verify triggers are actuated automatically as designed or manually initiate the trigger when the initiating action has occurred.
4. Inform Lead Evaluator (or designee) of expected plant response prior to actuation of each trigger.
5. Trigger #1 is auto initiated when selected control rod is withdrawn after the crew assumes responsibility for operation.

	TRIGGER / TIME	MALFUNCTION / EVENT	DESCRIPTION
	1	Auto / ZLOB1(5173)&&ZLCSWDR	When selected Control Rod 18-19 scram / '1A' Drywell Chiller trips after TD
	2	Auto / ZCCCHRB1	'1B' Drywell Chiller start initiates fault on 10Y201
	3	AUTO / ZRPS1SDN	RMS to Shutdown initiates LOOP / Drywell leak
	4	Auto / 0C0VAR(3)>1.68	Drywell pressure > 1.68# initiates RCIC Over speed trip
	5	Manual	Control Rods 34-23 and 58-35 SCRAM



E. EQUIPMENT REPORTS AND LEAD EVALUATOR (OR DESIGNEE) OPERATIONS

1. Scripted Activity Reports should be followed with adherence to Operations Communication standards of performance.
2. The T-200 procedure reference book should be used for familiarity of reports to aid in operator prompting and expected communications.
3. The Lead Evaluator (or designee) should be informed if any event is not reported as scripted due to lack of Operator request.
4. The Standard Equipment Operator Response Times are per Attachment 1

IX. QUANTITATIVE ATTRIBUTES

QUANTITATIVE ATTRIBUTES			
ATTRIBUTE	**MINIMUM NUMBER**	**ACTUAL NUMBER**	**DESCRIPTION (If Applicable)**
TOTAL MALFUNCTIONS	**5**	5	**See Assessment Items**
MALFUNCTIONS AFTER EOP	**1**	3	**See Assessment Items**
ABNORMAL EVENTS	**2**	3	ON-104, OT-104, OT-101, E10/20
MAJOR TRANSIENTS	**1**	2	LOOP, LOCA
EOPs USED BEYOND PRIMARY SCRAM RESPONSE	**1**	1	T-102
EOP CONTINGENCY PROCEDURES USED	**1**	2	T-112, T-111
CREW CRITICAL TASKS	**2**	4	T-111.4, T-112.1 **or** T-102.2, T-112.2, T-102.1
TECHNICAL SPECIFICATIONS EXERCISED	**1**	3	3.1.1.1, 3.5.1, 3.8.2.1
SCENARIO RUN TIME	**45 Minutes**	80 Minutes	

Enter the level of difficulty (LOD) of each scenario using a 1 – 5 (easy – difficult) rating scale (LOD > 1 and < 5 are acceptable) 3.0

X. CREW CRITICAL TASKS

A. Critical Tasks are based on the current Crew Critical Task List revision, NUREG 1021 Rev. 10 and TQ-AA-150 requirements.

1. **T-111.4** **Inhibit Automatic ADS**

K/A	218000	A2.06	4.2/4.3

Standard: Prevent automatic initiation of ADS prior to exceeding -129" reactor level and ADS logic being completed.

SAT/UNSAT

2.a **T-112.1** **Perform emergency blowdown per T-112.**

K/A	295031	EA1.07	3.7/3.7
K/A	295031	EA2.04	4.6/4.8

Standard: When RPV level drops below TAF, open 5 SRV's.

SAT/UNSAT

OR

2.b **T-102.2** **Perform emergency blowdown per T-112.**

K/A	295024	EA1.08	3.9/3.9
K/A	295024	EA2.04	3.9/3.9

Standard: When Suppression Pool Pressure cannot be maintained below the Pressure Suppression Pressure (PC/P-3) curve and before Drywell pressure exceeds 55 psig, open 5 SRVs.

SAT/UNSAT

3. **T-112.2** **Restore RPV level above -161 inches.**

K/A	295031	EA1.134.3/4.3
K/A	295031	EA2.044.6/4.8

Standard: When Reactor pressure permits, inject with all available low pressure ECCS, to restore RPV level above -161".

SAT/UNSAT

4. **T-102.1** **Spray the Drywell per T-225.**

K/A	295024	EA1.11	4.2/4.2
K/A	295028	EA1.01	3.8/3.9
K/A	295028	EA1.04	3.9/4.0

Standard: When Drywell temperature and pressure are on the SAFE side of curve PC/P-2, spray the Drywell before exceeding 340°F or 55 psig in the drywell. Drywell spray is commenced prior to performing a reactor blowdown when drywell spray subsystems are available to perform the required actions.

SAT/UNSAT

XI. ASSESSMENT OF CREW PERFORMANCE DURING CONDUCT OF THE DYNAMIC SIMULATOR EVALUATIONS:

A. Conduct the Simulator Evaluation Session per TQ-AA-155, Conduct of Simulator Training and Evaluation, Attachment 02, Evaluated Scenario Administration Checklist

B. Assessment of Crew and Individual performance shall be consistent with OP-AA-20, Conduct of Operations Process Description

C. Where possible record the time and position responsible for performance of each task or assessment item

D. Items not performed as expected **SHALL** be discussed in the post performance crew critique

E. During the performance of the evaluation, the Simulator Evaluators shall **MAINTAIN** notes of observations and information consistent with the timeline

F. Assessment items with the symbol indicate a time critical standard for performance

G. Assessment items with the symbol indicate a Probabilistic Risk Assessment (PRA) association with the task

H. The Simulator Operator will respond with scripted or proceduralized responses when requested by the MCR operators with Procedure completion times requested per **Attachment 1**

I. The Simulator Operator will also maintain a timeline and record of all reports and requests issued by the MCR personnel with response provided by the simulator operator using **Attachment 2**

J. Shaded items do not require assessment for ILT Evaluations. The CRS may be requested to complete the Shift ED forms and determine the EAL classification at the completion of the scenario.

EVENT – 1	**WITHDRAW CONTROL RODS TO RAISE POWER**
EVENT – 2	**CONTROL ROD SCRAMs (ABNORMAL)**

Simulator Operator Instructions

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

Verify **Trigger #** 1 automatically actuates for Control Rod 18-19 to scram when moved from position 08 to position 10, and '1A' Drywell Chiller to trip after a TD.

At time 5 min when FSSV or EO action requested to close the 47-1-01, 47-1-02, 47-1-03, and 47-1-05 valves for Control Rod 18-19
report: The 47-1-01, 47-1-02, 47-1-03, and 47-1-05 valves are closed for Control Rod 18-19

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 1 WITHDRAW CONTROL RODS TO RAISE POWER **EVENT – 2 CONTROL ROD SCRAMs (ABNORMAL)**	
	EVALUATORS NOTE: The following steps are directed in S73.1.A, Normal Operation Of The Reactor Manual Control System, for **each** Control Rod withdrawn. This SEG uses section 4.2 for single notch withdraw. Control Rod 18-19 will scram when moved to target position. Actions will be taken per ON-104, Control Rod Problems, for the scrammed control rod. **NOTE:** Control Rod movement requires a PEER CHECK prior to Control Rod movement.	
	Withdraw control rods IAW Control Rod move sheet and S73.1.A, Normal Operation Of The Reactor Manual Control System	RO
	[S73.1.A 4.2.1] **REVIEW** Attachment 1 **AND VERIFY** the control rod to be withdrawn is not channel distortion susceptible	RO
	[S73.1.A 4.2.2] **SELECT** next in-sequence Control Rods per rod withdraw sheet	RO
	[S73.1.A 4.2.3] **VERIFY** correct rod position on Four-Rod-Display	RO
	[S73.1.A 4.2.4] **ENSURE** drive water pressure is 255 to 265 psid, as indicated on PDI-046-1R602	RO
	[S73.1.A 4.2.5] **DEPRESS** WITHDRAWAL pushbutton.	RO
	[S73.1.A 4.2.6] **VERIFY** proper RDCS light sequence. • INSERT light lit and then extinguishes 0.6 sec. • WITHDRAWAL light lit and then extinguishes 1.5 sec. • SETTLE light lit and then extinguishes 6.1 sec.	RO
	[S73.1.A 4.2.8] **VERIFY** control rod has been withdrawn one notch position at the Four Rod Display	RO
	[S73.1.A 4.2.8, CR Move Sheet or ST-6-107-730-1] Perform Coupling Check on each fully withdrawn control rod. (not required)	N/A

EVENT – 1	**WITHDRAW CONTROL RODS TO RAISE POWER**
EVENT – 2	**CONTROL ROD SCRAMs (ABNORMAL)**

Simulator Operator Instructions

Inform Floor Instructor prior to each event trigger.

Respond to request for assistance as appropriate.

When Reactor Engineering notified
respond: We will look into predictors

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 1 WITHDRAW CONTROL RODS TO RAISE POWER **EVENT – 2 CONTROL ROD SCRAMs (ABNORMAL)**	
	Select next control rod in sequence and perform S73.1.A, step 4.2.3	RO
	Reference appropriate ARCs: • 108 F-3, ROD OUT BLOCK	RO
	Report alarm and notify SRO that control rod 18-19 scrammed	RO
	[ARC-MCR-108 F-4] Enter OT-104, Unexpected/Unexplained Positive or Negative Reactivity Insertion.	SRO
	[ARC-MCR-108 F-4] Enter ON-104, Control Rod Problems **(Abnormal)**	SRO
	[ON-104 2.3.1.1] ISOLATE the control rod by closing the following valves: • 047-1-01 • 047-1-02 • 047-1-03 • 047-1-05	RO
	[ON-104 Att#3] Determine Rx power < RWM Low Power Set Point and < 10%	RO
	[ON-104 Att#3] Determine this is the only rod in error	RO
	[ON-104 Att#3] Contact Reactor Engineering for recovery	SRO/PRO
	Consult Tech Spec 3.1.3.1.b.2.b isolate HCU	SRO
EVALUATORS NOTE: At Lead Evaluators direction, after the crew contacts Reactor Engineering for recovery plan, and when the control rod is isolated, move on to Event 3		

EVENT – 3 '1A' DRYWELL CHILLER TRIPS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

Verify **Trigger #** 1 automatically actuates for Control Rod 18-19 to scram when moved from position 08 to position 10, and '1A' Drywell Chiller to trip after a TD.

At time 5 min when directed to investigate '1A' Drywell Chiller trip,
report: There is no apparent reason for '1A' Drywell Chiller trip. It is not a load recycle.

At time 3 min when directed to ensure '1B' Drywell Chiller ready for start,
report: The '1B' Drywell Chiller pre-start checks are complete SAT.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 3 '1A' DRYWELL CHILLER TRIPS	
	EVALUATORS NOTE: When the running Drywell Chiller trips the crew is directed to review S87.10.A, Operation of the Trane Adaptiview Chiller Controls, to identify the cause of the chiller trip. If Drywell Cooling is restored promptly, drywell pressure will not rise significantly and the crew may not enter OT-101 on rising Drywell pressure.	
	Reference appropriate ARCs. • 004 A-1, A DRYWELL CHILLER TRIP/FAILED TO START	PRO
	Dispatch floor personnel to investigate '1A' Drywell Chiller Trip	PRO
	Recognize rising trend in Drywell temperature/pressure	Crew
	Enter OT-101 on rising Drywell pressure (as nec.)	SRO
	Establish Drywell Pressure as Critical Parameter	SRO
	Direct OT-101, Att. 3	SRO
	EVALUATORS NOTE: The operator may choose to investigate and attempt to restart the '1A' Drywell Chiller per S87.1.A. or imply the chiller may be on Load-Recycle. This SEG expects the operator, using S87.1.A, to start the standby '1B' Drywell Chiller.	
	Start '1B' Drywell Chiller IAW S87.1.A, Startup of Standby/Tripped Drywell Chiller Hard Card:	PRO
	[S87.1.A 2.0] - Place 1A-P161 AND 1B-P161 in stop (if attempting to restart "1A" chiller) - Place '1B' Drywell Chiller handswitch to start - Verify HV-87-102B, Chiller Discharge opens - Ensure 1A-P161 AND 1B-P161 in RUN	PRO
	[S87.1.A 5.0] After 50 seconds has elapsed VERIFY on MCR panel • Red "Compressor Motor" light illuminated • Motor amps rising	PRO
	Contact WWM for investigation of '1A' Drywell Chiller trip	Crew

EVENT – 4 LOSS OF DIVISION 3 SFGD 'Y' PANEL

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

Ensure **Trigger #** 2 automatically actuates when '1B' Drywell chiller started, to initiate loss of 10-Y201 safeguard power supply, and second and third control rod to scram.

At time 5 min when directed to investigate loss of 10-Y201 safeguard power supply, **report:** A fault has occurred inside the 'y' panel. If requested, there are no indications of a fire.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 4 LOSS OF DIVISION 3 SFGD 'Y' PANEL	
	Reference appropriate ARCs: • 002 F-2, REFUELING FLOOR LOW DELTA P/LOSS OF POWER/ INOP • 002 A-4, CONTROL ROOM EMER FRESH AIR ISO VLVS LOSS OF POWER • 003 E-1, NORTH STACK HI-HI RAD • 003 F-1, UNITS 1&2 SOUTH STACK HI-HI RAD • 003 G-1, REACTOR ENCLOSURE AREA HI RADIATION • 004 B-3, REAC ENCL LOW DELTA P/ LOSS OF POWER/INOP • 107 D-5, FWLCS TROUBLE • 111/112 A-5, 1A/B RECIRC PUMP MOTOR WINDINGS LOW FLOW • 112 G-2, 1A RWCU RECIRC PUMP TRIP • 112 K-5, FUEL POOL COOLING PUMPS TROUBLE	PRO/RO
	Recognize/report loss of SFGD 'Y" panel 10-Y201	PRO/SRO
	Dispatch floor personnel to investigate loss of SFGD 'Y" panel 10-Y201	PRO

	[ARC-MCR- 004 B-3]
	Initiate RE low DP secondary containment isolation per S76.8.B as follows:
	• Open HV-59-128A at 10C655
	• Arm and depress HS-76-178B at 10C681
	• Verify B SBTS initiation (00C681 0BV163 running)
	• Place HV-57-104 or HV-57-114 to AUTO (10C601)
	• Place HS-76-179B to RESET (10C681)
	• Place following handswitches to CLOSE (10C601)
	  • HV-59-102
	  • HV-59-129B
	  • HV-59-135
	  • HV-59-131
	• Return HS-76-179B to AUTO (10C681)
	• Return HV-57-104 or HV-57-114 to its initial position
	• Place following handswitches to AUTO (10C601)
	  • HV-59-102
	  • HV-59-129B
	  • HV-59-135
	  • HV-59-131
	• Verify PCIG operating normallyClose HV-59-128A
		PRO

EVENT – 4	LOSS OF DIVISION 3 SFGD 'Y' PANEL

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 4 LOSS OF DIVISION 3 SFGD 'Y' PANEL	
	[ARC-MCR 003 E-1/F-1] Refer to RMMS and verify North and South Stack radiation conditions	PRO
	[ARC-MCR-002 A-4] Determine cause of power loss to Control Room Fresh Air System to be loss of 'Y' panel power supply	PRO
	[ARC-MCR 003 E-1/F-1] Dispatch operator to C643 to verify North and South Stack radiation levels	PRO
	[ARC-MCR-112 G-2] Verify '1A' RWCU Pump tripped	RO/PRO
	[ARC-MCR-112 G-2] Notify Chemistry alternate reactor coolant conductivity sampling required PER TRM 4.4.4.c.1	PRO
	[ARC-MCR-112 K-5] Dispatch operator to local Fuel Pool Cooling panel C221	PRO
	CRS briefs crew on impact of loss of DIV 3 SFGD 'Y' panel	SRO
	Reference the following TS: 3.6.5.1.1, Reactor Enclosure Secondary Containment Integrity, Restore within 4 hours	SRO

EVENT – 5 SECOND and THIRD CONTROL RODS (34-23 and 58-35) SCRAMS

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	EVENT – 5 SECOND and THIRD CONTROL RODS (34-23 and 58-35) SCRAMS	
	Re-enter ON-104, Control Rod Problems	SRO
	[ON-104 2.3.1] **IF** more than one control rod moves without demand signal, **THEN** manually SCRAM the reactor and **PLACE** Mode Switch in SHUTDOWN and ANNOUNCE entry into T-101 or T-100, as applicable	RO
	Enter T-100 on Reactor SCRAM	SRO
	[T-101 RC-4] Place Mode Switch in SHUTDOWN	RO
	Report all control rods in	RO
	[T-101 RC-6] Insert SRMs/IRMs	RO
	EVALUATORS NOTE: Following the reactor scram as the crew is implementing T-101 this scenario will advance to the next malfunction - Loss Of Offsite Power (LOOP)	

EVENTS 6 LOSS OF OFFSITE POWER (Major)
EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

Ensure **Trigger# 3** automatically actuates when RMS taken to Shutdown, to initiate LOOP, and drywell leak.

Ensure **Trigger# 4** automatically actuates when drywell pressure rises to 1.68 psig to trip RCIC on overspeed.

If crew contacts TSO to report loss of Offsite Power,
respond: We are aware of the power loss and we are working to restore grid power as quickly as possible.

If requested for an estimation of power restoration,
respond: That it will take at least **one hour** to restore power.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
EVENTS 6 LOSS OF OFFSITE POWER (Major) **EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP**		
EVALUATOR NOTE: Provide Crew Update following LOOP "Unit 2 has scrammed and all Unit 2 Diesels are running." The following steps are performed as directed by E10/20, Loss Of Offsite Power.		
	Reference appropriate ARCs: (as required) • 125 E-1, 1 Unit Protection Relays Energized • 121 B-1, D13 Bus Undervoltage • 122 A-5, 1B RPS and UPS Static Inverter Trouble • 120 F-3, 101 Safeguard Bus Undervoltage • 120 F-4, 201 Safeguard Bus Undervoltage	PRO/RO
	Recognizes/Report Loss of Offsite Power	Crew
	[ARC-MCR 120 F-3] Enter E-10/20, Loss of Offsite Power	SRO
	Enter T-101 on RPV level <12.5"	SRO
	[T-101 RC-5] Verify Isolations are complete for <12.5"	PRO
	[E10/20 1.1] Verify loss of voltage for 10 STA and 20 STA STARTUP Buses	SRO/PRO
	[E10/20 2.2] **VERIFY** Diesel Generators running and Safeguard Switchgear energized	RO/PRO
	[E10/20 2.7.1] **MONITOR** plant parameters using E10/20 Att. 1 to determine available instrumentation, as required.	PRO/RO
	Recognize failure of D13 D/G to auto start	PRO
	Manually start D13 EDG **(Malfunction)**	PRO
	Recognize/report D13 D/G Output Breaker closure to restore D13 Bus	PRO
	[E10/20 2.5] Ensure closure of MSIVs	PRO/RO
	[E10/20 2.7.5] **VERIFY** ESW Pumps running	PRO

EVENTS 6 LOSS OF OFFSITE POWER (Major)
EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
EVENTS 6 LOSS OF OFFSITE POWER (Major) **EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP**		
	Contact TSO for Offsite Power restoration	SRO/PRO
	[T-101 RC/P-2] Direct PRO to control RPV pressure with SRVs 900-1000 psig	SRO
	Cycle SRVs to control pressure 900-1000 psig	PRO
	[T-101 RC/L-7] Ensure RCIC start and injection on RPV Level <-38"	PRO
	Recognize HPCI fails to start at -38" or 1.68psig drywell pressure and dispatch personnel to investigate	PRO
	Direct RO/PRO to control RPV level with RCIC with level band	SRO
	Assigns Critical Parameter of RPV level to RO/PRO	SRO
	Report rising drywell pressure	RO/PRO
	Enter and execute OT-101, Drywell High Pressure, as drywell pressure rises	SRO
	[OT-101 3.1] **ESTABLISH** Drywell pressure as a Critical Parameter	PRO
	Enter T-102, Primary Containment Control, and Re-enter T-101, Reactor Control, on 1.68# Drywell Pressure	SRO
	[T-102 PC/P-7] **DIRECT** before Supp Pool pressure reaches 7.5 psig Spray the **Suppression Pool** per T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation	SRO
	[T-102 PC/P-7] Before Supp Pool pressure reaches 7.5 psig Spray the **Suppression Pool** per T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation	PRO
	[T-101RC/L-12] Enter T-111 on lowering RPV level	SRO

EVENTS 6 LOSS OF OFFSITE POWER (Major)
EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
EVENTS 6 LOSS OF OFFSITE POWER (Major) **EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP**		
	[T-111 LR-5, T-101RC/L-11] Direct to inhibit Auto ADS	SRO
	Inhibit Auto ADS (if not already inhibited for T-101) **(Critical Task)**	PRO
	[T-111 LR-6] Start C & D RHR Pumps	PRO
	Verify Diesel load <1000 KW before starting RHR Pump on assoc. Bus	PRO
	[T-101 RC/L-10 OR T-111 LR-7] Start SLC Pumps	RO
	Recognize HPCI Aux oil pump Trip and dispatch personnel to investigate.	PRO
	Recognize RCIC over speed and dispatch personnel to investigate.	Crew
	Restart CRD and dispatch EO to support T-240, Maximizing CRD Flow After Shutdown During Emergency Conditions	RO
	[T-240 4.2] Fully **OPEN** HV-46-1F003, "Drive Water Pressure Control" (DRIVE WATER PRESSURE), at 10C603 (Main Control Room).	RO
	[T-240 4.3] **OPEN** FV-C-46-1F002A(B), "Flow Control," at 10C603 (Main Control Room) using FC-46-1R600, "Rod Drive Flow Controller" (FL), in "MANUAL" to maximize CRD flow, while maintaining greater than 1,200 psig as indicated on PI-46-108A(B), "CRD Pump Discharge" (252-T6-200).	RO
	[T-240 4.4] **OPEN** 46-1F045, "CRD Pumps Suction Filter Bypass Valve"	RO
	[T-240 4.5] If additional CRD flow required place second CRD Pump in Service	RO
	[T-225 4.2.3] [CAUTION E10/20 PUMP STARTS FOR BUS LOADING] **IF** RHR pump not running **THEN** start 1A(B)P202 "RHR Pump"	PRO
	[T-225 4.2.4] **ENSURE** the following valves open: • HV-51-1F047A(B), "1A RHR Htx Shell Side Inlet Vlv" (INLET) • HV-51-1F003A(B), "1A RHR Htx Shell Side Outlet Vlv" (OUTLET) • HV-C-51-1F048A(B), "1A RHR Htx Shell Side Bypass Vlv" (HEAT EXCH BYPASS)	PRO

EVENTS 6 LOSS OF OFFSITE POWER (Major)
EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

At time 10 min after FSSV or EO action requested for SE-10 Floor Actions
Load **All SE-10 Floor Actions with Time Delays Scenario** and
report: The status of individual resets as requested **OR** when all resets are timed out
report: All SE-10 Floor Actions are complete

When RPV level is below -120",
DELETE malfunction **MRC466** and
report: Unit 1 RCIC overspeed has been reset.

At time 10 min after FSSV or EO action requested for HPCI AOP reset
report: We have contacted Electrical Maintenance for support to reset HPCI AOP breaker.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
EVENTS 6 LOSS OF OFFSITE POWER (Major) **EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP**		
EVALUATORS NOTE: The following steps are performed as directed by T-225, Startup and Shutdown of Suppression Pool (4.2) and Drywell Spray Operation (4.5).		
	[T-225 4.2.5] **OPEN** HV-51-1F024A(B), "1A RHR Pp Full Flow Test Return Vlv" (SUPP POOL CLG A **AND OBTAIN** flow of 8,000 to 8,500 gpm as indicated on FI-51-1R603A, FL.	PRO
	[T-225 4.2.6] **OPEN** HV-51-1F027A(B), "1A RHR Supp Pool Spray Line PCIV" (SUPP POOL SPRAY).	PRO
	[T-225 4.2.8] **PLACE** RHR Service Water Pump for RHR Heat Exchanger to be used in service per S12.1.A, RHR Service Water System Startup.	PRO
EVALUATORS NOTE: The following steps are performed as directed by S12.1.A, RHR Service Water System Startup.		
	[S12.1.A 4.1.4/5 or App1 1.3] • **OPEN** HV-51-1F014A(B), HEAT EXCHANGER INLET. • Throttle **OPEN** HV-51-1F068A(B) for 18 to 20 seconds.	PRO
	[S12.1.A 4.1.6(7) or App1 1.4] **VERIFY** PI-51-105A-1(B), HX DISCH, indicates system static pressure greater than or equal to 15 psig.	PRO
	[S12.1.A 4.1.8 or App1 1.4] **IF** the HI RAD AND/OR HI Pump Discharge pressure trips need to be bypassed **AND** the required actions of ODCM Part 1 Control 3.1.1 have been met for the INOPERABLE RHRSW Radiation Monitor, **THEN PLACE** HSS-12-002A(B), PUMP TRIP BYPASS, in "BYPASS."	PRO
	[S12.1.A 4.2.1.1 or App1 1.6] **IF** 'A' Loop pump (0A(C)-P506) is to be placed in service, **THEN ENSURE** 0A-V543 OR 0C-V543, Spray Pond Pump Room Fans, in "RUN" at 00C681.	PRO
	[S12.1.A 4.2.1.2 or App1 1.7] **IF** 'B' Loop pump (0B(D)-P506) is to be placed in service, **THEN ENSURE** 0B-V543 OR 0D-V543, Spray Pond Pump Room Fans, in "RUN" at 00C681.	PRO

EVENTS 6 LOSS OF OFFSITE POWER (Major)
EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
EVENTS 6 LOSS OF OFFSITE POWER (Major) **EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP**		
	[S12.1.A 4.2.2 or App1 1.8] **START** 0A(B),(C,D)P506, RHRSW PUMP.	PRO
	[S12.1.A 4.2.3 or App1 1.9] **THROTTLE** HV-51-1F068A(B) to the maximum obtainable position without exceeding 11,000 gpm on FI-51-*R602A(B) while maintaining pump disch pressure (PI-12-001A-1(B) between 75 psig to 85 psig.	PRO
EVALUATORS NOTE: The following steps are from T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation, as directed by T-102, Primary Containment Control, and SE-10, LOCA steps are performed at the Safeguards Panel (Diesel Panel).		
	[T-225 4.2.9] **CLOSE** HV-C-51-1F048A(B), "1A RHR Htx Shell Side Bypass Vlv" (HEAT EXCH BYPASS).	PRO
	[T-225 4.2.10] **IF** more spray flow is required, **THEN REDUCE** flow through Full Flow Test line by throttling closed HV-51-1F024A(B), "1A RHR Pp Full Flow Test Return Vlv" (SUPP POOL CLG A.	PRO
	Re-open HV-49-112 RCIC trip throttle valve after overspeed reset from field **(Malfunction)**	RO/PRO
	Enter SE-10, LOCA	SRO
	[SE-10 3.1] **PLACE** the following to "CLOSE" • 52-20224/CS, "D*24 Safeguard L.C. D*24-G-D MCC Bkr" (SAFEGUARDS B), on *BC661 • 52-20124/CS, "D*14 Safeguard L.C. D*14-G-D MCC Bkr" (SAFEGUARDS A), on *AC661.	RO
	[SE-10 3.2] **PLACE** to "RESET": • 43-22422/CS, "Div. IV Non SFGD Instr. Panel" (INST AC 202 CONTROL PNL), on *DC661.	RO

EVENTS 6 LOSS OF OFFSITE POWER (Major)
EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

At time 10 min after FSSV or EO action requested for SE-10 Floor Actions
Load **All SE-10 Floor Actions with Time Delays Scenario** and
report: The status of individual resets as requested **OR** when all resets are timed out
report: All SE-10 Floor Actions are complete

When RPV level is below -120",
DELETE malfunction **MRC466** and
report: Unit 1 RCIC overspeed has been reset.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
EVENTS 6 LOSS OF OFFSITE POWER (Major) **EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP**		
	Direct SE-10 Floor Actions	Crew
	[SE-10 4.3] Maintain ECCS for injection **IF** Low Pressure ECCS is not required to restore RPV level, **THEN ALIGN** per SSV direction.	SRO
	Re-start of '1A' CRD Pump following LOCA and maximize using T-240	RO
	Restart '1A' and '1C' SLC Pumps following LOCA	RO
	Trend RPV Level to TAF	RO/PRO
	Report RPV Level below TAF	RO/PRO
	Enter T-112, Emergency Blowdown	SRO
	DIRECT [T-112 EB-12] Open all 5 ADS valves	SRO
	PERFORM [T-112 EB-12] Open all 5 ADS valves **(Critical Task)**	RO/PRO
	[T-111 LR-20] Maximize RPV injection using all available systems subsystems and alt subsystems EXCEEDING pump NPSH and vortex limits if necessary.	PRO/RO
	Restore RPV Level restored above TAF **(Critical Task)**	RO/PRO
	Exit T-111 and re-enter T-101 at RC/L-1	SRO
	Restore RPV Level to +12.5" to 54" with ECCS	RO/PRO
	DIRECT [T-102 PC/P-9] Spray the **Drywell** per T-225, Startup and Shutdown of Suppression Pool and Drywell Spray Operation	SRO
	[T-225 4.5.1] **ENSURE** HV-51-1F004A(B), "1A(B) RHR Pump Suction PCIV" (SUCTION A(B)), open	PRO
	[T-225 4.5.2] **ENSURE** the following valves closed: • HV-51-1F006A(B), "1A(B) RHR Pp S/D Clg Suct Intertie Vlv" • HV-51-1F015A(B), "1A(B) Shutdown Clg Injection PCIV" HV-51-1F016A(B), "1A(B) RHR Cntmt Spray Line Outboard PCIV" • HV-51-1F017A(B), "1A(B) RHR LPCI Inj PCIV"	PRO

EVENTS 6 LOSS OF OFFSITE POWER (Major)
EVENTS 7 – 10 D13 EDG FAILS TO AUTO START / RCIC OVERSPEED TRIP

Simulator Operator Instructions:

Inform Floor Instructor prior to each event trigger.

Respond as appropriate for support.

TIME	ASSESSMENT ITEMS AND TASK PERFORMANCE	POSITION
	[T-225 4.5.3] **IF** RHR pump not running **THEN START** 1A(B)P202 "RHR Pump."	PRO
	[T-225 4.5.4] **ENSURE** the following valves open: • HV-51-1F047A(B), "1A(B) RHR Htx Shell Side Inlet Vlv" (INLET) • HV-51-1F003A(B), "1A(B) RHR Htx Shell Side Outlet Vlv" (OUTLET) • HV-C-51-1F048A(B), "1A(B) RHR Htx Shell Side Bypass Vlv" (HEAT EXCH BYPASS)	PRO
	[T-225 4.5.5] **TRIP** Reactor Recirc Pumps.	PRO/RO
	[T-225 4.5.6] **REMOVE** Drywell Cooling Fans from service by placing all 16 Drywell Cooler Fan switches to "OFF."	PRO/RO
	[T-225 4.5.7] **IF** Drywell High Pressure **AND** LOCA signals are present, **THEN GO TO** T-225 step 4.5.11.	PRO
	[T-225 4.5.11] **OPEN** HV-51-1F024A(B), "1A(B) RHR Pp Full Flow Test Return Vlv" (SUPP POOL CLG A(B)), **AND OBTAIN** flow of 9,250 to 10,500 gpm as indicated on FI-51-1R603A(B), FL.	PRO
	[T-225 4.5.12] **OPEN** only one loop HV-51-1F021A(B), "1A(B) RHR Cntmt Spray Line Inboard PCIV" (INBOARD).	PRO
	[T-225 4.5.13] **REQUEST** SSV verify drywell temperature **AND** drywell pressure are on SAFE side of Drywell Spray Initiation Limit Curve per T-102, Primary Containment Control **OR** SAMP-1, RPV and Primary Containment Flooding Control.	PRO/SRO
	[T-225 4.5.14] Throttle **OPEN** only one loop HV-51-1F016A(B), "1A(B) RHR Cntmt Spray Line Outboard PCIV" (OUTBOARD) to initiate spray **AND OBSERVE** raising flowrate as indicated on FI-51-1R603A(B), FL.	PRO
EVALUATORS NOTE: The scenario may be terminated when RPV level is restored within band and Drywell Spray in service. After the scenario is terminated, direct the SRO to make the highest EAL classification. (as required)		
	Highest EAL CLASSIFICATION at completion of scenario	
	SRO declares an Alert **(FA1)** due to Threshold(s): **RC-3.1** Drywell pressure > 1.68 psig **AND** **RC-3.2** Drywell pressure rise due to RCS leakage	SRO

Attachment 1
Simulator Operator Response Times

Procedure	Performance	Response Time (Minutes)
T-209	Injection from the Standby Liquid Control Storage Tank with the RCIC System	45
T-212	Bypassing SQUIB Valves for SLC Injection	19
T-215	De-energization of Scram Solenoids	7
T-216	Manual Isolation and Vent of Scram Air Header	7
T-217	RPS/ARI Reset and Backup Method of Draining Scram Discharge Volume	17
T-219	Maximizing CRD Cooling Water Header Flow during ATWS Conditions	23
T-221	MSIV Isolation Bypass Procedure	11
T-225	Startup and Shutdown of Suppression Pool and Drywell Spray Operations	8
T-240	Maximizing CRD flow after Shutdown During Emergency Conditions	8
T-245	RPV Injection from RHR S/D Cooling	12
T-248	Injection from SLC Test Tank to RPV	15
T-251	Establish a HPCI Injection flow Path VIA Feedwater Only	6
T-270	Terminate and Prevent Injection into the RPV	7
T-290	Instrumentation Available for T-103 SAMP-2	5
S46.7.A (4.2.1)	Control Rod Drive Hydraulic System Operation Following Reactor Scram (Securing CRD flow to the Reactor - Close 46-1F060, CRD Water Pressure Control Station Inlet Valve)	7
SE-10-1 Resets and Floor action	Breaker Reset Following LOCA (Also reset ARMs, RHRSW Rad Monitor and RDCS)	10

Attachment 2
Communications Log

CREW: _____

DATE: _____ LSEG: 4056E

START TIME: _____ STOP TIME: _____

SM: _____ RO: _____ WCS: _____

CRS: _____ PRO: _____ FSSV: _____

TIME	PERSON CALLING	PERSON BEING CALLED	COMMUNICATION / REQUEST	CALL BACK TIME

XII. CREW PREBRIEF INSTRUCTIONS

- Unit 1 is in OPCON 2 at 6% power
- Unit 2 is in OPCON 1 at 100% power

Specific Plant Conditions are as Follows:

- Reactor Startup in progress per GP-2 complete to step _3.4.35_.
- Two Condensate Pumps in service
- RFPs maintaining RPV level
- Main Turbine BPVs controlling Rx pressure
- HPCI and RCIC are operable
- Offgas Recombiner is in service
- Main Turbine Chest warmed
- The OOM has been contacted and Start-Up Review is in progress in preparation for going to RUN

Inoperable/Out of Service Equipment and Estimated Time of Return (ETR):

- None

Restrictions on Plant Operations:

- For this scenario there will be No RMSRO available

Planned Evolutions:

- Continue with startup per GP-2 raising power until 2 Bypass Valves are open and make provisions to enter OPCON 1
- Shift Managers walkdown for OPCON 1 scheduled in 2 hours.

Documents Provided:

- GP-2, Normal Plant Startup, completed to step 3.4.35.
- Rod Move Sheet with next control rod 18-43 to be withdrawn to position 12
- S73.1.A

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LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

REACTIVATION OF SRO LICENSE (SRO)

JPM Number: LOJPM6710

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	11/17/15 Date
Validated By:	SME or Instructor	11/17/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

✓ 1. Task description and number, JPM description and number are identified.

✓ 2. Knowledge and Abilities (K/A) references are included.

✓ 3. Performance location specified. (in-plant, control room, simulator, or other)

✓ 4. Initial setup conditions are identified.

✓ 5. Initiating cues (and terminating cues if required) are properly identified.

✓ 6. Task standards identified and verified by SME review.

✓ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

✓ 8. If an alternate path is used, the task standard contains criteria for successful completion.

✓ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure OP-AA-105-102 Rev: 11
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

✓ 10. Verify cues both verbal and visual are free of conflict.

✓ 11. Verify performance time is accurate

N/A 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

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

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	Rev 000 for 2014 ILT class (2016 test)	6/6/2015

IV. TASK STANDARD:

Candidate returns OP-AA-105-102, Attachment 2, without Shift Manager's signature and documents failure to meet the Active License requirements per calendar quarter, and the required Plant Tour signature is missing.

V. JPM SETUP INSTRUCTIONS

1. Fill out OP-AA-105-102, Attachment 2 up to, but not including, Shift Manager's Approval for a fictitious SRO License holder.
2. Sign off Tour, in section 5.0, as Bob Equipt. Operator
3. In "Hours on Shift" table, section 5.0
   - Enter 2 shifts of 12 hrs. as Unit SSV in ONE calendar quarter
   - Enter 3 shifts of 8 hrs. as Unit SSV in a SEPARATE calendar quarter than the first

VI. INITIAL CONDITIONS:

1. An SRO is in the process of license re-activation
2. OP-AA-105-102, Attachment 2, Reactivation of License Log, is filled out to Shift Manager Reviewed By.

VII. INITIATING CUE:

Today is June 31, 2015.

You are directed you to perform a Shift Manager review of OP-AA-105-102, Attachment 2 for the SRO license and document the results on the this Briefing Sheet. Complete the review and sign the attachment, if appropriate, or list all gaps that require resolution before the form can be signed

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATOR: Provide the following to the Examinee: • Procedure OP-AA-105-102, NRC Active License Maintenance, and • Marked-up OP-AA-105-102, Attachment 2					
	1. Candidate reviews OP-AA-105-102, Attachment 2	Review OP-AA-105-102, Attachment 2			
	2. Verify License Holder's Name and employee number documented	Name and employee number documented			
	3. Verify signatures current for Requal training, medical / respiratory protection, and compliance with restrictions on current NRC license completed.	Signatures obtained from OTM, Training Coordinator and Operations Support Manager for required sections.			
*	4. Required Plant Tour completed	Candidate notes on attachment 2, section 5.0, the Active License Signature" Is signed by an Equipment operator			
*	5. Verify Hours on Shift in compliance with requirements for reactivation of license.	Candidate notes following in section 5.0: • 24 hrs. listed in the first calendar quarter, and • 24 hrs. listed in the next calendar quarter, with Determines licensee has ONLY 24 hrs. toward the required 40 hrs. per calendar quarter			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	6. OP-AA-105-102, Attachment 2 **NOT** signed-off.	OP-AA-105-102, Attachment 2 **NOT** signed-off.			
	7. Shift Operations Superintendent may be notified the individual failed to meet the "Active License" requirements.	SOS informed of results that the license CANNOT be re-activated due to insufficient hours on-shift, and plant tour has not been completed.			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

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JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: REACTIVATION OF SRO LICENSE

JPM Number: LOJPM6710 **Revision Number:** 000

Task Number and Title: 3420160302, Apply administrative procedure requirements for work controls

K/A Number and Importance: 2.1.4 3.8

Safety Function (1-9) _____

Admin Category (A1-4) __1__

Level of Difficulty (1-5) __2__

Suggested Testing Environment: Classroom

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

Reference(s): OP-AA-105-102, NRC Active License Maintenance, Rev 11

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: _15_ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. An SRO is in the process of license re-activation
2. OP-AA-105-102, Attachment 2, Reactivation of License Log, is filled out to Shift Manager Reviewed By.

INITIATING CUE:

You are directed you to perform a Shift Manager review of OP-AA-105-102, Attachment 2 for the SRO license and document the results on the this Briefing Sheet. Complete the review and sign the attachment, if appropriate, or list all gaps that require resolution before the form can be signed.

REVIEW of Attachment 2 "Reactivation Of License Log:"

_____

_____

_____

_____

_____

_____

_____

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

ERP CLASSIFICATION AND REPORTING (TIME CRITICAL)

JPM Number: LOJPM3124

REVISION NUMBER: 000

DATE: 1/6/16

Developed By:	Instructor	12/16/15 Date
Validated By:	SME or Instructor	12/16/15 Date
Reviewed By:	Operations Representative	1-6-16 Date
Reviewed By:	A. W. HIGHTOWER EP Representative	12/16/15 Date
Approved By:	Training Department	1/6/16 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

DAB	1.	Task description and number, JPM description and number are identified.
TAB	2.	Knowledge and Abilities (K/A) references are included.
TAB	3.	Performance location specified. (in-plant, control room, simulator, or other)
DAB	4.	Initial setup conditions are identified.
DAB	5.	Initiating cues (and terminating cues if required) are properly identified.
DAB	6.	Task standards identified and verified by SME review.
TAB	7.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
N/A TAB	8.	If an alternate path is used, the task standard contains criteria for successful completion.
DAB	9.	Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure EP-AA-1008 Addendum 3	Rev: 000
Procedure EP-MA-114-100-F-01	Rev: O
Procedure EP-AA-112-100-F-01	Rev: U
Procedure EP-AA-111-F-11	Rev: A
Procedure EPA 183	Rev: 003

DAB	10.	Verify cues both verbal and visual are free of conflict.
DAB	11.	Verify performance time is accurate
N/A TAB	12.	If the JPM cannot be performed as written with proper responses, then revise the JPM.
DAB	13.	When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	Rev 000 initial issue	11/12/15

IV. TASK STANDARD:

1. General Site Area Emergency is declared within 15 minutes of the candidate beginning the classification.

2. Notification form completed (including PAR) and provided to Shift Communicator within 15 minutes of declaring the general Emergency.

V. SIMULATOR SETUP

☐ **Use existing IC Met Data**

☒ **Insert the following Met Data values:**

RZZ002 MET Data Wind Direction (0-360) DEG AZIMUTH Target Value = 310 °
RZZ003 MET Data Wind Speed (0-100) MPH Target Value = 20 mph

VI. INITIAL CONDITIONS: *(If applicable)*

LGS Units 1 and 2 were at 100% power when a storm with strong winds up to 100 mph resulting in the following:

1. Damage in the 500KV yard, and fire resulting in a loss of 205 S/U breaker.

2. Impairment of the Unit 2 Diesel Generator Enclosures.

3. Unit 2 Reactor scrams, but power remains 60%

4. A RCS leak has resulted in the following Unit 2 Drywell conditions:

   a. Drywell pressure increase to 35 psig

   b. Drywell Post-LOCA radiation monitors reading 440 R/Hr and steady

5. Unit 2 Reactor level is -170" and steady.

6. Unit 2 Reactor pressure is 220 psig and dropping quickly.

7. As operators were preparing to perform T-102 actions, Drywell pressure dropped to 20 psig and is continuing to lower.

8. RM-11 indicates rising rad levels on North Stack rad monitors

VII. INITIATING CUES: This Task is Time Critical

This JPM will start when you tell the evaluator that you are aware of task conditions and are ready to begin.

No prior classifications or notifications have been made. You are to perform the duties as the Shift Manager and make the highest classification based on the given plant conditions and perform all required notifications. All communications should indicate a drill. If this JPM is administered in a classroom setting then write all communications on the back of the briefing sheet.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time:_____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	EVALUATORS NOTE: JPM requires the Emergency Director's Binder **OR** copies of the following: • EP-MA-114-100-F-01, State/Local Event Notification Form • EP-AA-114-F-02, BWR Release in Progress Determination Guideline • EP-AA-112-100-F-01, Shift Emergency Director Checklist • EP-AA-111-F-11, Limerick PAR Flowchart • EP-AA-1008, Hot Matrix • EPA 183, LGS Simplified EP Classification Sequence **IF JPM is NOT conducted in Simulator: Provide a screen shot of "Meteorological 15 Minute Average Point Data".**				
	1. REFER to the appropriate LGS EAL Matrix	N/A	N/A		
	2. Call for Shift Communicator to report to MCR	Shift Communicator called to report to MCR			
	3. Identify the operating MODE for the affected Unit(s) prior to the abnormal condition, and obtain appropriate Matrix.	Matrix obtained: ☒ HOT ☐ COLD			
	4. Review the initiating conditions applicable to the operating MODE.	Use EAL Matrix to classify event	N/A		
*	5. DECLARE the event	Event Declared: ☐ UNUSUAL EVENT ☐ ALERT ☐ SITE AREA EMERGENCY ☒ GENERAL EMERGENCY Declared 15 minutes of the JPM START TIME: DECLARATION TIME:			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	6. Direct Shift Communicator to activate the ERO or make management only notifications	Everbridge activation: ☒ Scenario 1: Actual event report to facility ☐ Scenario 2: Management notification only ☐ Scenario 3: Actual event report to facility alternate location			
	7. Complete the Event Notification form	At the completion of the JPM the Event Notification Form will be evaluated against the JPM standard located below.	N/A		
*	8. Direct Shift Communicator to perform state and local notifications	Shift Communicator notified to make notifications **within 15** minutes of DECLARATION TIME. Declaration Time: _____ Notification Initiated Time:_____ NOTE: the expectation is notification is initiated **within 9** (nine)minutes of declaration time. Notification times between 9-15 minutes constitutes a pass with comment.			
	CUE: When form has been completed and Shift Communicator informed to process form: "You have met the termination criteria for this JPM"	N/A	N/A		
	NOTE: The following steps are performed by the evaluator following the student providing the Notification form to the evaluator.				

	ELEMENT	STANDARDS	SAT	UNSAT	COMMENT NUMBER
	EP-MA-114-100-F-01, STATE/LOCAL EVENT NOTIFICATION FORM				
	9. UTILITY MESSAGE NO.	"1" or equivalent entered			
	10. VERIFIED WITH	N/A	N/A		
	11. EMERGENCY DIRECTOR APPROVAL	Signature entered			
*	12. CALL STATUS:	Call Status marked ☒ THIS IS A DRILL			
*	13. AFFECTED STATION:	Affected Station marked for ☒ LIMERICK			
*	14. AFFECTED UNIT(S):	Unit(s) marked ☐ ONE ☒ TWO			
*	15. CLASSIFICATION:	Classification marked ☐ UNUSUAL EVENT ☐ ALERT ☐ SITE AREA EMERGENCY ☒ GENERAL EMERGENCY			
*	16. DECLARED AT:	Time entered Date entered			
	17. THIS REPRESENTS A/AN:	This Represents marked ☒ INITIAL DECLARATION ☐ ESCALATION ☐ NO CHANGE			
*	18. EMERGENCY ACTION LEVEL (EAL) NUMBER:	"FG1" entered			

	ELEMENT	STANDARDS	SAT	UNSAT	COMMENT NUMBER
*	19. A BRIEF NON-TECHNICAL DESCRIPTION OF THE EVENT:	☐ A- Abnormal Rad Levels/ Radiological Effluent ☒ B- Fission Product Barrier Degradation ☐ C- System Malfunction ☐ D- Hazards and Other Conditions Affecting Plant Safety ☐ E- Independent Spent Fuel Storage Installation Malfunction ☐ F- Cold Shutdown/Refueling System Malfunctions			
*	20. RADIOLOGICAL RELEASE STATUS:	Release Status marked ☐ NO RELEASE ☒ AIRBORNE ☐ LIQUID ☐ RELEASE TERMINATED			
*	21. METEOROLOGY DATA: Cue: Provide MET Attachment only if in location other than simulator	**Simulator Values** match displayed Tower 1 175' using 15 minute average values: Wind Direction: _310_(degrees) Wind Speed: __20___(MPH) **Attachment Values :** Wind Direction: __310__(degrees) Wind Speed: ____20__(MPH)			
*	22. PROTECTIVE ACTION RECOMMENDATION (a <u>or</u> b) :	PAR Recommendation marked ☐ NOT Applicable ☒ PAR Recommendation			

	ELEMENT	STANDARDS	SAT	UNSAT	COMMENT NUMBER
	NOTE: IF PAR RECOMMENDATION is required the following items should be marked: [S / E] 360 DEGREES FROM **0** MILES (SITE BOUNDARY) TO **2** MILES **AND** THE FOLLOWING SECTORS FROM **2** MILES TO **5** MILES: [S / E] N [S / E] E [S / E] S [S / E] W [S / E] NNE [S / E] ESE [S / E] SSW [S / E] WNW [S / E] NE [S / E] SE [S / E] SW [S / E] NW [S / E] ENE [S / E] SSE [S / E] WSW [S / E] NNW **AND** THE FOLLOWING SECTORS FROM **5** MILES TO **10** MILES: [S / E] N [S / E] E [S / E] S [S / E] W [S / E] NNE [S / E] ESE [S / E] SSW [S / E] WNW [S / E] NE [S / E] SE [S / E] SW [S / E] NW [S / E] ENE [S / E] SSE [S / E] WSW [S / E] NNW **AND** Potassium Iodide (KI) be administered to the general public in accordance with state procedures and advise the remainder of the EPZ to Monitor and Prepare. **AND** This Protective Action Recommendation **[IS] [IS NOT]** the result of a Rapidly Progressing Severe Accident				
*	23. UTILITY PAR recommendations	Correct PAR Recommendation marked including required sectors			
	1. CONCLUSION	Conclusion marked ☒ THIS IS A DRILL (Critical that at least one of the two status blocks on the page is marked correctly and no contradictory info is marked. If contradictory info is marked, then the incorrect step is UNSAT. If one block is blank and the other is correct, then the blank block is N/A)			

JPM Stop Time: _____

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: ERP CLASSIFICATION AND REPORTING (TIME CRITICAL)

JPM Number: LOJPM3124 **Revision Number:** 000

Task Number and Title: TPO3440070302, Classify Emergency Events Requiring Emergency Plan Implementation

K/A Number and Importance: Generic 2.4.41 Importance 4.6

Safety Function (1-9) N/A .

Admin Category (A1-4) A4 Emergency Plan .

Level of Difficulty (1-5) 3 .

Suggested Testing Environment: Simulator

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

Reference(s):
EP-AA-1008 Addendum 3, LGS EMERGENCY ACTION LEVELS FOR LGS, Rev. 000
EP-MA-114-100-F-01, STATE/LOCAL EVENT NOTIFICATION FORM, Rev. O
EP-AA-112-100-F-01, SHIFT EMERGENCY DIRECTOR CHECKLIST, Rev U
EP-AA-111-F-11, Limerick PAR Flowchart, Rev. A
EPA 183, LGS Simplified EP Classification Sequence, Rev. 003

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: 27 minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITION:

LGS Units 1 and 2 were at 100% power when a storm with strong winds up to 100 mph resulting in the following:

1. Damage in the 500KV yard, and fire resulting in a loss of 205 S/U breaker.
2. Impairment of the Unit 2 Diesel Generator Enclosures.
3. Unit 2 Reactor scrams, but power remains 60%
4. A RCS leak has resulted in the following Unit 2 Drywell conditions:
   a. Drywell pressure increase to 35 psig
   b. Drywell Post-LOCA radiation monitors reading 440 R/Hr and steady
5. Unit 2 Reactor level is -170" and steady.
6. Unit 2 Reactor pressure is 220 psig and dropping quickly.
7. As operators were preparing to perform T-102 actions, Drywell pressure dropped to 20 psig and is continuing to lower.
8. RM-11 indicates rising rad levels on North Stack rad monitors

INITIATING CUES: <u>This Task is Time Critical</u>

This JPM will start when you tell the evaluator that you are aware of task conditions and are ready to begin.

No prior classifications or notifications have been made. You are to perform the duties as the Shift Manager and make the highest classification based on the given plant conditions and perform all required notifications. All communications should indicate a drill. If this JPM is administered in a classroom setting then write all communications on the back of the briefing sheet.

917 METEOROLOGICAL 15 MINUTE AVERAGE POINT DATA

	PID	SENSOR	DESCRIPTION	VALUE	EU
TOWER 1	**T1DTULFA**	**T1.SP.U**	TOWER 1 270 FT WIND SPEED	16	**MPH**
	T1SPIFA	T1.SP.I	TOWER 1 175 FT WIND SPEED	20	MPH
	T12SPLFA	T1.SP.L	TOWER 1 30 FT WIND SPEED	20.5	MPH
	T1DRUFA	T1.DR.U	TOWER 1 270 FT WIND DIRECTION	310	DEG AZ
	T1DRIFA	T1.DR.I	TOWER 1 175 FT WIND DIRECTION	310	DEG AZ
	T1DRLFA	T1.DR.L	TOWER 1 30 FT WIND DIRECTION	309	DEG AZ
	T1DTULFA	T1.DT.U-L	TOWER 1 266 - 26 FT DELTA TEMP	-0.3	DEG F
	T1DTILFA	T1.DT.I-L	TOWER 1 171 - 26 FT DELTA TEMP	0.4	DEG F
	T1ATLFA	T1.AT.L	TOWER 1 26 FT AMBIENT TEMP	85.2	DEG F
	T1DPLFA	T1.DP.L	TOWER 1 26 FT DEW POINT	45.00	DEG F
	T1RNFA	T1.RN	TOWER 1 PRECIPITATION	0.1	INCHES
TOWER 2	T2DTULFA	T2.SP.U	TOWER 2 304 FT WIND SPEED	16	MPH
	T2SPIFA	T2.SP.I	TOWER 2 159 FT WIND SPEED	20.2	MPH
	T22SPLFA	T2.SP.L	TOWER 2 30 FT WIND SPEED	21	MPH
	T2DRUFA	T2.DR.U	TOWER 2 304 FT WIND DIRECTION	311	DEG AZ
	T2DRIFA	T2.DR.I	TOWER 2 159 FT WIND DIRECTION	309	DEG AZ
	T2DRLFA	T2.DR.L	TOWER 2 30 FT WIND DIRECTION	308	DEG AZ
	T2DTULFA	T2.DT.U-L	TOWER 2 304 – 26 FT DELTA TEMP	-0.4	DEG F
	T2DTILFA	T2.DT.I-L	TOWER 2 155 – 26 FT DELTA TEMP	0.6	DEG F
	T2ATLFA	T2.AT.L	TOWER 2 26 FT AMBIEWNT TEMP	85.0	DEG F
	T2DPLFA	T2.DP.L	TOWER 2 26 FT DEW POINT	44.81	DEG F

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

TRANSPORTATION ACCIDENT INVOLVING RAD MATERIAL

JPM Number: LOJPM3123

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	5/20/15 Date
Validated By:	SME or Instructor	08/20/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

1. Task description and number, JPM description and number are identified.
2. Knowledge and Abilities (K/A) references are included.
3. Performance location specified. (in-plant, control room, simulator, or other)
4. Initial setup conditions are identified.
5. Initiating cues (and terminating cues if required) are properly identified.
6. Task standards identified and verified by SME review.
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
8. If an alternate path is used, the task standard contains criteria for successful completion.
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure SE-15	Rev: 19
Procedure OP-AA-106-102	Rev: 6
Procedure EN-AA-407	Rev: 7
Procedure LS-AA-1120 (RAD 1.24)	Rev: 16
Procedure _____	Rev: _____

10. Verify cues both verbal and visual are free of conflict.
11. Verify performance time is accurate
12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
13. When JPM is initially validated, sign and date JPM cover page.
    Subsequent validations, sign and date below:

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM is New.	07/20/15

IV. TASK STANDARD:

Notify the individual reporting the transportation accident involving radioactive waste of the emergency actions within 15 minutes.

V. SIMULATOR SETUP

N/A

VI. INITIAL CONDITIONS:

A truck driver transporting low specific activity class 'A' waste (Deepbed waste and sludge resin) from LGS to a disposal site in North Carolina has just contacted you informing you that the truck, on route 422, was in an accident and has overturned.

The driver of the truck reports damage to the truck and leakage from the High Integrity Container (HIC).

VII. INITIATING CUE:

This Task is Time Critical.

This JPM will start when you tell the evaluator that you are aware of task conditions and are ready to begin.

No prior notifications have been made. You are to perform the duties as the person receiving the report of the transportation accident, and perform all required actions and notifications.

If this JPM is administered in a classroom setting then write all notifications and/or communications, and list procedures entered on the Briefing Sheet.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATORS NOTE: The following reference material should be given to the candidate if/when requested: • SE-15, Known or Suspected Radioactive Substance Spill Incident. • EN-AA-407, Response To Unplanned Discharges, Spills And Venting of Licensed Radionuclides to Groundwater, Surface Water or Soil. • OP-AA-106-102, Accidents Involving the Transportation of Rad Materials. Reportability Reference Manual (Available if requested)					
	1. Obtain current revision of SE-15, Known or Suspected Radioactive Substance Spill Incident. **CUE:** Candidate is given a copy of SE-15, when knowledge of the correct location of procedure is demonstrated.	Candidate demonstrates ability (actual or discuss) to locate SE-15, Known or Suspected Radioactive Substance Spill Incident. .			
	2. Perform SE-15, Immediate Operator Actions as follows:	N/A			
*	2a. **NOTIFY** Rad Pro **CUE:** Rad Pro notified	Rad Pro notified			
*	2b. **NOTIFY** Shift Manager **CUE:** Shift Manager notified	Shift Manager notified			
*	2c. **NOTIFY** Chemistry Supervision **CUE:** Chemistry Supervision notified	Chemistry Supervision notified			
EVALUATORS NOTE: The definitions for "Transportation Accident" (accident involving an injury, evacuation or spillage of contaminated material) or and "Transportation Incident" are defined in OP-AA-106-102.					
	3. Perform SE-15, Follow-Up Actions as follows:	N/A			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	3a **ENTER** EN-AA-407, Response To Unplanned Discharges, Spills And Venting of Licensed Radionuclides to Groundwater, Surface Water or Soil.	EN-AA-407, Response To Unplanned Discharges, Spills And Venting of Licensed Radionuclides to Groundwater, Surface Water or Soil, referenced.			
	3b. **ENTER** OP-AA-106-102, Accidents Involving the Transportation of Rad Materials, and execute concurrently with SE-15	Candidate references OP-AA-106-102, Accidents Involving the Transportation of Rad Materials, and executes concurrently with SE-15			
EVALUATORS NOTE: Candidate either lists the following (4a-4f) individual SE-15 section 4.3 actions, or performs SE-15, step 4.3 15 minute notifications.					
	4. **IF** notified of a Transportation Accident involving radioactive waste **THEN INFORM** reporting individual of following required actions within 15 minutes.	Notifications to individual reporting the Transportation Accident required **<u>within 15 minutes</u>** of identification.			
*	4a. Keep unnecessary people at least 150 feet upwind of spill.	15 minute notification made			
*	4b. Isolate hazard area **AND** deny entry	15 minute notification made			
*	4c. Limit entry to shortest possible time.	15 minute notification made			
*	4d. Use Self-contained breathing apparatus (SCBA) **AND** structural firefighter's protective clothing to provide limited protection.	15 minute notification made			
*	4e. Delay clean-up until arrival or instruction of qualified Radiation Authority.	15 minute notification made			
*	4f. **IF** water pollution occurs, **THEN** notify the appropriate authorities.	15 minute notification made			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

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JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: TRANSPORTATION ACCIDENT INVOLVING RAD MATERIAL (SRO)

JPM Number: LOJPM3123 **Revision Number:** 000

Task Number and Title: 2990090301, Apply Radiation And Contamination Safety Procedures

K/A Number and Importance: Generic 2.3.14 Importance 3.4/3.8

Safety Function (1-9) N/A

Admin Category (A1-4) 3

Level of Difficulty (1-5) 3

Suggested Testing Environment: Simulator/Classroom

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

Reference(s): SE-15, Known or Suspected Radioactive Substance Spill Incident, Rev 19.
EN-AA-407, Response To Unplanned Discharges, Spills And Venting of Licensed Radionuclides to Groundwater, Surface Water or Soil, Rev 7.
OP-AA-106-102, Accidents Involving the Transportation of Rad Materials, Rev 6.
Reportability Reference Manual

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

Testing Method: ☐ Simulate ☒ Perform

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

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

A truck driver transporting low specific activity class 'A' waste (Deepbed waste and sludge resin) from LGS to a disposal site in North Carolina has just contacted you informing you that the truck, on route 422, was in an accident and has overturned.

The driver of the truck reports damage to the truck and leakage from the High Integrity Container (HIC).

INITIATING CUE:

This Task is Time Critical.

This JPM will start when you tell the evaluator that you are aware of task conditions and are ready to begin.

No prior notifications have been made. You are to perform the duties as the person receiving the report of the transportation accident, and perform all required actions and notifications.

If this JPM is administered in a classroom setting then write all notifications and/or communications, and list procedures entered on this Briefing Sheet.

Document all Notifications and/or Communications and Procedures entered:

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LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

EVALUATE ST-6-047-370-1, PRE CONTROL ROD WITHDRAWAL CHECK FOLLOWING CORE ALTERATIONS (SRO)

JPM Number: LOJPM6753

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Byers Instructor	11/19/15 Date
Validated By:	SME or Instructor	11-19-15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/19/15 Date

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Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

WJ 1. Task description and number, JPM description and number are identified.

WJ 2. Knowledge and Abilities (K/A) references are included.

WJ 3. Performance location specified. (in-plant, control room, simulator, or other)

WJ 4. Initial setup conditions are identified.

WJ 5. Initiating cues (and terminating cues if required) are properly identified.

WJ 6. Task standards identified and verified by SME review.

WJ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

N/A WJ 8. If an alternate path is used, the task standard contains criteria for successful completion.

WJ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure ST-6-047-370-1 Rev: 40
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

WJ 10. Verify cues both verbal and visual are free of conflict.

WJ 11. Verify performance time is accurate

N/A WJ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

WJ 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM supersedes LLOJPM0753 Rev. 0. Revised to new template and to align with latest procedure revision.	10/29/15

IV. TASK STANDARD:

The candidate should report the test is not completed properly due to procedure steps not signed off correctly, 34-03 Pre Control Rod Withdrawal Checks not performed, and HCU 18-15 accumulator pressure is out of surveillance.

V. SIMULATOR SETUP

1. None

VI. INITIAL CONDITIONS:

- Unit 1 is in OPCON 5, with Reactor Vessel Head removed
- You are the oncoming DAY shift SRO
- Pre-Control Rod Withdrawal Checks are required for Control rods:
  - 14-11, Region IV
  - 18-15, Region IV
  - 34-03, Region III
  - 42-15, Region III
- Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was generated on night shift to support testing of 4 Control Rods.
- ST-6-107-632-1, One Rod Out Interlock Verification Testing is in surveillance
- ST-6-047-750-1, CRD Accumulator Pressure Check, is NOT in surveillance
- NF-AA-330-1001, Core Verification Guideline, is in compliance.

VII. INITIATING CUE:

You are the oncoming SRO and are to review Partial ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations. The procedure requires SRO approval prior to withdrawing the 4 designated Control Rods. Identify any discrepancies, TECH SPEC concerns and / or TECH SPEC actions that are required to be addressed prior to withdrawing the 4 Rods.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATORS NOTE: The following items should be available to the applicant: • M/U ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations • JPM Briefing Sheet • Unit 1 TECH SPECS					
	1. SRO candidate reviews partial test for applicability to the testing of the 4 control rods	Candidate determines Partial Procedure is appropriate for intended use.			
*	2. SRO candidate reviews test and identifies step 4.5.7 not verified for control rod 42-15. (Unit 1 is in OPCON 5, with Reactor Vessel Head removed, as designated on initiating conditions). This step is required to be completed prior to submitting to the SRO for verification.	Step 4.5.7 not completed prior to SRO verification *(Page 31 of 40)*			
*	3. SRO candidate identifies control rod 34-03 has not been identified in ATTACHMENT 2 and section 4.5 requirement not met prior to SRO verification.	Control rod 34-03 Section 4.5 requirements not completed *(Page 29 of 40)*			
*	4. SRO candidate identifies control rod 18-15 accumulator pressure is 945 psig which is below the TECH SPEC required 955 psig requirement for control rod operability	Control Rod 18-15, HCU accumulator pressure is 945 whereas TECH SPECS operability is 955 psig.			

*	5. SRO references TECH SPEC 3.1.3.5, and determines all control rod scram accumulators are required to be operable in OPCON 5 and takes actions for a control rod with a INOP scram accumulator	TECH SPECS referenced and candidate determines that if rod were to be withdrawn T. S. 3.1.3.5 Action b would apply.			
*	6. SRO VERIFY all TS requirements met for control rod withdrawal AND INITIAL Attachment 2.	SRO does NOT allow control rod withdrawal due to the above discrepancies being identified.			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: EVALUATE ST-6-047-370-1, PRE CONTROL ROD WITHDRAWAL CHECK FOLLOWING CORE ALTERATIONS (SRO)

JPM Number: LOJPM6753 **Revision Number:** 000

Task Number and Title: 320010302 Review And Approve All ST Procedures To Be Performed

K/A Number and Importance: G2.2.12 Knowledge of Surveillance Procedures

Importance: SRO 4.1

Safety Function (1-9) N/A

Admin Category (A1-4) 1

Level of Difficulty (1-5) 3

Suggested Testing Environment: Classroom

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

Reference(s): ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, Rev 40

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

Testing Method: ☐ Simulate ☒ Perform

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

EVALUATION SUMMARY:

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

- Unit 1 is in OPCON 5, with Reactor Vessel Head removed
- You are the oncoming DAY shift SRO
- Pre-Control Rod Withdrawal Checks are required for Control rods:
  - 14-11, Region IV
  - 18-15, Region IV
  - 34-03, Region III
  - 42-15, Region III
- Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was generated on night shift to support testing of 4 Control Rods
- ST-6-107-632-1, One Rod Out Interlock Verification Testing is in surveillance
- ST-6-047-750-1, CRD Accumulator Pressure Check, is NOT in surveillance
- NF-AA-330-1001, Core Verification Guideline, is in compliance

INITIATING CUE:

You are the oncoming SRO and are to review Partial ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations. The procedure requires SRO approval prior to withdrawing the 4 designated Control Rods. Identify any discrepancies, TECH SPEC concerns and / or TECH SPEC actions that are required to be addressed prior to withdrawing the 4 Rods.

ST-6-047-370-1 approved: _____

SRO

ST-6-047-370-1 not approved for the following reason(s):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Exelon Generation

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

EVALUATE VALVE STROKE DATA (SRO)

JPM Number: LOJPM6766

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	John Koelle Instructor	6/6/2015 Date
Validated By:	W. Martin / [illegible] SME or Instructor	08/20/15 Date
Reviewed By:	[illegible] Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	[illegible] Training Department	11/17/15 Date

Exelon Generation

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

✓ 1. Task description and number, JPM description and number are identified.

✓ 2. Knowledge and Abilities (K/A) references are included.

✓ 3. Performance location specified. (in-plant, control room, simulator, or other)

✓ 4. Initial setup conditions are identified.

✓ 5. Initiating cues (and terminating cues if required) are properly identified.

✓ 6. Task standards identified and verified by SME review.

✓ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

✓ 8. If an alternate path is used, the task standard contains criteria for successful completion.

✓ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure ST-6-043-200-1	Rev: 23
Procedure ST-6-043-200-1 Att.1	Rev: N/A
Procedure ST-6-043-200-1 Att.2	Rev: N/A
Procedure _____	Rev: _____
Procedure _____	Rev: _____

✓ 10. Verify cues both verbal and visual are free of conflict.

✓ 11. Verify performance time is accurate

✓ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

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

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM is new.	11/07/14
000	JPM re-numbered from 6768 to 6766 due to conflict with another JPM and changes to ST-6-043-200-1	6/6/15

IV. SIMULATOR SETUP INSTRUCTIONS

1. Simulator - N/A
2. Handout to be included with this JPM:
   - ST-6-043-200-1 procedure, marked up thru Step 4.3, and
3. Attachments that are part of this JPM:
   - **Attachment 1**, ST-6-043-200-1 "Valve Stroke Timing and Exercise Data Sheet" showing **INITIAL** stroke time for HV-043-1F020, is: 8.05 sec
   - ******Hand out only after student determines valve retest is required**** Attachment 2**, ST-6-043-200-1 Attachment 1 "Valve Stroke Timing and Exercise Data Sheet" showing **RETEST** stroke time for HV-043-1F020, is: 9.91 sec

V. TASK STANDARD:

1. For HV-043-1F020, determine that its INITIAL stroke time is in the Alert range. Because it is, determine that a re-test is appropriate.
2. Determine that the RETEST stroke time shows that the valve greater than the Maximum Allowable stroke time.
3. Declare the valve inoperable and determine that Tech Spec Action 3.6.3.a is required.

VI. INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. The PRO has completed, but has not evaluated the results of, ST-6-043-200-1, Reactor Recirculation System Quarterly Valve Test, which stoke-time tests HV-043-1F020.
3. The PRO has provided you the completed "Valve Stroke Timing and Exercise Test Data Sheet" showing the INITIAL stroke time for the valve.

VII. INITIATING CUE:

You are directed to review the provided Data Sheet and evaluate the test results for HV-043-1F020. Determine the required course of action, including any Tech Spec action, where applicable. Document your findings on the Individual Briefing Sheet.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM.

Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATOR: Provide the following to the Examinee: • **ST-6-043-200-1 procedure, marked up thru step 4.3** • **Attachment 1, ST-6-043-200-1, Valve Stroke Timing and Exercise Test Data Sheet, showing the "INITIAL" stroke time (8.05 sec)**					
	1. Review valve stroke time test results for HV-043-1F020 on Attachment 1 Data Sheet.	Candidate reviews "Attachment 1" Data Sheet for HV-043-1F020.			
EVALUATOR NOTE: The following is only a suggested sequence for the required elements; they may be performed in any order suitable to the Examinee.					
*	2. Evaluate stroke time test results for **INITIAL** stroke time for HV-043-1F020.	Candidate determines that 1F020 INITIAL stroke time is greater than the Acceptable Range but less than the Max Allowable.			
*	3. **IF** initial stroke time is in Alert Range **AND** conditions permit additional stroke of valve, **THEN** immediately **RETEST** valve. **CUE:** Conditions are acceptable to RETEST HV-043-1F020	Candidate determines that HV-043-1F020 is in ALERT Range and conditions exist to RETEST the valve.			
EVALUATOR NOTE: Provide candidate with Attachment 2, ST-6-043-200-1, Valve Stroke Timing and Exercise Test Data Sheet, showing the "RETEST" stroke time (9.91 sec.) when determination is made to retest, HV-043-1F020.					

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	4. Evaluate stroke time test results for **RETEST** stroke time for HV-043-1F020.	Candidate determines that 1F020 RETEST stroke time is greater than Max Allowable.			
	5. IF retest stroke time is within Acceptable range, ENTER initials in appropriate section of Attachment 1	N/A			
	6. IF retest stroke time is greater than Maximum Allowable stroke time perform the following:	N/A			
*	6a. DECLARE valve INOPERABLE	HV-043-1F020 declared INOPERABLE			
	6b. Immediately NOTIFY SSV **CUE:** If necessary, role-play as CRS and acknowledge that you've been notified HV-043-1F020 is INOP	N/A			
	6c. **INITIATE** appropriate remedial actions	Determine HV-043-1F020 a PCIV and reference U/1 Tech Specs			
*	7. Review U/1 Tech Specs to determine Required Action for inoperable HV-043-1F020.	Reviews TS 3.6.3 (PCIVs) and determines that ACTION 3.6.3.a applies: Isolate penetration by at least one de-activated automatic valve secured in the isolated position within 4 hours of becoming INOPERABLE			
*	8. Ensure HV-043-1F020 closed and de-activated to comply with TS 3.6.3 action.	Ensure HV-043-1F020 closed and deactivated within 4 hrs. of becoming INOPERABLE.			
CUE: "You have met the termination criteria for this JPM."					

JPM Completion Time _____

Exelon Generation

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: Evaluate Valve Stroke Data (SRO)

JPM Number: LOJPM6766 **Revision Number:** 000

Task Number and Title: 3420030302 Review Results of Completed Surveillance Tests

K/A Number and Importance: 2.1.25 3.9/4.2 2.2.40 3.4/4.7

Safety Function (1-9) N/A

Admin Category (A1-4) 2

Level of Difficulty (1-5) 2

Suggested Testing Environment: Simulator/Classroom

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

Reference(s): ST-6-043-200-1, Reactor Recirculation System Quarterly Valve Test, Rev 23

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

Testing Method: ☐ Simulate ☒ Perform

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

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. The PRO has completed, but has not evaluated the results of, ST-6-043-200-1, Reactor Recirculation System Quarterly Valve Test, which stoke-time tests HV-043- 1F020.
3. The PRO has provided you the completed "Valve Stroke Timing and Exercise Test Data Sheet" showing the INITIAL stroke time for the valve.

INITIATING CUE:

You are directed to review the provided Data Sheet and evaluate the test results for HV-043-1F020. Determine the required course of action, including any Tech Spec action, where applicable. Document your findings on the Individual Briefing Sheet.

Results of ST-6-043-200-1, Reactor Recirculation System Quarterly Valve Test Data Sheet:

_____

_____

_____

_____

_____

_____

ATTACHMENT - 1

VALVE STROKE TIMING AND EXERCISE TEST DATA SHEET

VALVE NUMBER (DIRECTION OF STROKE)	INITIAL STROKE TIME (SEC)	RETEST STROKE TIME (SEC)	ACCEPTABLE RANGE (SEC)	MAX ALLOWABLE (SEC)	STROKE TIME SATISFACTORY? Sat(Unsat) / INIT / DATE
HV-043-1F020 (CLOSED)	8.05		≥ 2.45 and ≤ 7.34	9.78	/ / (

Exelon Generation.

ATTACHMENT - 2

VALVE STROKE TIMING AND EXERCISE TEST DATA SHEET

VALVE NUMBER (DIRECTION OF STROKE)	INITIAL STROKE TIME (SEC)	RETEST STROKE TIME (SEC)	ACCEPTABLE RANGE (SEC)	MAX ALLOWABLE (SEC)	STROKE TIME SATISFACTORY? Sat(Unsat) / INIT / DATE
HV-043-1F020 (CLOSED)		9.91	≥ 2.45 and ≤ 7.34	9.78	/ / (

Exelon Generation

HANDOUT
AT START

NRC requested
Attachments be separated
to prevent/ Ensure
Att #2 doesn't get
passed out too soon.

ATTACHMENT - 1

VALVE STROKE TIMING AND EXERCISE TEST DATA SHEET

VALVE NUMBER (DIRECTION OF STROKE)	INITIAL STROKE TIME (SEC)	RETEST STROKE TIME (SEC)	ACCEPTABLE RANGE (SEC)	MAX ALLOWABLE (SEC)	STROKE TIME SATISFACTORY? Sat(Unsat) / INIT / DATE
HV-043-1F020 (CLOSED)	8.05		≥ 2.45 and ≤ 7.34	9.78	/ / (

HANDOUT AFTER

RETEST DECIDED

ATTACHMENT - 2

VALVE STROKE TIMING AND EXERCISE TEST DATA SHEET

VALVE NUMBER (DIRECTION OF STROKE)	INITIAL STROKE TIME (SEC)	RETEST STROKE TIME (SEC)	ACCEPTABLE RANGE (SEC)	MAX ALLOWABLE (SEC)	STROKE TIME SATISFACTORY? Sat(Unsat) / INIT / DATE
HV-043-1F020 (CLOSED)		9.91	≥ 2.45 and ≤ 7.34	9.78	/ / (

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

RADIOACTIVE SUBSTANCE SPILL (RO)

JPM Number: LOJPM3122

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	8/20/15 Date
Validated By:	JONES SME or Instructor	8/20/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/19/15 Date

Exelon Generation.

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

1. Task description and number, JPM description and number are identified.
2. Knowledge and Abilities (K/A) references are included.
3. Performance location specified. (in-plant, control room, simulator, or other)
4. Initial setup conditions are identified.
5. Initiating cues (and terminating cues if required) are properly identified.
6. Task standards identified and verified by SME review.
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
8. If an alternate path is used, the task standard contains criteria for successful completion.
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure SE-15	Rev: 19
Procedure EN-AA-407	Rev: 7
Procedure SC8.5.A	Rev: 33
Procedure	Rev:
Procedure	Rev:

10. Verify cues both verbal and visual are free of conflict.
11. Verify performance time is accurate
12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM is New.	07/20/15

IV. TASK STANDARD:

Determine the actions and notifications required by SE-15, Known or Suspected Radioactive Substance Spill Incident, for a radioactive substance spill on site.

V. SIMULATOR SETUP

N/A

VI. INITIAL CONDITIONS:

You have just been notified by Harry Miller, RP Supervisor, that RWCU Resin was being transported offsite. Due to heavy rain, the final latching of the Cask containing the resin HIC (High Integrity Container) was to be performed under cover at the security checkpoint.

While maneuvering around the U#1 CST area, the load shifted and the Cask and HIC fell off of the trailer spreading resin on the ground. It is raining very hard and some of the radioactive resin is washing into the nearby storm drain.

The S-5.3 Diverting Valve (068-0035) is aligned to the Hold Pond, and a Hold Pond release is in progress.

VII. INITIATING CUE:

This JPM will start when you tell the evaluator that you are aware of task conditions and are ready to begin.

Perform the requirements of the person receiving the notification. Document notifications, and notify the responsible organizations of required actions for the uncontrolled release.

If this JPM is administered in a classroom setting then write all notifications and/or communications on the Individual Briefing Sheet.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

* Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATORS NOTE: The following reference material should be available to the candidate: 1. SE-15, Known or Suspected Radioactive Substance Spill Incident. 2. S68.5 A Release of Holding Pond Inventory.					
	1. Obtain current revision of SE-15, Known or Suspected Radioactive Substance Spill Incident. **CUE:** Candidate is given a copy of SE-15, when knowledge of the correct location of procedure is demonstrated.	If JPM is pre briefed this step is N/A Candidate demonstrates ability (actual or discuss) to locate SE-15, Known or Suspected Radioactive Substance Spill Incident.			
	2. Perform SE-15, Immediate Operator Actions as follows:	N/A			
*	2a. **NOTIFY** Rad Pro **CUE:** Rad Pro notified	Rad Pro notified			
*	2b. **NOTIFY** Shift Manager **CUE:** Shift Manager notified	Shift Manager notified			
*	2c. **NOTIFY** Chemistry Supervision **CUE:** Chemistry Supervision notified	Chemistry Supervision notified			
*	3. **IF** spill **OR** leak is detected on site **THEN ISOLATE AND CONTAIN** release **OR** **IF** spill is detected in Holding Pond **THEN PREVENT** further pond discharges.	Using SE-15, Att #1 student determines storm drains go to the Hold Pond, and direct to stop Hold Pond release.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	4. **ENTER** EN-AA-407, Response To Unplanned Discharges, Spills And Venting Of Licensed Radionuclides To Groundwater, surface Water Or Soil **AND EXECUTE** concurrently **CUE:** If applicant requests, the CRS will review EN-AA-407	N/A			
*	5. **VERIFY** Chemistry analyzes Storm and Yard drains.	Chemistry notified to perform sampling of Storm and Yard drains.			
	6. Contact Chemistry for release limits based on Offsite Dose calculation Manual (ODCM)	Request the CRS to contact Chemistry for release limits based on Offsite Dose calculation Manual (ODCM)			
	7. **DIRECT** HP to perform site boundary survey	Request the CRS to notify HP to perform site boundary survey			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: **RADIOACTIVE SUBSTANCE SPILL (RO)**

JPM Number: LOJPM3122 **Revision Number:** 000

Task Number and Title: 2990090301, Apply Radiation And Contamination Safety Procedures.

K/A Number and Importance: Generic 2.3.14 Importance 3.4 / 3.8

Safety Function (1-9) _____

Admin Category (A1-4) __3__

Level of Difficulty (1-5) __3__

Suggested Testing Environment: Simulator/Classroom

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

Reference(s): SE-15, Known or Suspected Radioactive Substance Spill Incident, Rev 19.
EN-AA-407, Response To Inadvertent Releases Of Licensed Materials to Groundwater, Surface Water, Soil Or Engineered Structures, Rev 7.

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: __15__ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

You have just been notified by Harry Miller, RP Supervisor, RWCU Resin was being transported offsite. Due to heavy rain, the final latching of the Cask containing the resin HIC (High Integrity Container) was to be performed under cover at the security checkpoint.

While maneuvering around the U#1 CST area, the load shifted and the Cask and HIC fell off of the trailer spreading resin on the ground. It is raining very hard and some of the radioactive resin is washing into the nearby storm drain.

The S-5.3 Diverting Valve (068-0035) is aligned to the Hold Pond, and a Hold Pond release is in progress.

INITIATING CUE:

This JPM will start when you tell the evaluator that you are aware of task conditions and are ready to begin.

Perform the requirements of the person receiving the notification. Document notifications, and notify the responsible organizations of required actions for the uncontrolled release.

If this JPM is administered in a classroom setting then write all notifications and/or communications on this Briefing Sheet.

Document all Notifications and/or Communications and Procedures entered:

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

FIRE ALARM IN INVERTOR ROOM

JPM Number: LOJPM3715

REVISION NUMBER: 000

DATE: 11-23-15

Developed By:	Instructor	11/19/15 Date
Validated By:	Byers SME or Instructor	11/20/15 Date
Reviewed By:	Operations Representative	11-20-15 Date
Reviewed By:	EP Representative	N/A Date
Approved By:	Training Department	11-23-15 Date

Exelon Generation.

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

1. Task description and number, JPM description and number are identified.
2. Knowledge and Abilities (K/A) references are included.
3. Performance location specified. (in-plant, control room, simulator, or other)
4. Initial setup conditions are identified.
5. Initiating cues (and terminating cues if required) are properly identified.
6. Task standards identified and verified by SME review.
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
8. If an alternate path is used, the task standard contains criteria for successful completion.
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure ARC MCR 006 I-3-L	Rev: 4
Procedure SE-8	Rev: 51
Procedure SE-24	Rev: 3
Procedure FSSA-3000 Sheet 4	Rev: 0
Procedure SE-24 app 1	Rev: 1

10. Verify cues both verbal and visual are free of conflict.
11. Verify performance time is accurate
12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM supersedes LLOJPM0715 Rev. 0. Revised to new template and to align with latest procedure revision.	10/28/15

IV. TASK STANDARD:

1. Dispatch the Fire Brigade
2. Evacuate the #1 Inverter Room
3. Identify 1FSSG-3020 as the correct Fire Safe Shutdown Guide and may requires prompt action

V. SIMULATOR SETUP

1. None

VI. INITIAL CONDITIONS:

1. This JPM is to be conducted as a "DRILL".
2. The following is observed in the MCR:
   - Audible Fire Alarm Code 5-2-4 is alarming
   - CONT EL 254 INVERT RM I (006 FIRE I-3-L) Annunciator is in alarm
   - MCR has been notified, by a welder, a fire has been confirmed

VII. INITIATING CUE:

You are directed by Shift Supervision to respond to the above alarm as the PRO. Provide response on the Individual Briefing Sheet.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

ELEMENT		STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATORS NOTE: This JPM is designed to be conducted in a classroom setting. Required documents must be made available to the candidate: • ARC 006 FIRE I-3-L • SE-8, FIRE Appendix 1 Hard Card • FSSA-3000 Sheets 1 through 10 If the JPM is conducted in Simulator setting, student should obtain copies of required documents without assistance.					
	1. **OBTAIN** copy of ARC 006 FIRE I-3-L **CUE:** Provide copy of MCR ARC 006 FIRE I-3-L	Copy of ARC 006 FIRE I-3-L obtained.			
	2. **OBTAIN** a copy of SE-8, FIRE Appendix 1 Hard Card **CUE:** Provide copy of SE-8, FIRE Appendix 1 Hard Card	Copy of SE-8, Appendix 1 Hard Card obtained.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	3. *(2.0)* **RECORD** time of fire 1st indication and alarm code	Record time of fire 1st indication. Time: _____ Alarm Code: _____			
*	4. Notify SSV that 1FSSG-3020 requires a prompt action to man the remote shutdown panel *(ARC Action)*	SSV notified of prompt action to man the remote shutdown panel			
*	5. *(3.0)* **ACTIVATE** Fire Brigade *(4.5)* Make Pa announcement	The candidate Selects and makes announcement per section 4.5 for Fire Brigade activation and area evacuation			
*	6. *(5.0)* Notify Shift Manager and WCS	Shift Manager and WCS notified			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	7. **ADVISE** Fire Brigade Leader of the appropriate Pre Fire Plan to use from information contained in the Annunciator Response Card for the fire alarm. *(ARC action)*	**ADVISE** Fire Brigade Leader to use Pre-Fire Plan F-A-452.			
*	8. **REFER** to SE-8 Att. 7, ARC 006 FIRE I-3-L or Fire Safe Shutdown Area Map FSSA-3000 to determine appropriate Fire Safe Shutdown Guide (FSSG) for both units. (ARC action) **CUE:** Provide copies of FSSA-3000 Sheets 1 through 10.	Identify 1FSSG-3020 FIRE AREA 020 FIRE GUIDE Unit 1 Static Inverter Compartment (El. 254'-0") as the appropriate FSSG.			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: FIRE ALARM IN INVERTOR ROOM

JPM Number: LOJPM3715 **Revision Number:** 000

Task Number and Title: 2000930501 (SE-8) Actions In Event Of A Fire

K/A Number and Importance: Generic 2.1.8 Ability to Coordinate Personnel activities outside the control Room Importance RO 3.4 / SRO 4.1

Safety Function (1-9) __N/A___

Admin Category (A1-4) __4___

Level of Difficulty (1-5) __3___

Suggested Testing Environment: Classroom

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

Reference(s): CONT EL 254 INVERT RM I (006 FIRE I-3-L)
SE-8, Fire, Rev 51
SE-24, Inplant Evacuations, Rev 3
Day Shift People Paper
FSSA-3000 Sheets 1 through 10
SE-24 app 1

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: _15__ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE
INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. This JPM is to be conducted as a "DRILL".
2. The following is observed in the MCR:
   - Audible Fire Alarm Code 5-2-4 is alarming
   - CONT EL 254 INVERT RM I (006 FIRE I-3-L) Annunciator is in alarm
   - MCR has been notified, by a welder, a fire has been confirmed

INITIATING CUE:

You are directed by Shift Supervision to respond to the above alarm as the PRO. Provide response on the Individual Briefing Sheet.

Document PRO actions for report of a Fire in Inverter Room below:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

4.5 **FIRE REPORTED**

A fire has been reported at (location). Fire Brigade respond. All personnel evacuate the (location) and assemble at (assembly area). Limit Channel-1 radio traffic to Fire Brigade communications and emergency use only. _____

5.0 **IF** confirmatory indications are received that fire is real,
THEN ACTIVATE the full fire brigade,
AND NOTIFY Shift Mgr
AND WCS.

Examples of confirmatory indications include:

- Fire Pump start in conjunction with detection coded fire alarms
- Confirmed Report of Smoke or Fire
- Additional coded fire alarms in the area _____

6.0 Main Control Room Actions For Fire Alarm At Spray Pond Pumphouse

1. **IF** the Outside EO is a Qualified Fire Brigade leader,
   THEN DISPATCH the Outside EO to meet Security at the Spray Pond,
   OTHERWISE DISPATCH Fire Brigade Leader to TSC for Security transportation to Spray Pond Pumphouse. _____

2. **NOTIFY** Security to provide transportation of Fire Brigade Leader to the Spray Pond Pumphouse. _____

7.0 **IF** Confirmatory indications (fire pump start with fire alarm) are received that fire is real,
OR the Fire Brigade member dispatched to the scene determines that a full fire brigade response is required,
THEN ACTIVATE the full fire brigade. _____

8.0 **NOTIFY** Shift Manager. _____

9.0 **NOTIFY** Work Control Supervisor. _____

10.0 **ADVISE** Fire Brigade Leader of the appropriate Pre-Fire Plan to use from information contained in the Fire Alarm Annunciator Response Card. _____

11.0 **WHEN** conditions permit,
THEN COMPLETE SE-8 Fire. _____

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2																			
3									L										
4																			
5																			
6																			

ALARM WORDING:

CONT EL 254
INVERT RM I

AUTOMATIC ACTIONS:

1. FA Code: 5-2-4

OPERATOR ACTIONS:

1. Dispatch fire brigade to area to investigate.
2. Notify SSV that for this alarm zone, 1FSSG-3020 requires a prompt action to man the Remote Shutdown Panel.
3. Reference: Fire Procedure F-A-452.
   S22.7.A
   SE-8
   LGS Emergency Plan Annex, Table 3-1
   FSSA-3000 Sheet 4 of 10

CAUSES:

1. Smoke Detector Alarm Panel initiation indicating fire at Elev. 254 Control Enclosure Inverter Room I.

ANNUNCIATOR#:

- N/A

SETPOINT:

- N/A

DEVICE(S):

- A4-124
  SD-105A thru SD-105D AND HD-105E

REFERENCES:

1. M-779 Sht. 26
2. E-1652

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

EVALUATE ST-6-047-370-1, PRE CONTROL ROD WITHDRAWAL CHECK FOLLOWING CORE ALTERATIONS

JPM Number: LOJPM6752

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	11/19/15 Date
Validated By:	SME or Instructor	11-19-15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	EP Representative	NA Date
Approved By:	Training Department	11/19/15 Date

Exelon Generation.

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

1. Task description and number, JPM description and number are identified.
2. Knowledge and Abilities (K/A) references are included.
3. Performance location specified. (in-plant, control room, simulator, or other)
4. Initial setup conditions are identified.
5. Initiating cues (and terminating cues if required) are properly identified.
6. Task standards identified and verified by SME review.
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
8. If an alternate path is used, the task standard contains criteria for successful completion.
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

   Procedure ST-6-047-370-1 Rev: 40
   Procedure _____ Rev: _____
   Procedure _____ Rev: _____
   Procedure _____ Rev: _____
   Procedure _____ Rev: _____
10. Verify cues both verbal and visual are free of conflict.
11. Verify performance time is accurate
12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
13. When JPM is initially validated, sign and date JPM cover page.
    Subsequent validations, sign and date below:

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM supersedes LLOJPM0752 Rev. 0. Revised to new template and to align with latest procedure revision.	10/29/15

IV. TASK STANDARD:

The candidate should report the test is not completed properly due to procedure steps not signed off correctly and Control Rod 34-03 Pre Control Rod Withdrawal Checks not performed.

V. SIMULATOR SETUP

1. None .

VI. INITIAL CONDITIONS:

- Unit 1 is in OPCON 5, with Reactor Vessel Head removed
- You are the oncoming DAY shift RO
- Pre-Control Rod Withdrawal Checks are required for Control rods:
  - 14-11, Region IV
  - 18-15, Region IV
  - 34-03, Region III
  - 42-15, Region III
- Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was generated on night shift to support testing of 4 Control Rods.
- ST-6-107-632-1, One Rod Out Interlock Verification Testing is in surveillance
- ST-6-047-750-1, CRD Accumulator Pressure Check, is NOT in surveillance
- NF-AA-330-1001, Core Verification Guideline, is in compliance.

VII. INITIATING CUE:

You are the oncoming RO and are to review Partial ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations. The procedure should be reviewed and submitted to the SRO for verification prior to withdrawing the designated 4 Control Rods.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

* Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Hand the applicant: • Partial of ST-6-047-370-1 • JPM cue sheet	Review the handouts			
	2. RO candidate reviews partial test for applicability to the testing of the 4 control rods	Candidate determines Partial Procedure is appropriate for intended use.			
*	3. RO candidate reviews test and identifies step 4.5.7 not verified for control rod 42-15, Unit 1 is in OPCON 5, with Reactor Vessel Head removed, as designated on initiating conditions. Step required to be completed prior to submitting to the SRO for verification.	Step 4.5.7 not completed prior to SRO verification			
*	4. RO candidate identifies one of the 4 control rods to be tested control rod 34-03 per ATTACHMENT 2 has not been identified and section 4.5 requirement not met prior to SRO verification. (page 29 of 40)	Control rod 34-03 Section 4.5 requirements not completed on page 29. Control Rod 34-03 should NOT be blank but rather filled in like rod 14-11 on page 23.			
*	5. RO candidate identifies control rod 18-15 Accumulator pressure is 945 psig which is below the TECH SPEC required 955 psig requirement for control rod operability	Control Rod 18-15, HCU accumulator pressure is 945 whereas TECH SPECS operability is 955 psig.			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: EVALUATE ST-6-047-370-1, PRE CONTROL ROD WITHDRAWAL CHECK FOLLOWING CORE ALTERATIONS

JPM Number: LOJPM6752 **Revision Number:** 000

Task Number and Title: 29900050401 Conduct Core Alteration Testing For Offloading, Shuffling, and Reloading The Core

K/A Number and Importance: G2.2.12 (Knowledge of Surveillance Procedures

Importance RO 3.7 SRO 4.1

Safety Function (1-9) _____

Admin Category (A1-4) __1__

Level of Difficulty (1-5) __3__

Suggested Testing Environment: Classroom

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

Reference(s): ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, Rev40.

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: _15_ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

_____

_____

_____

_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

- Unit 1 is in OPCON 5, with Reactor Vessel Head removed
- You are the oncoming DAY shift RO
- Pre-Control Rod Withdrawal Checks are required for Control rods:
  - 14-11, Region IV
  - 18-15, Region IV
  - 34-03, Region III
  - 42-15, Region III
- Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was generated on night shift to support testing of 4 Control Rods.
- ST-6-107-632-1, One Rod Out Interlock Verification Testing is in surveillance
- ST-6-047-750-1, CRD Accumulator Pressure Check, is NOT in surveillance
- NF-AA-330-1001, Core Verification Guideline, is in compliance.

INITIATING CUE:

You are the oncoming RO and are to review Partial ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations. The procedure should be reviewed and submitted to the SRO for verification prior to withdrawing the designated 4 Control Rods.

Reviewed and Submitted to SRO without comments: _____

RO

Reviewed and submitted to SRO with the following comments:

_____

_____

_____

_____

_____

_____

_____

Exelon Generation

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

VALVE STROKE TIME EVALUATION

JPM Number: LOJPM6764

REVISION NUMBER: 000

DATE: 1/6/16

Developed By:	Instructor	12/11/15 Date
Validated By:	Byers SME or Instructor	12/11/15 Date
Reviewed By:	Operations Representative	1-6-16 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	1/6/16 Date

Exelon Generation

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

1. Task description and number, JPM description and number are identified.
2. Knowledge and Abilities (K/A) references are included.
3. Performance location specified. (in-plant, control room, simulator, or other)
4. Initial setup conditions are identified.
5. Initiating cues (and terminating cues if required) are properly identified.
6. Task standards identified and verified by SME review.
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
8. If an alternate path is used, the task standard contains criteria for successful completion.
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

   Procedure ST-6-055-200-1 Rev: 65
   Procedure _____ Rev: _____
   Procedure _____ Rev: _____
   Procedure _____ Rev: _____
10. Verify cues both verbal and visual are free of conflict.
11. Verify performance time is accurate
12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
13. When JPM is initially validated, sign and date JPM cover page.
    Subsequent validations, sign and date below:

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

II. RECORD OF TEMPORARY CHANGES:

Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence
All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision
All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

The description of the Revision should adequately indicate how the training content of the Revision has changed.

The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM replaces LLOJPM0764 Rev. 0. Revised to new template and to align with latest procedure revision.	08/15/14

IV. TASK STANDARD:

1. Candidate identifies that HV-055-1F072 (OPEN) and HV-055-1F041 (OPEN) initial stroke times are outside of the acceptable range and require a retest stroke.
2. Candidate identifies that restroke time for HV-055-1F072 (OPEN) has returned to Acceptable Range.
3. Candidate identifies that restroke time for HV-055-1F041 (OPEN) exceeds the Max Allowable time and is declared INOPERABLE.

V. INITIAL CONDITIONS:

1. Unit 1 is in OPCON 1 at 100% Power.
2. ST-6-055-200-1, HPCI Valve Test, is being performed as part of a HPCI System Outage Window PMT.

(For this JPM, a marked up copy of ST-6-055-200-1 marked up through and including step 4.3 is required. For attachment 1 of the ST, document stroke times for HV-055-1F072 (OPEN) and HV-055-1F041 (OPEN) that are above the Acceptable Range but below Max Allowable time, for all other valve stroke times document stroke times that are within the acceptable range)

VI. INITIATING CUE:

You are directed to continue the performance of ST-6-055-200-1, HPCI Valve Test, Starting at section 4.4, Stroke Time Test Results Evaluation.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	*ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Hand examinee the following at the beginning of JPM: • Individual Briefing Sheet • ST-6-055-200-1, HPCI Valve Test, complete up to step 4.4	N/A			
	2. (4.4.1) Evaluate Stroke Time Test Results for each valve stroked in Attachment 1 as Follows:	N/A			
*	3. (4.4.1.1) If initial stroke time is within the Acceptable Range, Then Enter Initials/date in appropriate blanks in Attachment 1	For all valves except HV-055-1F072 and HV-055-1F041, candidate enters Sat with initials and date in Attachment 1			
*	4. (4.4.1.2) If initial stroke time is greater than the Maximum allowable stroke time, Then Perform the following a. Declare Valve INOPERABLE b. Immediately Notify SSV c. Initiate appropriate remedial actions	Candidate determines no valve stroke times meet this criteria and enters N/A for steps 4.4.1.2.a through 4.4.1.2.b			

	*ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	5. (4.4.1.3) If initial stroke time is in the Alert range, and conditions permit additional stroke of valve, then immediately Retest Valve, Otherwise, Perform the following a. Declare Valve Inoperable b. Immediately Notify SSV c. Initiate Appropriate Remedial actions **CUE: If request, Inform candidate that conditions permit additional valve stroking.** **Once candidate identifies that valves HV-055-1F072 and HV-055-1F041 require restroke, provide the following restroke times:** **HV-055-1F072 : 57.21 seconds (open)** **HV-055-1F041: 7.45 seconds (open)**	Candidate determines valves HV-055-1F072 and HV-055-1F041 are in the alert range and require re-test			
*	6. (4.4.1.4) If restest stroke time is within the acceptable range, then perform the following a. Enter initials in appropriate blanks in Attachment 1 b. Record reason for deviation in Additional Actions/Test Comments Section	Candidate determines that restroke time for HV-055-1F-72 is within the Acceptable Range, enters Sat and initials Attachment 1 And describes valve issue in Additional Actions/Test Comments on the cover page of the Procedure			
*	7. (4.4.1.5) If retest stroke time is greater than the Maximum Allowable stroke time, then perform the following: a. Declare Valve Inoperable b. Immediately Notify SSV c. Initiate Appropriate remedial actions	Candidate determines that restroke time for HV-055-1F041 is greater than Maximum Allowable, declared the valve Inoperable, immediately notifies Shift Supervisor, and indicates that remedial action will be taken.			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: Valve Stroke Time Evaluation

JPM Number: LOJPM6764 **Revision Number:** 000

Task Number and Title: 2980120101 Perform Retests Following Equipment Maintenance

K/A Number and Importance: G2.1.20 4.6/4.6

Level of Difficulty (1-5) 3.5

Suggested Testing Environment: Simulator/Classroom

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

Reference(s): ST-6-055-200-1, Rev 65, HPCI Valve Test

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

Testing Method: ☐ Simulate ☒ Perform

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

EVALUATION SUMMARY:

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. Unit 1 is in OPCON 1 at 100% Power.
2. ST-6-055-200-1, HPCI Valve Test, is being performed as part of a HPCI System Outage Window PMT.

INITIATING CUE:

You are directed to continue the performance of ST-6-055-200-1, HPCI Valve Test, Starting at section 4.4, Stroke Time Test Results Evaluation

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

RESPONSE TO EHC LEAKS

JPM Number: LOJPM3109

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	10/2/15 Date
Validated By:	Robert D Mandil SME or Instructor	10/2/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, simulator, or other)

R 4. Initial setup conditions are identified.

R 5. Initiating cues (and terminating cues if required) are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

N/A 8. If an alternate path is used, the task standard contains criteria for successful completion.

R 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure SE-16 Rev: 4
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

R 10. Verify cues both verbal and visual are free of conflict.

R 11. Verify performance time is accurate

N/A 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

R 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This is a New JPM	

IV. SIMULATOR SETUP

1. Annunciator 105 (I-5), EHC Fluid Reservoir Lo Level, alarmed
2. Reduce reactor power to 85%
3. Provide marked-up copy of SE-16, through step 4.7 of Rev 4.

V. TASK STANDARD:

Unit 1, Control Valve #1 closed and isolated

VI. INITIAL CONDITIONS:

1. Alarm 105 (I-5) EHC Fluid Reservoir Lo Level has annunciated
2. An EHC leak has been identified on Unit 1 at Control Valve #1
3. Reactor power has been decreased to 85%

VII. INITIATING CUE:

Shift Supervision directs you to continue SE-16, Response to EHC Leaks at step 4.8 to close and isolate Control Valve #1 on Unit 1.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	*ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Obtain current revision of SE-16, Response to EHC Leaks **CUE:** Provide marked-up copy of SE-16, Rev 4, through step 4.7.	Current revision of SE-16, Response to EHC Leaks, obtained			
	2. Reference Attachment 2, Control Valve Closure of SE-16, Response to EHC Leaks, for closure of CV-1.	Attachment 2 of SE-16, for closure of CV-1 referenced.			
*	3. **VERIFY** no half scram present at panel 10C603	No half scram present at panel 10C603 indicated by all eight scram groups A & B white lights lit			
EVALUATORS NOTE: The following alarms will annunciate during performance of section • MCR-108 C-1, AUTO SCRAM CHANNEL B1 • MCR-107 B-1, TURBINE CONTROL VALVE FAST CLOSURE					
	4. Perform the following at 10C653 DEHC HMI.	N/A			
*	4a. **SELECT** TESTS display	"TESTS" display selected			
*	4b. **SELECT** MSV/CV TESTS	"MSV/CV TESTS" selected			
*	4c. **SELECT** CV-1	"CV-1" selected			
*	4d. **SELECT** START in CONTROL VALVE #1 TEST window.	START in CONTROL VALVE #1 TEST window selected.			

	*ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	4e. **SELECT** PAUSE after "FASV" message turns from red to grey **AND** CV-1 indicates closed.	PAUSE selected after FASV message turns from red to grey AND CV-1 indicates closed. (position of 0 or less)			
	5. Acknowledge annunciators: • 108 (C-1) AUTO SCRAM CHANNEL B1 • 107 (B-1), TURBINE CONTROL VALVE FAST CLOSURE **CUE:** A second operator will respond to alarms.	Alarms acknowledged			
*	6. **DIRECT** EO to Close 031-1011, CV-001-1 RETS EHC Isolation Valve **CUE:** 031-1011 is closed	EO directed to close 031-1011 OR per (SE-16 Att#2 step 2.b)			
*	7. **DIRECT** EO to Close 031-1012, CV-001-1 FAS EHC Isolation Valve **CUE:** 031-1012 is closed	EO directed to close 031-1012 OR per (SE-16 Att#2 step 2.c)			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: RESPONSE TO EHC LEAKS

JPM Number: LOJPM3109 **Revision Number:** 000

Task Number and Title: 2480070401, EHC, Respond to Malfunctions.
[(CFR X) Malfunctions of reactor coolant pressure/volume control system.]

K/A Number and Importance: 241000 A4.08 3.5/3.4

Safety Function (1-9) _____

Admin Category (A1-4) _____

Level of Difficulty (1-5) 3

Suggested Testing Environment: Simulator

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

Reference(s): SE-16, Response To EHC Leaks, Rev 4

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

Testing Method: ☐ Simulate ☒ Perform

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

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE
INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. Alarm 105 (I-5) EHC Fluid Reservoir Lo Level, has annunciated
2. An EHC leak has been identified on Unit 1 at Control Valve #1
3. Reactor power has been decreased to 85%

INITIATING CUE:

Shift Supervision directs you to close and isolate Control Valve #1 on Unit 1, per SE-16, Response to EHC Leaks.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

RCIC MANUAL SLOW START WITH HIGH BEARING OIL TEMP

JPM NUMBER: LOJPM3022

REVISION NUMBER: 001

DATE: 1/6/16

Developed By:	Instructor	12/15/15 Date
Validated By:	SME or Instructor	12/15/15 Date
Reviewed By:	Operations Representative	1-6-16 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	1/6/16 Date

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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DAB 1. Task description and number, JPM description and number are identified.

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DAB 3. Performance location specified. (in-plant, control room, simulator, or other)

DAB 4. Initial setup conditions are identified.

DAB 5. Initiating cues (and terminating cues if required) are properly identified.

DAB 6. Task standards identified and verified by SME review.

DAB 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

TAB 8. If an alternate path is used, the task standard contains criteria for successful completion.

TAB 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure S49.1.A	Rev: 25
Procedure S49.9.A	Rev: 29
Procedure S49.1.D	Rev: 42
Procedure ARC-MCR-116-E5	Rev: 00
Procedure _____	Rev: _____

DAB 10. Verify cues both verbal and visual are free of conflict.

TAB 11. Verify performance time is accurate

N/A TAB 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

DAB 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

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

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Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

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D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM replaces LLOJPM0002 Rev. 12. The purpose of this revision is to reformat with the new JPM template and to ensure agreement with latest procedure revision.	9/4/14
001	Added evaluator note and cue stating labeling for HV-55-1F011 is satisfactory per standing order 15-02 plant labeling. Added procedure step numbers.	12/09/15

IV. SIMULATOR SETUP INSTRUCTIONS:

1. Reset the simulator to any IC with reactor pressure greater than 500 psi.
2. Ensure RCIC System is lined-up for automatic operation per S49.1.A
3. When a pump discharge pressure of at least 70.3 psig greater than RPV pressure is achieved, and pump flow rate is approximately 600 gpm with controller in "AUTO," then activate annunciator ARC-MCR-116, RCIC, E5, "RCIC TURBINE BEARING OIL HI TEMP". This can be set up to occur on an automatic trigger.

V. TASK STANDARD STATEMENT:

Manually slow start and place RCIC in full flow test. Remove RCIC from service when high bearing oil temperature annunciates (Alternate Path).

VI. INITIAL CONDITIONS:

1. ST-6-060-390-1 is currently being performed by another operator.
2. S49.9.A, Routine Inspection of RCIC System, has been performed.
3. Vibration Monitoring System is in service.
4. Steam leak detection is operable.
5. S49.1.A, Normal RCIC Line-Up for Automatic Operation, is complete.
6. RCIC is not being run to prime the turbine oil system.
7. RHR is available for Suppression Pool Cooling.
8. A Pre-Job Brief has been performed.
9. RP has been notified of changing radiological conditions due to RCIC System start.

VII. INITIATING CUE STATEMENT (Describe the task clearly):

You are directed by Shift Supervision to place Unit 1 RCIC in full flow test per S49.1.D, by the manual slow start method, using FIC-49-1R600, for a 15 minute PMT following vacuum pump repairs. You are to obtain a discharge pressure at least 70.3 psig greater than RPV pressure, and a pump flow rate of 600 gpm with the controller in "AUTO."

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

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The JPM Start Time clock starts when the candidate acknowledges the initiating cue

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Verify correct revision of procedure being used. **Cue:** Provide copy of S49.1.D.	N/A			
	2. *(2.3)* Verify Suppression Pool level normal (22' to 24.25') **AND** below 95 °F.	Suppression pool level is between 22' and 24.25' on LI-52-140A(B) at Panel 10C626 or LR55-115 at Panel 10C648. Verified by observation that TI-41-101(103) is < 95 °F.			
	3. *(2.4)* Verify RCIC Pump suction is lined up to the CST.	Verified by observation that HV-49-1F010 is open.			
	4. *(4.1.4.1)* **ENSURE** HV-55-1F071, HPCI/RCIC Flush Line To Suppression Pool (TEST OUTBOARD), is closed.	Verifies HV-55-1F071 is closed			
	5. *(4.1.4.2)* **ENSURE** HV-55-1F008, Test Loop Shutoff (TEST ISOL), closed.	Verifies HV-55-1F008 is closed			
	6. *(4.1.4.3)* **ENSURE** HV-49-1F022, RCIC Test Loop Isolation (TEST ISOL), is closed.	Verifies HV-49-1F022 is closed			
Evaluator note: HS-55-1F011 is labeled HV55-1F011 on HPCI 10C-647 panel. If asked provide the following CUE: Shift supervision has determined that the HV55-1F011 and HS-55-1F011 are for the hand switch labeled HV55-1F011, operation may continue per operations standing order 15-02 plant labeling					
	7. **PERFORM** the following to open HV-55-1F011, HPCI/RCIC Test Return To CST (CONDENSATE RETURN):	N/A			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	7a. *(4.2.1.1)* **PLACE** HS-55-111 in OPEN at panel 10C647	HV-55-1F011 HS placed in OPEN			
*	7b. *(4.2.1.2)* **WHEN** HV-55-1F011 is full open **THEN PLACE** HS-55-111 in STOP	HS-55-111 placed in STOP			
*	8. *(4.2.2)* **START** 10P219, Barometric Condenser Vacuum Pump (VACUUM PUMP).	VACUUM PUMP is running.			
*	9. *(4.2.3)* **OPEN** HV-50-1F046, RCIC Lube Oil Cooling Water Supply (COOLING WATER).	HV-50-1F046 is open			
	10. *(4.2.4)* **MONITOR** suppression pool temperature per ST-6-060-390-1, Suppression Pool Temperature Check. **CUE:** If requested, notify operator ST-6-060-390-1 is being performed by an additional operator.	N/A (Provided in initial conditions)			
	11. *(4.2.5)* **IF** required to limit suppression pool temperature any time during this procedure, **THEN PLACE** Suppression Pool Cooling Mode of RHR System in service per S51.8.A, Suppression Pool Cooling Operation (Startup And Shutdown) And Level Control. **CUE:** If requested, inform operator Suppression Pool Cooling is not required	N/A			
	12. *(4.2.6)* **INFORM** HP of changing radiological conditions due to RCIC system start.	N/A (Provided in initial conditions)			
*	13. *(4.3.1)* **PLACE** FIC-49-1R600, RCIC Pump Discharge Flow Controller" (FL) in "MANUAL" **AND SET** to 0%.	FIC-49-1R600 M/A selector switch repositioned to MAN **AND** FIC-49-1R600 "CLOSE" pushbutton depressed until controller output indicates 0%			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	14. *(4.3.2)* **OPEN** HV-50-1F045, RCIC Steam Supply (INLET).	HV-50-1F045 is open.			
	15. **PERFORM** the following to start RCIC turbine:	N/A			
*	15a. *(4.3.3.1)* Slowly **RAISE** the output of FIC-49-1R600 until turbine speed begins to raise as indicated on SI-50-101-1, Turbine Speed (S)	RCIC Turbine speed begins to rise as indicated on SI-50-101-1			
*	15b. *(4.3.3.2)* **WHEN** speed begins to increase, **THROTTLE OPEN** HV-49-1F022, RCIC Full Flow Shutoff (TEST ISOL)	HV-49-1F022 is placed in OPEN and pull-to-stop (and repeated as nec.) as speed indication begins to rise			
*	15c. *(4.3.3.3)* Slowly **INCREASE** output of FIC-49-1R600, FL, to greater than 2200 rpm as indicated on SI-50-101-1, Turbine Speed (S)	FIC-49-1R600 OPEN pushbutton is depressed until RCIC Turbine speed is greater than 2200 rpm on SI-50-101-1			
	EVALUATOR NOTE Step 16 is performed only if HV-49-1F022 will not open, otherwise mark N/A.				
	16. **IF** HV-49-1F022 will **not** open, **THEN PERFORM** the following:	N/A			
	16a. *(4.3.4.1)* **LOWER** output of FIC-49-1R600, "RCIC Pump Discharge Flow Controller" (FL), to approximately 2500 rpm.	SI-50-101-1 indicates approximately 2500 rpm.			
	16b. *(4.3.4.21)* **Throttle OPEN** HV-49-1F022.	HV-49-1F022 is throttled open			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
Evaluator Note: For the next step, the controller in manual should be adjusted such that the needle representing flowrate is within the green band of the controller by the thumbwheel control (upper portion of the contoller). This will ensure a 'Bumpless Transfer'.					
*	17. *(4.3.5)* Slowly **RAISE** output of FIC-49-1R600 to approximately 600 gpm **AND MATCH** setpoint to actual flow.	FIC-49-1R600 OPEN pushbutton depressed until FI-49-1R600-1 indicates between 550 and 650 gpm. Flow controller is adjusted such that when the controller is switched to "AUTO," flow rate changes less than 100 gpm.			
*	18. *(4.3.5)* **THEN PLACE** FIC-49-1R600 in "AUTO."	The M/A selector switch is repositioned to AUTO.			
*	19. *(4.3.6)* **THROTTLE** HV-49-1F022, RCIC Full Flow Test (TEST ISOL) **AND ADJUST** FIC-49-1R600 as necessary to maintain pump discharge pressure at least 70.3 psig over RPV pressure **AND** pump flowrate of 600 gpm.	PI-49-1R601 (DISCH) is at least 70 psig greater than PI-49-1R602 (STEAM) **AND** FI-49-1R600-1 indicates between 590 and 610 gpm.			
EVALUATOR NOTE: Alternate path begins with next step					
	20. ARC-MCR-116, RCIC, Window E5, "RCIC TURBINE BEARING OIL HIGH TEMP," annunciates.	116, RCIC, Window E5, acknowledged.			
EVALUATOR NOTE: Steps 21 through 23 are directed by the ARC					
	21. Verify HV-50-1F046, Lube Oil Cooling Supply Valve, is open.	HV-50-1F046 is open.			
	22. Check temperature of suction source. If possible, then swap to alternate.	N/A			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	23. If RCIC is not needed to maintain RPV level, then remove RCIC from service immediately. **NOTE**: Provide the following cue **ONLY IF** candidate requests direction from SSV **CUE:** RCIC is not required to maintain RPV level.	Candidate determines RCIC must be shutdown.			
EVALUATOR NOTE: If the examinee secures RCIC per Step 4.7 of S49.1.D, then Steps 24 through 26 apply. If the examinee secures RCIC per S49.2.A or just trips the RCIC turbine as a "User Capability" per OP-LG-108-101-1001 and HU-AA-104-101, then Steps 24 through 26 should be marked N/A.					
	24. *(4.7.1)* **PLACE** FIC-49-1R600, RCIC Pump Discharge Flow Controller (FL), in "MANUAL."	FIC-49-1R600, RCIC Pump Discharge Flow Controller (FL), in "MANUAL"			
	25. *(4.7.1)* **ADJUST** FIC-49-1R600 to approximately 2500 rpm, at Panel 10C648.	FIC-49-1R600 adjusted until 2400 to 2600 rpm is indicated at Panel 10C648			
	26. *(4.7.2)* **CLOSE** HV-49-1F022, (TEST ISOL).	HV-49-1F022 is closed			
*	27. *(4.7.3)* **DEPRESS** TURBINE TRIP pushbutton to manually trip RCIC Turbine.	RCIC TURBINE is tripped.			
	28. *(4.7.4)* **CLOSE** HV-50-1F045, "RCIC Steam Supply" (INLET).	HV-50-1F045 is closed			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: RCIC MANUAL SLOW START WITH HIGH BEARING OIL TEMP

JPM Number: LOJPM3022 **Revision Number:** 001

Task Number and Title: 2170020101, Monitor RCIC System Operation (Diagnostic)

K/A Number and Importance: 217000 A2.08 3.0/3.1

Level of Difficulty (1-5) __3__

Suggested Testing Environment: Simulator

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

Reference(s): S49.1.A, Rev: 025, Normal RCIC Line-up For Automatic Operation
S49.9.A, Rev: 029, Routine Inspection of RCIC System
S49.1.D, Rev. 042, RCIC System Full Flow Functional Test and Turbine Oil Priming
ARC-MCR-116-E5, Rev. 000, RCIC TURBINE BEARING OIL HI TEMP

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: __15__ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE
INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. ST-6-060-390-1 is currently being performed by another operator.
2. S49.9.A, Routine Inspection of RCIC System, has been performed.
3. Vibration Monitoring System is in service.
4. Steam leak detection is operable.
5. S49.1.A, Normal RCIC Line-Up for Automatic Operation, is complete.
6. RCIC is not being run to prime the turbine oil system.
7. RHR is available for Suppression Pool Cooling.
8. A Pre-Job Brief has been performed.
9. RP has been notified of changing radiological conditions due to RCIC System start.

INITIATING CUE STATEMENT:

You are directed by Shift Supervision to place Unit 1 RCIC in full flow test per S49.1.D, by the manual slow start method, using FIC-49-1R600, for a 15 minute PMT following vacuum pump repairs. You are to obtain a discharge pressure at least 70.3 psig greater than RPV pressure, and a pump flow rate of 600 gpm with the controller in "AUTO."

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

SHUTDOWN THE D11 DIESEL GENERATOR

JPM NUMBER: LOJPM3027

REVISION NUMBER: 001

DATE: 1/6/16

Developed By:	Instructor	12/8/15 Date
Validated By:	Jim Racioppo SME or Instructor	12/8/15 Date
Reviewed By:	Operations Representative	1-6-16 Date
Reviewed By:	N/A ER Representative	N/A Date
Approved By:	Training Department	1/6/16 Date

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✓ 4. Initial setup conditions are identified.

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✓ 6. Task standards identified and verified by SME review.

✓ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

✓ 8. If an alternate path is used, the task standard contains criteria for successful completion.

✓ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure S92.2.N Rev: 34
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

Not for RAC10PM

Not 10. Verify cues both verbal and visual are free of conflict.

Not 11. Verify performance time is accurate.

Not 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

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Subsequent validations, sign and date below:

Not for Racicano	12/15/15
SME / Instructor	Date
SME / Instructor	Date
SME / Instructor	Date

II. RECORD OF TEMPORARY CHANGES:

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D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM replaces LLOJPM0027 Rev. 7. The purpose of this revision is to reformat in accordance with the new JPM template and to ensure agreement with latest procedure revision.	9/10/14
001	Modified for NRC to include section 4.5 shutdown from auto start due to loss of off site power	12/08/15

IV. SIMULATOR SETUP INSTRUCTIONS:

1. Reset to any power IC.
2. Start the D11 Diesel by inserting malfunctions to simultaneously trip 101-D11 and 201-D11 breakers. After Diesel is started and carrying the bus, delete malfunctions.
3. Provide Marked-up copy of S92.2.N, Rev 34, completed through step 4.1.2.

V. TASK STANDARD STATEMENT:

D11 Diesel Generator manually secured as follows

- D11 Diesel Generator is placed in droop
- D-11 bus is powered from 101-D11 breaker
- load is reduced to between 100-300 KW and D11 Diesel Output breaker opened.

VI. INITIAL CONDITIONS:

The D11 Diesel Generator started due to a loss of all Off Site power and has been operating between 2000 and 2500 KW two hours. Loads were removed from D11 bus 5 minutes ago

VII. INITIATING CUE:

Shift Supervision directs you to align D11 bus to the 101 feed and shutdown the D11 Diesel Generator from the MCR per S92.2.N. starting at section 4.5.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

* Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Obtain Marked-up copy of S92.2.N. **CUE:** Provide a copy of S92.2.N marked up through 4.1.2.	N/A			
*	2. *(4.5.1)* **DEPRESS** PB/A(B,C,D)G001, "Diesel Generator Auto Start "Signal Bypass."	PB/AG001, "Diesel Generator Auto Start Signal Bypass." Is depressed and yellow light above PB/A G001 illuminates			
*	3. *(4.5.21)***PLACE** 101-A(B,C,D)G501/CS, "Diesel Generator Control," to START to convert governor to droop mode.	101- AG501/CS, "Diesel Generator Control," to START (Red flagged)			
*	4. *(4.5.3)* **INSERT** synchroscope switch handle into Synchroscope Switch for appropriate *01-D** Safeguard Bus Feeder breaker **AND** place to "ON."	Synchroscope handle is inserted in the 101-D11 synchroscope location and turned on (clockwise)			
	5. *(4.5.4)* **OBSERVE** appropriate Synchroscope operates properly: Synchroscope rotating **WHEN** synchroscope is at 180 degrees, **THEN** both lights are Lit **AND** fully bright **WHEN** synchroscope is at 0 degrees, **THEN** both lights **not** Lit	Observe - **WHEN** synchroscope is at 180 degrees, **THEN** both lights are Lit **AND** fully bright - **WHEN** synchroscope is at 0 degrees, **THEN** both lights **not** Lit			
	6. **VERIFY** speed controls operate properly as follows:	N/A			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	7. *(4.5.5.1)* **OBSERVE** diesel generator frequency as indicated by syncroscope	diesel generator frequency as indicated by observed by syncroscope			
	8. *(4.5.5.2)* **PLACE** 165-A G501/CS, "Diesel Generator Speed Governor Control," to "RAISE" **AND** to "LOWER" **VERIFY** change in syncroscope rotation rate **OR** direction of rotation	As 165-A G501/CS, "Diesel Generator Speed Governor Control," is placed to "RAISE" **AND** to "LOWER" **VERIFY** change in syncroscope rotation rate **OR** direction of rotation			
	9. **VERIFY** voltage controls operating properly as follows:	N/A			
	10. *(4.5.6.1)* **OBSERVE** diesel generator voltage as indicated on Running Voltmeter	Running volt meter checked			
	11. *(4.5.6.2)* **PLACE** 170-A G502/CS, VOLTAGE REGULATOR, to "RAISE" **AND** to "LOWER" **VERIFY** change on Running Voltage meter.	170-A G502/CS, VOLTAGE REGULATOR, placed to "RAISE" **AND** to "LOWER" Change on running volt meter observed			
*	12. *(4.5.7)* **ADJUST** engine speed using 165-A G501/CS, "Diesel Generator Speed Governor Control," until synchroscope is rotating slowly in the SLOW direction (counterclockwise).	Engine speed adjusted with 165-A G501/CS, "Diesel Generator Speed Governor Control," to obtain synchroscope rotating slowly in the slow direction			
*	13. *(4.5.8)* **ADJUST** diesel generator voltage using 170-A G502/CS, "Diesel Generator Voltage Regulator," until Synchronizing Running Voltmeter is slightly higher than Synchronizing Incoming Voltmeter	170-A G502/CS, "Diesel Generator Voltage Regulator," used to adjust voltage such that running is slightly higher than incoming			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	14. *(4.5.9)* **WHEN** Synchroscope is within 3 degrees before 12 o'clock, **THEN CLOSE** appropriate Bus Feeder Breaker.	101-D11 bus breaker closed when Synchroscope is within 3 degrees before 12 o'clock			
	15. *(4.5.10)* **TURN** Synchroscope Switch to "OFF."	Synchroscope Switch placed in "OFF."			
	16. *(4.5.11)* **RECORD** 101(201) Tap Changer Position for applicable SFGD feed. Position: _____	Tap changer position recorded			
	17. *(4.6.1)* **IF** diesel generator has been operating at **no** load **OR** loaded less than 855 KW for greater than 30 minutes, **THEN LOAD** diesel generator to between 1680 to 2800 KW for a minimum of 2 hours by adjusting 165-A(B,C,D)G501/CS, (KW) SPEED GOVERNOR Cue: initial conditions state D11 had been running at 2000 to 2500 KW for 2 hours	N/A			
	18. *(4.6.1.1)* Gradually **RAISE** diesel generator KVAR load to desired value by adjusting 170-A(B,C,D)G502/CS, (KVAR) VOLTAGE REGULATOR.	N/A			
	19. *(4.6.1.2)* Periodically **CHECK** engine sump lubricating oil level at FULL level running mark on dipstick. **IF** level is below FULL level running mark, **THEN OPEN** 20-*130A, "Lube Oil Make Up Valve." _____**WHEN** level at FULL level running mark, **THEN CLOSE** 20-*130A.	N/A			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	20. *(4.6.2)* **IF** diesel has been operating above 1680 KW for at least the time listed in step 4.6.1, **THEN LOWER** load to 1400 KW for 5 minutes by adjusting 165-A G502/CS (KW) SPEED GOVERNOR **AND MAINTAIN** reactive load below 1050 KVAR using 170-A G502/CS (KVAR), VOLTAGE REGULATOR. **CUE:** After load has been reduced, "5 minutes have passed."	Speed Governor Control Switch, 165-AG501/CS is placed to "LOWER" to slowly reduce KW load to 1400 **AND** 170-AG502/CS is placed in "LOWER" to maintain KVAR less than 1050.			
	21. *(4.6.3)* Slowly **REDUCE** KW load by turning 165-A G501/CS, "Diesel Generator Speed Governor Control Switch," to "LOWER".	Speed Governor Control Switch, 165-AG501/CS is placed to "LOWER" to slowly reduce KW load.			
	22. *(4.6.4)* Slowly **REDUCE** KVARS load by turning 170-A G502/CS, "Diesel Generator Voltage Regulator" to "LOWER."	Voltage Regulator Control Switch, 170-AG502/CS is placed to "LOWER" to slowly reduce KVARS as indicated on VAR/AG501/2.			
*	23. *(4.6.5)* **WHEN** KW **AND** KVAR loads are near zero (100 and 300), **THEN** OPEN appropriate Diesel Generator Breaker.	When KW and KVAR near zero,152-11507/CS (D11 D/G output breaker) is placed in TRIP.			
EVALUATOR NOTE: Candidate should recognize that step 4.7.2 should be performed to shutdown diesel from MCR. If candidate asks, provide **CUE:** "You are directed to shutdown D11 Diesel from the MCR".					
*	24. *(4.7.2)* **IF** shutting down engine from the Main Control Room, **THEN TURN** 101-A(B,C,D)G501/CS, "Diesel Generator Control" to STOP" **AND VERIFY** diesel generator shuts down.	Diesel Generator Control Switch 101-A G501/CS is placed in "STOP".			

ELEMENT		STANDARD	SAT	UNSAT	COMMENT NUMBER
	25. *(4.7.3)* **ENSURE** 143-AX103 (BX103) "TAP CHANGER" in "AUTO" for applicable SFGD feed.	143-AX103, "101 Safe-guard Transformer Tap Changer Selector: in "AUTO."			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: SHUTDOWN THE D11 DIESEL GENERATOR

JPM Number: LOJPM3027 **Revision Number:** 001

Task Number and Title: 2640040101, Shutdown A Diesel Generator

K/A Number and Importance: 264000 A4.04 3.7/3.7

Safety Function (1-9) _____

Admin Category (A1-4) _____

Level of Difficulty (1-5) __3__

Suggested Testing Environment: Simulator

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

Reference(s): S92.2.N, Shutdown of the Diesel Generators, Rev. 34

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: __15__ minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

IX. INITIAL CONDITIONS:

The D11 Diesel Generator started due to a loss of all Off Site power and has been operating between 2000 and 2500 KW two hours. Loads were removed from D11 bus 5 minutes ago

X. INITIATING CUE:

Shift Supervision directs you to align D11 bus to the 101 feed and shutdown the D11 Diesel Generator from the MCR per S92.2.N. starting at section 4.5.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

PERFORM A GROUP 2 NSSSS ISOLATION RESET

JPM Number: LOJPM3071

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	10/2/15 Date
Validated By:	SME or Instructor	10/2/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, simulator, or other)

R 4. Initial setup conditions are identified.

R 5. Initiating cues (and terminating cues if required) are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

N/AR 8. If an alternate path is used, the task standard contains criteria for successful completion.

R 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure GP 8.3 Rev: 11
Procedure S51.8.B Rev: 76
Procedure ON-121 Rev: 29
Procedure _____ Rev: _____
Procedure _____ Rev: _____

R 10. Verify cues both verbal and visual are free of conflict.

R 11. Verify performance time is accurate

N/A 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

R 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM supersedes LLOJPM0071 Rev. 006. Revised to new template and to align with latest procedure revision.	07/12/15

IV. TASK STANDARD:

Group 2 NSSSS Isolation Reset with '1A' RHR re-aligned to be returned to Shutdown Cooling.

V. SIMULATOR SETUP

1. Plant is shutdown, with '1A' RHR in Shutdown Cooling.
2. Insert **MNS157A**, and **MNS157B** Inadvertent Group 2 NSSSS Isolations.
3. Acknowledge alarms, verify '1A' RHR pump tripped with the F008 and F009 valves closed.
4. **DELETE** malfunctions **MNS157A** and **MNS157B** to allow NSSSS Group 2 isolation reset.
5. Provide Marked-up copy of S51.8.B, Rev 76, completed up through step 4.4.30 and SDC tags to valves listed in step 4.2.2.
6. Apply mousetraps to HV-51-1F024A (step 4.3.1), HV-51-1F006B, (step 4.4.2), secured Recirc Pump Suction and Discharge Valves (4.4.13), and running RHRSW Pump, Inlet and Outlet Valves.

VI. INITIAL CONDITIONS:

1. Unit _1__ is SHUTDOWN.
2. '1A' RHR Pump was in Shutdown Cooling when an inadvertent Group 2 Isolation occurred.
3. The CRS has entered ON-121, Loss of Shutdown Cooling.

VII. INITIATING CUE:

Per ON-121 step 2.1.1 Shift Supervision directs you to perform a Group 2 NSSSS Isolation Reset.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

* Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATORS NOTE: A Group 2 NSSSS Isolation reset per GP-8.3, Isolation Resets, requires a R1 - Blue/Green Reset. (GP 8.3 Table Valves can be performed in any order) ON-121, Loss of Shutdown Cooling, should be opened and available at the CRS desk.					
	1. Obtain current revision of GP-8, Primary and Secondary Containment Isolation Verification and Reset.	Candidate locates GP-8, and determines Group 2 isolation reset is R1 and references GP-8.3, Isolation Resets.			
	2. *(3.2.2.1)* Place the following handswitches to close:	N/A			
*	3. HV-41-1F084 "Main Steam"(DRAIN SAMPLE INBOARD)	HV-41-1F084 "Main Steam"(DRAIN SAMPLE INBOARD) in CLOSE.			
*	4. HV-51-1F040 "A RHR Drain to R/W outboard isol. vlv. (OUTBOARD)	HV-51-1F040 "A RHR Drain to R/W outboard isol. vlv. (OUTBOARD) in CLOSE.			
*	5. HV-51-1F079A "A RHR Heat Exchanger" (SAMPLE INBOARD)	HV-51-1F079A "A RHR Heat Exchanger" (SAMPLE INBOARD) in CLOSE.			
*	6. HV-51-1F079B "B RHR Heat Exchanger" (SAMPLE INBOARD)	HV-51-1F079B "B RHR Heat Exchanger" (SAMPLE INBOARD) in CLOSE.			
*	7. SV-57-133 "Cont Atmos Sample" (ISOL A)	SV-57-133 "Cont Atmos Sample" (ISOL A) in CLOSE.			
*	8. SV-57-183,SV-57-191 "Cont Atmos Sample" (ISOL A)	SV-57-183,SV-57-191 "Cont Atmos Sample" (ISOL A) in CLOSE.			
*	9. SV-57-132,SV-57-134,SV-57-150 "Cont Atmos Sample" (ISOL B)	SV-57-132,SV-57-134,SV-57-150 "Cont Atmos Sample" (ISOL B) in CLOSE.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	10. SV-57-181 "Cont Atmos Sample" (ISOL B)	SV-57-181 "Cont Atmos Sample" (ISOL B) in CLOSE.			
*	11. HV-41-1F085 "Main Steam" (DRAIN SAMPLE OUTBOARD)	HV-41-1F085 "Main Steam" (DRAIN SAMPLE OUTBOARD) in CLOSE.			
*	12. HV-51-1F080A "A RHR Heat Exchanger" (SAMPLE OUTBOARD)	HV-51-1F080A "A RHR Heat Exchanger" (SAMPLE OUTBOARD) in CLOSE.			
*	13. HV-51-1F080B "B RHR Heat Exchanger" (SAMPLE OUTBOARD)	HV-51-1F080B "B RHR Heat Exchanger" (SAMPLE OUTBOARD) in CLOSE.			
*	14. HS-57-187 "Atmosphere Sample" (SUPP POOL ISOL)	HS-57-187 "Atmosphere Sample" (SUPP POOL ISOL) in CLOSE.			
*	15. HS-57-153 "Atmosphere Sample" (DRYWELL ISOL)	HS-57-153 "Atmosphere Sample" (DRYWELL ISOL) in CLOSE.			
*	16. HV-43-1F019 "Recirc Sample" (INBOARD)	HV-43-1F019 "Recirc Sample" (INBOARD) in CLOSE.			
*	17. HV-43-1F020 "Recirc Sample" (OUTBOARD)	HV-43-1F020 "Recirc Sample" (OUTBOARD) in CLOSE.			
*	18. *(3.2.2.2)* Depress the Isolation Reset pushbutton B21-S32A.	Buttons B21-S32A depressed.			
*	19. *(3.2.2.2)* Depress the Isolation Reset pushbutton B21-S32D.	Buttons B21-S32D depressed.			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: PERFORM A GROUP 2 NSSSS ISOLATION RESET

JPM Number: LOJPM3071 **Revision Number:** 000

Task Number and Title: 2956030401, Reset a NSSSS Isolation

K/A Number and Importance: 223002 A4.03 3.6/3.5

Safety Function (1-9) __5__

Admin Category (A1-4) _____

Level of Difficulty (1-5) __2.5__

Suggested Testing Environment: Simulator

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

Reference(s): GP-8.3, Isolation Resets, Rev 11

ON-121, Loss of Shutdown Cooling, Rev 29

S51.8.B, Shutdown Cooling/Reactor Coolant Circulation Operation Start-Up and Shutdown, Rev 76.

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: _15_ minutes **Actual Time Used:** _____ minutes

EVALUATION SUMMARY:

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

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

Comments:_____

_____

_____

_____

_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. Unit _1__ is SHUTDOWN.
2. '1A' RHR Pump was in Shutdown Cooling when an inadvertent Group 2 Isolation occurred.
3. The CRS has entered ON-121, Loss of Shutdown Cooling.

INITIATING CUE:

Shift Supervision directs you to perform a Group 2 NSSSS Isolation Reset.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

RESETTING ASD SPEED HOLD

JPM NUMBER: LOJPM3529

REVISION NUMBER: 002

DATE: 1/6/16

Developed By:	Byers Instructor	12/16/15 Date
Validated By:	SME or Instructor	12/16/15 Date
Reviewed By:	Operations Representative	1-6-16 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	1-6-16 Date

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

✓ 1. Task description and number, JPM description and number are identified.

✓ 2. Knowledge and Abilities (K/A) references are included.

✓ 3. Performance location specified. (in-plant, control room, simulator, or other)

✓ 4. Initial setup conditions are identified.

✓ 5. Initiating cues (and terminating cues if required) are properly identified.

✓ 6. Task standards identified and verified by SME review.

✓ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

✓ 8. If an alternate path is used, the task standard contains criteria for successful completion.

✓ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure S43.0.A	Rev: 25
Procedure S43.0.D	Rev: 18
Procedure S43.2.A	Rev: 33
Procedure _____	Rev: _____
Procedure _____	Rev: _____

✓ 10. Verify cues both verbal and visual are free of conflict.

✓ 11. Verify performance time is accurate

✓ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

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

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence.

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision.

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223.

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM replaces LLOJPM0529 Rev. 0. Revised to new template and to align with latest procedure revision.	9/5/14
001	Revised to new template and to align with latest procedure revision.	10/23/15
002	Revised to add additional detail for step number and implementation	12/16/15

IV. SIMULATOR SETUP INSTRUCTIONS:

1. Reset the Simulator to IC-17 (or any IC greater than 30% power is acceptable)
2. Place the '1B' Adjustable Speed Drive (ASD) Speed Hold Switch to "TRIP"
3. Acknowledge annunciators
4. Establish a manual trigger #1 for actuating ANNUNCIATOR 111 G-3, "1A/1B RECIRC PUMP MOTOR HI TEMP" (At the lead evaluator discretion, the alarm may be placed on an automatic trigger with a time delay [a suggested auto trigger is the 1 RPM rise pushbutton with a 30 second activation time] If used in an Exam Set of JPMs, any trigger number can be used).

V. TASK STANDARD STATEMENT:

The '1B' Recirc Pump ASD Speed Hold is reset and the '1B' Recirc Pump is Shutdown in accordance with S43.2.A in response to a high motor temperature condition.

VI. INITIAL CONDITIONS:

1. A manual '1B' ASD Speed Hold was placed on the '1B' Recirc Pump as a precautionary measure while I&C took ASD Cell data to satisfy warranty requirements.
2. Cell data collection is now complete and the ASD has been returned to a normal alignment.

VII. INITIATING CUE STATEMENT

You are directed by the CRS to reset the ASD Speed Hold on '1B' Recirc Pump in accordance with S43.0.A, Resetting ASD Speed Hold.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Provide the following: • Individual Briefing Sheet	N/A			
	2. Obtain current revision of S43.0.A, Resetting ASD Speed Hold **CUE:** Provide copy of S43.0.A, when candidate demonstrates capability of obtaining correct procedure	Candidate obtains current revision of S43.0.A, Resetting ASD Speed Hold			
	3. *(S43.0.A step 4.1.1)* **VERIFY** all prerequisites satisfied. **CUE:** If asked report there are No runback signal present	Verified all prerequisites satisfied.			
	4. *(S43.0.A step 4.1.2)* **VERIFY** procedure being performed on correct unit/train ('B' Recirc)	Verified 'B' Recirc System			
	5. *(S43.0.A step 4.2.2)* **VERIFY** that speed demand is the same (+/- 5 rpm) as motor speed as indicated on XI-043-*03A, "ASD *A(B) MCR HMI" on panel *0C626 **OR** XR-043-*01A "ASD *A(B) Speed/Demand Recorder" at panel *0C602.	"1B" Recirc Pump motor speed demand is verified to be within +/- 5 rpm of speed indicated on XI-043-13B on 10C626 OR XR-043-101B recorder at 10C602.			
*	6. *(S43.0.A step 4.2.3)* Momentarily **PLACE** SS-043-104B, "1B ASD Speed Hold/Reset Selector Switch" to "RESET" **THEN RELEASE**	SS-043-104B, "1B ASD Speed Hold/Reset Selector Switch" placed in "RESET" and then released.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	7. *(S43.0.A step 4.2.4)* **VERIFY** the following alarm will reset. ARC-MCR-112 C3, 1B RECIRC ASD SPEED HOLD	ARC-MCR-112 C3, 1B RECIRC ASD SPEED HOLD alarm is reset			
	8. *(S43.0.A step 4.2.5)* **VERIFY** that 'HOLD' is **not** displayed next to the "Speed Demand" indication under the Output Power and Motor on XI-043-103B.	'HOLD' is **not** displayed on XI-043-103B.			
	9. *(S43.0.A step 4.2.6* **PRESS** PB-043-107B, "1B ASD Fault Reset" pushbutton two times to clear any applicable alarms.*)*	PB-043-107B, "1B ASD Fault Reset" pushbutton is pressed two times to clear applicable alarms.			
	10. **VERIFY** '1B' ASD control is restored as follows:	N/A			
	10a. *(S43.0.A step 4.3.1)* **LOWER** '1B' ASD motor speed 1 RPM by depressing PB-043-108B-4, "1B Rx Recirc Pump Speed Lower-Low"	PB-043-108B-4, '1B' Rx Recirc Pump Speed Lower-Low" pushbutton pressed once.			
	10b. *(S43.0.A step 4.3.2)* **VERIFY** '1B' ASD motor speed lowers approximately 1 RPM on XR-043-101B or XI-043-103B.	Verification made that motor speed lowers approximately 1 RPM.			
	10c. *(S43.0.A step 4.3.3)* **RAISE** '1B' ASD motor speed 1 RPM by depressing PB-043-108B-1, "1B Rx Recirc Pump Speed Raise-Low".	PB-043-108B-1, '1B' Rx Recirc Pump Speed Raise-Low" pushbutton pressed once.			
	10d. *(S43.0.A step 4.3.4)* **VERIFY** '1B' ASD motor speed raises approximately 1 RPM on XR-043-101B or XI-043-103B, Remote HMI.	Verification made that motor speed raises approximately 1 RPM.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	11. *(S43.0.A step 4.3.5)* **IF** required, **THEN PRESS** PB-043-107B, "1B ASD Fault Reset" pushbutton two times to clear any applicable HMI alarms that may be present.	If required, PB-043-107B, "1B ASD Fault Reset" pushbutton pressed twice and all alarms cleared.			
	ALTERNATE PATH PORTION OF THE JPM BEGINS IN THE NEXT STEP WITH INSERTION OF ANNUNCIATOR 111 G-3 **INSTRUCTOR: INSERT** ANNUNCIATOR 111 G-3, 1A/1B RECIRC PUMP MOTOR HI TEMP.				
	12. **ACKNOWLEDGE** ANNUNCIATOR 111-G-3 "1A/1B RECIRC PUMP MOTOR HI TEMP" and obtain S43.0.D, Response to Recirc Pump Motor High Temperature Condition	Operator references ARC-111 G-3 and obtains S43.0.D			
	13. *(S43.0.D step 4.2.1)* **UTILIZE** to XI-036-101 at panel 10C614 to determine cause of alarm **CUE:** When DAS screen is referenced, inform candidate that window for "Recirc Pump Motor and Seal Temperature" is **RED**. **CUE: When** window for "Recirc Pump Motor and Seal Temperature is selected tell candidate that TE-043-157B "Recirc Pump B Motor Lower Guide Bearing" is reading **210**°F up slow And TE-043-152B, "Recirc Pump Motor Upper Guide Bearing" is reading **205**°F up slow	DAS screen Window "Recirc Pump Motor and Seal Temperature" selected			
	14. *(S43.0.D step 4.2.2)* **RESPOND** to alarms per step S43.0.D, STEP 4.3.	S43.0.D Step 4.3 referenced			
	14a. *(S43.0.D step 4.3.1.1)* **IF** at least 2 bearing temperatures exceed 200°F **THEN CONTINUE**	N/A.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	14b. *(S43.0.D step 4.2.1)* **TRIP** Recirc Pump per S43.2.A, Shutdown of a Recirc Pump **CUE:** If asked, TS 3.4.1.1 will be referenced by the CRS	Procedure S43.2.A is obtained			
EVALUATORS NOTE: If candidate elects to trip the '1B' Recirc Pump immediately and perform follow up actions per S43.2.A, this is considered acceptable given the high motor temperature condition. The following steps are located in S43.2.A, Shutdown of a Recirculation Pump					
	14. *(S43.2.A step 4.1)* **VERIFY** all prerequisites satisfied **CUE:** If asked, inform that S43.2.A step 4.3 is being performed by the CRS	S43.2.A prerequisites referenced			
	15. *(S43.2.A step 4.4.1)* **ENSURE** that recirc pump is at min speed, (466 RPM) as indicated on recorder XR-043-*01A(B), "ASD *A(B) Speed Demand Recorder" on panel 10C602.	'1B' ASD "LOWER" Pushbuttons used to lower '1B' Recirc Pump speed to 466 RPM			
*	16. *(S43.2.A step 4.4.2)* **SECURE** the *A(B) ASD system via push button PB-043-*02A(B), '1A'(B) ASD Normal Stop" on 10C602.	'1B' ASD Normal Stop PB-043-102B depressed Examinee may use the "1B" ASD 13.2 KV Brkr HS to trip if they elect to secure immediately.			
	17. *(S43.2.A step 4.4.2)* **VERIFY** that the *A(B) ASD 13.2 KV breaker opens	'1B' ASD 13.2 KV breaker is verified open			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: RESETTING ASD SPEED HOLD

JPM Number: LOJPM3529 **Revision Number:** 002

Task Number and Title: 20201140401 Resetting ASD Speed Hold

K/A Number and Importance:			
	202002	K4.03	3.0/3.0
	202001	A1.01	3.6/3.5

Safety Function (1-9) __1__

Admin Category (A1-4) _____

Level of Difficulty (1-5) __2.5__

Suggested Testing Environment: Simulator

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

Reference(s): S43.0.A, RESETTING ASD SPEED HOLD RESET, Rev 25
S43.0.D, RESPONSE TO RECIRC PUMP MOTOR HI TEMP CONDITION, Rev 18
S43.2.A, SHUTDOWN OF A RECIRCULATION PUMP, Rev 33

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: __15__ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. A manual '1B' ASD Speed Hold was placed on the '1B' Recirc Pump as a precautionary measure while I&C took ASD Cell data to satisfy warranty requirements.
2. Cell data collection is now complete and the ASD has been returned to a normal alignment.

INITIATING CUE STATEMENT

You are directed by the CRS to reset the ASD Speed Hold on '1B' Recirc Pump in accordance with S43.0.A, Resetting ASD Speed Hold.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

ALTERNATE COOLING OF RECW HEAT EXCHANGERS

JPM Number: LOJPM3052

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	10/2/15 Date
Validated By:	SME or Instructor	10/2/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, simulator, or other)

R 4. Initial setup conditions are identified.

R 5. Initiating cues (and terminating cues if required) are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

N/A 8. If an alternate path is used, the task standard contains criteria for successful completion.

R 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure E-10/20 Rev: 53
Procedure S11.8.A Rev: 15
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

R 10. Verify cues both verbal and visual are free of conflict.

R 11. Verify performance time is accurate

N/A 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

R 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM supersedes LLOJPM0052 Rev. 8. Revised to new template and to align with latest procedure revision.	07/12/15

IV. TASK STANDARD:

Unit 1 and Unit 2 'A' RECW Heat Exchangers supplied by the ESW System.

V. SIMULATOR SETUP

1. Reset simulator to any IC.
2. Insert malfunction **MED261**, Loss of Offsite Power
3. Stabilize the plant.
4. Ensure all ESW Pumps running
5. Provide marked-up copy of E10/20 Initial Actions 2.1 through 2.13 completed.

VI. INITIAL CONDITIONS:

1. A Loss Of Offsite Power (LOOP) has occurred.
2. Unit 1 and Unit 2 Reactors are scrammed.
3. E10/20 Initial Actions 2.2 through 2.13 have been completed.
4. Drywell pressure and temperature are rising
5. '1A' RECW Heat Exchanger is in service.

VII. INITIATING CUE:

The Shift Manager directs you to supply ESW to the U/1 'A' RECW Heat Exchanger, per S11.8.A, Alternate Cooling of RECW Heat Exchangers.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATORS NOTE: E-10/20, Loss of Offsite Power, step 2.14.1 directs establishing ESW flow to RECW Heat Exchangers, per S11.8.A, if required. With the Drywell Chilled Water system unavailable, cooling to the Drywell is required by RECW. The following steps are directed by S11.8.A, Alternate Cooling of RECW Heat Exchangers, step 4.2 for Unit #1					
	1. Obtain current revision of S11.8.A, Alternate Cooling of RECW Heat Exchangers. **CUE:** Candidate is given a copy of S11.8.A, Alternate Cooling of RECW Heat Exchangers, when knowledge of the correct location of procedure is demonstrated. **CUE:** If asked, inform candidate that other operators will monitor temperatures in the plant as required for S11.8.A Precautions 3.2, 3.3 and 3.4.	If JPM is being Pre briefed this step is N/A Candidate demonstrates ability (actual or discuss) to locate S11.8.A, Alternate Cooling of RECW Heat Exchangers.			
*	2. *(Step 4.2.1)* **CLOSE** 10-1004A(B), "A(B) RECW Hx SW Supply," (207-R12-201) to isolate flow to the out of service RECW Heat Exchanger. **CUE:** EO reports 10-1004B is closed.	EO directed to close 10-1004B (1B RECW Hx O.O.S.)			
EVALUATORS NOTE: The following step will annunciate ARC-MCR-011 C-1 ESW Loop B Hi Diff Flow.					
*	3. *(Step 4.2.2)* **OPEN** HV-11-127 "RECW Heat Exchangers U/1 Return to ESW B" (UNIT 1 RET LOOP B).	HV-11-127 open.			
*	4. *(Step 4.2.3)* **OPEN** HV-11-128 "ESW B to U/1 RECW Heat Exchanger" (UNIT 1 SUPPLY), via key lock hand switch.	HV-11-128 open.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	5. *(Step 4.2.4)* **OPEN** HV-11-124, "ESW B to U/1 RECW Heat Exchanger" (UNIT 1 SUPPLY), via key lock hand switch.	HV-11-124 open.			
	6. *(Step 4.2.5)* **CLOSE** 10-1407 "SW Supply to RECW HTX Block Valve" (207-R12-201). **CUE:** EO reports 10-1407 is closed.	EO directed to close 10-1407.			
*	7. *(Step 4.2.6)* **CLOSE** HV-10-115 "RECW Heat Exchangers U/1 Shutoff". (UNIT 1 RET U/1 SW).	HV-10-115 closed.			
*	8. *(Step 4.2.7)* **CLOSE** 13-1011B "A(B) RECW Hx SW Supply" (207-R12-201) to isolate flow to the out of service RECW Heat Exchanger. **CUE:** EO reports 13-1011B is closed.	EO directed to close 13-1011B. (1B RECW Hx O.O.S.)			
*	9. *(Step 4.2.8)* **CLOSE** 13-1012B "A(B) RECW Hx SW Supply" (207-R12-201) to isolate flow to the out of service RECW Heat Exchanger. **CUE:** EO reports 13-1012B is closed.	EO directed to close 13-1012B. (1B RECW Hx O.O.S.)			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: ALTERNATE COOLING OF RECW HEAT EXCHANGERS

JPM Number: LOJPM3052 **Revision Number:** 000

Task Number and Title: 2000450401, (E10/20), Actions For A Loss Of Offsite Power (LO)

K/A Number and Importance: 295018 A1.01 3.3/3.4
400000 A2.01 3.3/3.4

Safety Function (1-9) 8

Admin Category (A1-4) N/A

Level of Difficulty (1-5) 2.5

Suggested Testing Environment: Simulator

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

Reference(s): E10/20, Loss Of Offsite Power, Rev. 53.
S11.8.A, Alternate Cooling Of RECW Heat Exchangers, Rev. 15

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

Testing Method: ☐ Simulate ☒ Perform

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

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. A Loss Of Offsite Power (LOOP) has occurred.
2. Unit 1 and Unit 2 Reactors are scrammed.
3. E10/20 Initial Actions 2.2 through 2.13 have been completed.
4. Drywell pressure and temperature are rising
5. '1A' RECW Heat Exchanger is in service.

INITIATING CUE:

The Shift Manager directs you to supply ESW to the U/1 'A' RECW Heat Exchanger, per S11.8.A, Alternate Cooling of RECW Heat Exchangers.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

STANDBY GAS TREATMENT MANUAL STARTUP
WITH CHARCOAL ENCLOSURE HI TEMP

JPM NUMBER: LOJPM3528

REVISION NUMBER: 001

DATE: 1/6/16

Developed By:	Instructor	12/15/15 Date
Validated By:	SME or Instructor	12/15/15 Date
Reviewed By:	Operations Representative	1-6-16 Date
Reviewed By:	EP Representative	N/A Date
Approved By:	Training Department	1/6/16 Date

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

DJB 1. Task description and number, JPM description and number are identified.

DJB 2. Knowledge and Abilities (K/A) references are included.

DJB 3. Performance location specified. (in-plant, control room, simulator, or other)

DJB 4. Initial setup conditions are identified.

DJB 5. Initiating cues (and terminating cues if required) are properly identified.

DJB 6. Task standards identified and verified by SME review.

DJB 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

DJB 8. If an alternate path is used, the task standard contains criteria for successful completion.

DJB 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure S76.8.A Rev: 19
Procedure S76.7.B Rev: 13
Procedure ARC-MCR-002 H5 Rev: 00
Procedure _____ Rev: _____
Procedure _____ Rev: _____

DJB 10. Verify cues both verbal and visual are free of conflict.

DJB 11. Verify performance time is accurate.

N/A DJB 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

DJB 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence.

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision.

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223.

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

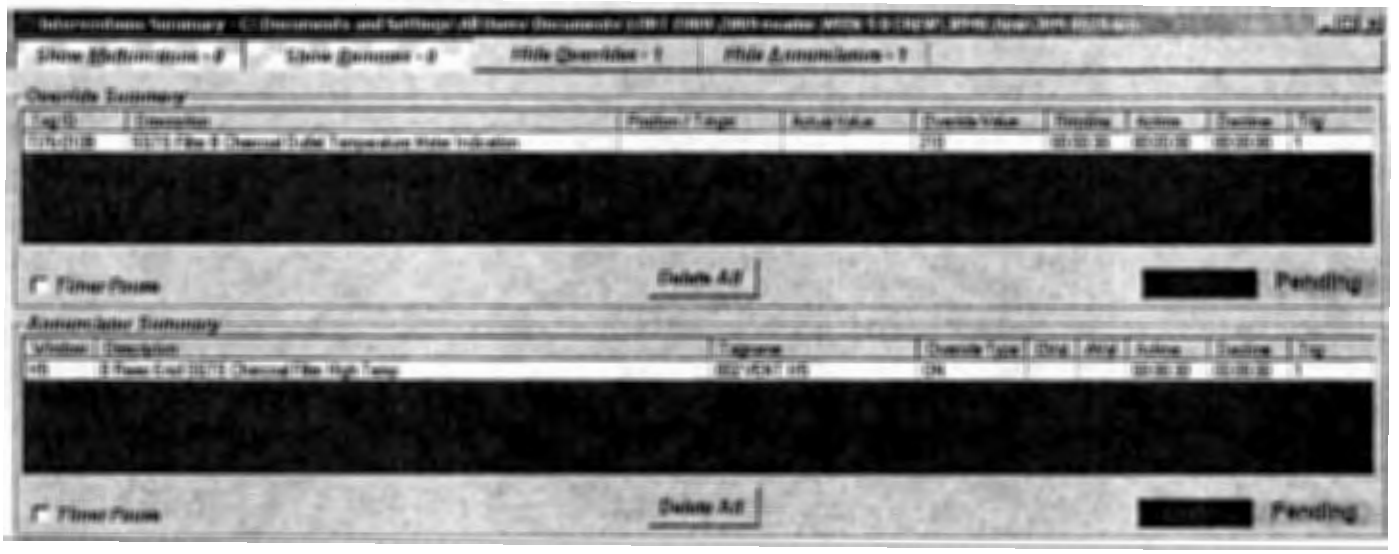
Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM replaces LLOJPM0528 Rev. 0. The purpose of this revision is to reformat in accordance with the new JPM template and to ensure agreement with latest procedure revision.	9/4/14
001	Minor editorial changes per NRC	12/09/15

IV. SIMULATOR SETUP INSTRUCTIONS:

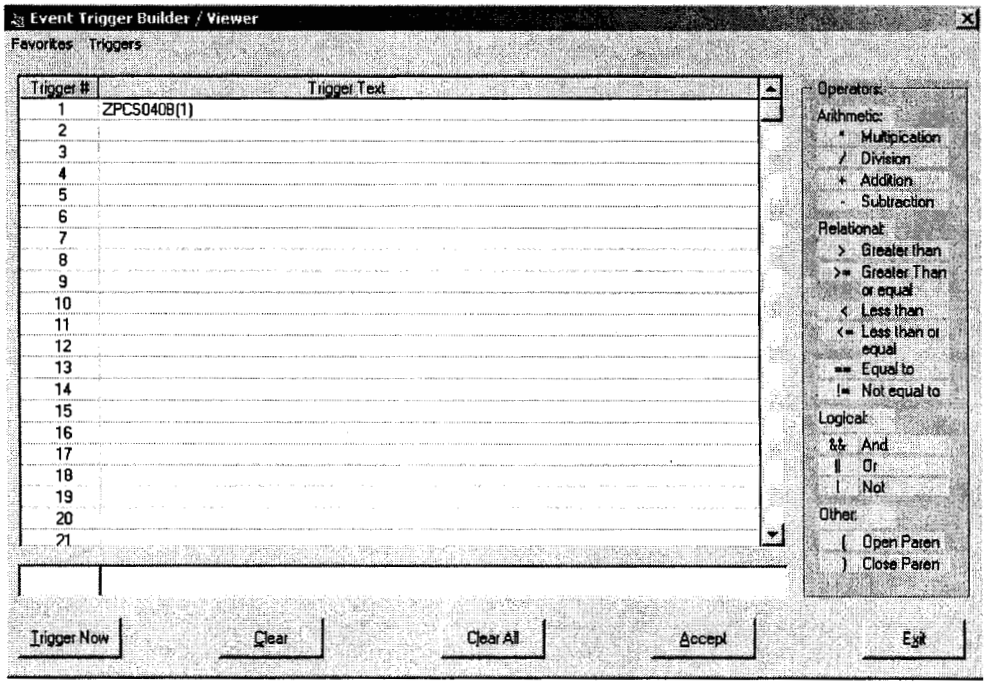
1. Reset the simulator to IC-17

   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. Build the following scenario:



Trigger 1 on HS-76-040B (B SGTS Exhaust Fan) to RUN



V. TASK STANDARD STATEMENT:

"0B" SGTS Fan manually started with flow established through "0B" SGTS Filter. "0A" SGTS Filter dampers re-opened and "0B" SGTS Filter isolated following Hi Temp alarm.

VI. INITIAL CONDITIONS:

1. Secondary Containment isolation signal is not present.
2. No containment purging or inerting is in progress.
3. RP notified of potential contamination level change.
4. An EO is standing by to assist.

VII. INITIATING CUE STATEMENT (Describe the task clearly):

Post Maintenance Testing is required on the "0B" train of SGTS. You are directed by Shift Supervision to place the "0B" SGTS Fan in service through the "0B" SGTS Filter Train per S76.8.A for a 15 minute run.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*****
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Obtain current revision of S76.8.A. **CUE:** Provide copy of S76.8.A.	N/A			
	2. *(4.2.1)* **CLOSE** one SGTS Filter Train by placing HS-076-013A(B) to "AUTO".	HS-076-013A placed in "AUTO".			
*	3. *(4.2.2)* PLACE one SGTS fan 0A(B)V163 in standby, by placing HS-076-040A(B) to "STANDBY".	HS-076-040A (EXH FAN A 0AV163) placed in "STANDBY".			
NOTE: When EO is directed to place HS-76-*96 in "TEST", (Step 4.3 of S76.8.A) Insert Remote Function **RRE180**, HS76-196 Test Switch to "TEST" and provide cue below as EO. (**NOTE:** This will cause 004 VENT B-2 (219 VENT B-2) "Reactor Enclosure Refueling Floor Isolation System Armed/Bypassed" to alarm.)					
*	4. *(4.2.3)* **PLACE** HS-76-*96, "RE-SGTS Connection Valve HV-76-*96 Test Switch" to 'TEST" at 0AC124. (After Remote Function **RRE180** is placed in TEST, provide following:) **CUE:** "HS-76-196 is in TEST" **OR** "Step 4.3 of S76.8.A is complete".	EO directed to place HS-76-196, "RE-SGTS Connection Valve HV-76-196 Test Switch" in 'TEST" at 0AC124.			
	4.a Acknowledge ANN 004 VENT B-2	Annunciator 004 VENT B-2 "Reactor Enclosure Refueling Floor Isolation System Armed/Bypassed" acknowledged			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
NOTE: 30 seconds after HS-76-040B is taken to run, ANN 002 G5 "A REAC ENCL SGTS CHARCOAL FLT HI TEMP" will alarm.					
*	5. *(4.2.1)* **PLACE** HS-76-040B(A), SGTS Exhaust Fan" (EXH FAN B(A) to "RUN" at 00C681 to start SGTS Exhaust Fan.	HS-76-040B, SGTS Exhaust Fan (EXH FAN B OBV163) placed in "RUN" at 00C681 to start "B" SGTS Exhaust Fan.			
	6. Log SBGT start time	SBGT start time logged			
NOTE: Alternate Path begins with the next step.					
	7. Respond to alarm: 002 H-5 "B REAC ENCL SGTS CHARCOAL FLT HI TEMP" .	ANN 002 H5 referenced.			
	8. Verify high temp using TI-76-010B on 00C681.	TI-76-010B on 00C681 referenced to confirm hi temp condition. (>200° F)			
NOTE: S76.7.B PREREQUISITES, states "Briefing performed as required". If Student requests a brief, **CUE:** "For the purposes of this JPM a brief will not be provided."					
	9. *(4.2.1)* Immediately **NOTIFY** SSV **AND** Health Physics of SGTS Filter status.	SSV and Health Physics notified of SGTS Filter status.			
*	10. *(4.2.2)* **PLACE** unaffected HS-76-013B(A), "SGTS Filter Isolation," at 00C681 in "OPEN" to ensure filter train flow path.	HS-076-013A placed (or verified) in "OPEN".			
*	11. *(4.2.3)* **PLACE** affected HS-76-013A(B), "SGTS Filter Isolation," in "CLOSE" to isolate affected SGTS Filter Train	HS-076-013B placed (or verified) in "CLOSE".			
	12. *(4.2.4)* ENSURE HV-76-012A(B), "Filter Outlet," AND HV-76-011A(B), "Filter Inlet" for affected SGTS filter train closed.	HV-76-012B, "Filter Outlet," AND HV-76- 011B, "Filter Inlet verified closed. (green lights lit, red lights out)			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: STANDBY GAS TREATMENT MANUAL STARTUP WITH CHARCOAL ENCLOSURE HI TEMP

JPM Number: LOJPM3258 **Revision Number:** 001

Task Number and Title: 2610030101 Secure the Standby Gas Treatment System (SGTS)

K/A Number and Importance: 261000 A4.02 3.1/3.1
A4.03 3.0/3.0

Level of Difficulty (1-5) __3__

Suggested Testing Environment: Simulator

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

Reference(s):
S76.8.A, MANUAL STARTUP AND SHUTDOWN OF SGTS Rev: 19
S76.7.B, SGTS CHARCOAL FILTER HIGH TEMP RESPONSE Rev: 13
ARC-MCR-002 H5, B REAC ENCL SGTS CHARCOAL FLT HI T Rev: 00

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: __15__ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE
INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. Secondary Containment isolation signal is not present.
2. No containment purging or inerting is in progress.
3. RP notified of potential contamination level change.
4. An EO is standing by to assist.

INITIATING CUE STATEMENT:

Post Maintenance Testing is required on the "0B" train of SGTS. You are directed by Shift Supervision to place the "0B" SGTS Fan in service through the "0B" SGTS Filter Train per S76.8.A for a 15 minute run.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

CONTROL ROD EXERCISE TEST (ST-6-107-760-1)(ALTERNATE PATH)

JPM Number: LOJPM3034

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	10/2/15 Date
Validated By:	SME or Instructor	10/2/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, simulator, or other)

R 4. Initial setup conditions are identified.

R 5. Initiating cues (and terminating cues if required) are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

R 8. If an alternate path is used, the task standard contains criteria for successful completion.

R 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure ST-6-107-760-1	Rev: 69
Procedure ARC-MCR-108 F-5	Rev: 1
Procedure S73.1.A	Rev: 50
Procedure ON-104	Rev: 55
Procedure _____	Rev: _____

R 10. Verify cues both verbal and visual are free of conflict.

R 11. Verify performance time is accurate

N/A 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

R 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

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

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM supersedes LLOJPM0034 Rev. 1. Revised to new template latest procedure revision, and control rod uncoupled added for alternate path..	07/08/15

IV. TASK STANDARD:

Perform Control Rod Exercise Test. Verify Control Rods coupled to their drive mechanisms, and when the control rod goes to OVERTRAVEL position, take actions directed by ON-104, Control Rod Problems.

V. SIMULATOR SETUP

1. Reset simulator to IC-17.
2. Insert malfunction **MRD016E,** Control Rod Uncoupled for Control Rod _06-39_ .

VI. INITIAL CONDITIONS:

1. Unit _1__ is at _100__% power.
2. Control Rod Exercise Test ST-6-107-760-1 is in progress and completed up through Control Rod 06-27.
3. Control Rod Position Log from previous shift attached
4. No known fuel defects exist
5. All other ST-6-107-760-1 prerequisites have been met.

VII. INITIATING CUE:

Shift supervision directs you to continue performance of ST-6-107-760-1, Control Rod Exercise Test, step 4.4 starting with Control Rod 06-31.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	EVALUATORS NOTE: Provide of the following: • Marked-Up copy ST-6-107-760-1, Control Rod Exercise Test • Control Rod Position Log • ST-6-107-730-1, Control Rod Coupling Check (not req'd) • S73.1.A, Normal Operation of the Reactor Manual Control System The following steps are directed by ST-6-107-760-1, Control Rod Exercise Test, whereas control rods 06-31, 06-35, and 06-39 will be tested with rod 06-39 uncoupled when coupling check is performed. **JPM Steps 3-18 (ST-6-107-760-1 pages 10-15 are laminated) and are performed for each control rod tested**).				
	1. Review copy of ST-6-107-760-1, Control Rod Exercise Test.	Candidate reviews the procedures.			
	2. Perform the following steps as directed from ST-6-107-760-1, Control Rod Exercise Test.	N/A			
	3. [4.4.1.a] **VERIFY** on the 4 Rod Display that the selected Rod indicates position 48.	Control Rod 06-31 is at position 48			
	4. [4.4.1.b] **IF** 48 is **not** being indicated on the Four Rod Display, **THEN VERIFY** full-out indication is present on the Full Core Display **AND** PMS.	N/A			
*	5. [4.4.1.c] **INSERT** the control rod one notch	Insert pushbutton depressed			
	6. [4.4.1.d] **VERIFY** on the Four Rod Display that the selected Rod indicates position 46	Operator recognizes Four Rod Display indicates that the Rod indicates position 46			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	7. [4.4.1.e] **IF** any control rod begins to insert **AND** settles back to position 48 **THEN PERFORM** the following -----	N/A			
	8. [4.4.1.f] **ENSURE** CRD System Drive pressure is ~ 260 psid.	Verifies CRD System Drive pressure is ~ 260 psid.			
	9. [4.4.1.g] **IF** control rod does not indicate notch position 46 due to RPIS problem, **THEN PERFORM** the following ---------	Operator verifies Control Rod indicates notch position 46			
	10. [4.4.1.h] **IF** insert control rod speed was observed to be normal **THEN CIRCLE** "N" for Normal in the speed column in row 1 (Insert) of Att 1.	Control Rod speed determined to be normal "N" circled row 1 (Insert) of Att 1			
	11. [4.4.1.2] **WITHDRAW** control rod to position 48 while observing control rod position indication.	Operator identifies Control Rod returns to position 48.			
	12. [4.4.1.3] **RECORD** AS LEFT position of each Control Rod on ATT#1. (Position Log available)	N/A			
*	13. [4.4.2] **WHEN** a control rod is withdrawn to FULL OUT position, **THEN PERFORM** coupling check by continuous withdrawal.	Coupling check by continuous withdrawal or single notch withdrawal is acceptable.			
	14. **RECORD** stall flow from FI-46-1R604, "Drive Water Flow Indicator in Att # 1"	Stall flow from FI-46-1R604, recorded on Att # 1"			
	15. [4.4.4] **IF** withdraw control rod speed was observed to be normal, **THEN CIRCLE** "N" in speed column in row W of Att#1.	"N" in speed column in row W of Att#1 recorded			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	16. [4.4.5] **VERIFY** annunciator ROD OVERTRAVEL remains clear	ROD OVERTRAVEL annunciator remains clear (For 06-39 annunciator will be received)			
*	17. [4.4.6] **VERIFY** one of the following • Selected rod indicates 48 on Four Rod Display • Selected rod RED out light lit on Full Core Display • Selected rod indicates FULLY WITHDRAWN on PMS	Any of the three methods listed used to verify control rod position is acceptable.			
	18. [4.4.7] **ENTER** initials in the appropriate column/rod on Att#1	Initials entered in the appropriate column/rod on Att#1			
EVALUATORS NOTE: Alternate Path begins with the next step when annunciator 108 F-5, ROD OVERTRAVEL annunciates as control rod 06-39 coupling check is performed. Operator refers to ON-104, Control Rod Problems, section 2.5, Control Rod(s) Uncoupled. The following steps are directed per ON-104, Control Rod Problems.					
	19. Acknowledge annunciator and reference ARC for 108 F-5 ROD OVERTRAVEL.	Reference ARC for 108 F-5 ROD OVERTRAVEL..			
	20. Refer to ON-104, Control Rod Problems for control rod drive coupling problem.	Section 2.5 of ON-104, Control Rod Problems referenced			
	21. [ON-104 2.5.1] **IF** uncoupled rod is suspected **THEN NOTIFY** Shift Supervision.	Shift Supervision notified of a control rod drive coupling problem.			
	22. [ON-104 2.5.3] **REFER TO** Tech Spec 3.1.3.6 for limitations due to uncoupled rod. **CUE:** SSV will take Tech Spec 3.1.3.6 actions for the uncoupled rod.	Tech Spec 3.1.3.6 referenced for 2-hour action limitations due to uncoupled rod.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	23. [ON-104 2.5.6] **IF** Reactor Power is greater than 25% **THEN PERFORM** the following:	Verify reactor power > 25% and perform the following			
*	23a. **IF** Control Rod is at position 48 **THEN INSERT** the rod to position 46	Position control rod to 46			
*	23b. **WITHDRAW** the control rod to 48 **AND ATTEMPT** a coupling check.	Withdraw control rod to 48, and perform coupling check. Verify coupling check unsuccessful.			
*	23c. Fully continuously **INSERT** the control rod **AND MAINTAIN** the insert signal for 10 seconds.	Fully continuously insert the control rod and maintain the insert signal for 10 seconds.			
	23d. **DISARM** directional control valves by closing the following on HCU 06-39. • 047-1-06-39-03 • 047-1-06-39-05 **CUE:** EOs have been informed to close the 03 & 05 directional control valves for HCU 06-39.	Direct EO to disarm directional control valves for HCU 06-39.			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

Exelon Generation.

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: CONTROL ROD EXERCISE TEST (ST-6-107-760-1)(ALTERNATE PATH)

JPM Number: LOJPM3034 **Revision Number:** 000

Task Number and Title: 2010140201, Perform Control Rod Exercise Test
2000060401, (ON-104) Uncoupled Control Rod

K/A Number and Importance: 201003 A2.01 3.4/3.6

Safety Function (1-9) __1__

Admin Category (A1-4) _____

Level of Difficulty (1-5) __2.5__

Suggested Testing Environment: Simulator

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

Reference(s): ST-6-107-760-1, Control Rod Exercise Test, Rev 69
S73.1.A, Normal Operation of the Reactor Manual Control System, Rev 50
ON-104, Control rod Problems, Rev 55
ARC-MCR-108 F-5 Rod Overtravel, Rev 001

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

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: __15__ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. Unit _1__ is at _100__% power.
2. Control Rod Exercise Test ST-6-107-760-1 is in progress and completed up through Control Rod 06-27.
3. Control Rod Position Log from previous shift attached
4. No known fuel defects exist
5. All other ST-6-107-760-1 prerequisites have been met.

INITIATING CUE:

Shift supervision directs you to continue performance of ST-6-107-760-1, Control Rod Exercise Test, step 4.4 starting with Control Rod 06-31.

Exelon Generation.

PLANT NAME: LIMERICK-1 CYCLE 16 PAGE 1

CONTROL ROD POSITIONS

PREV SHIFT CALCULATED
PREV SHIFT PRINTED

59															
L															
55															
51															
L															
47															
43							08		08						
L															
39															
35					08						08				
L															
31															
27					08						08				
L															
23															
19							08		08						
L															
15															
11															
L															
07															
03		L		L		L		L		L		L		L	
02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

S= SUBSTITUTE VALUE
L= LPRM
-99= MISSING CONTROL ROD POSITION

CONTROL ROD DENSITY 3.60%
SEQUENCE A-2

LOAD LINE SUMMARY

CORE POWER	100.16%
CORE FLOW	90.30%
CORE LINE	107.13%
FLLP	0.932

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

BYPASSING REACTOR ENCLOSURE HVAC ISOLATION

JPM Number: LOJPM3214

REVISION NUMBER: 001

DATE: 11/05/15

Developed By:	Instructor	11/05/15 Date
Validated By:	SME or Instructor	11/5/15 Date
Reviewed By:	C. Giambrone GIAMBRONE Operations Representative	11-5-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/5/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

_____ 1. Task description and number, JPM description and number are identified.

_____ 2. Knowledge and Abilities (K/A) references are included.

_____ 3. Performance location specified. (in-plant, control room, simulator, or other)

_____ 4. Initial setup conditions are identified.

_____ 5. Initiating cues (and terminating cues if required) are properly identified.

_____ 6. Task standards identified and verified by SME review.

_____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

_____ 8. If an alternate path is used, the task standard contains criteria for successful completion.

_____ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure T-227 U/1 Rev: 17
Procedure T-227 U/2 Rev: 16
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

_____ 10. Verify cues both verbal and visual are free of conflict.

_____ 11. Verify performance time is accurate

_____ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

_____ 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM replaces LLOJPM0214 Rev. 6. Revised to new template and to align with latest procedure revision. This revision changes this JPM to an Alternate Path.	10/11/13
001	Revised to change format and reflect T-227 procedure revision	10/21/15

IV. TASK STANDARD:

Jumpers installed and switches positioned to defeat Reactor HVAC Isolation per T-227.

V. INITIAL CONDITIONS:

1. Unit __ Reactor Enclosure exhaust radiation is 0.9 mr/hr
2. Unit __ Reactor Enclosure ventilation is isolated
3. Unit __ Drywell pressure is 2.1 psig.

VI. INITIATING CUE:

Shift Supervision directs you to bypass the Unit __ Reactor Enclosure HVAC isolation in accordance with T-227 to prepare HVAC for restart.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

* Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
NOTE: **IF** this JPM is the ***first*** of multiple T-200 series JPMs being performed by a single candidate **THEN** steps #1 and #2 apply. **OTHERWISE** mark steps #1 and #2 as N/A **AND** provide the following to the candidate : a. INITIATING CUE(S) b. CUE: "You are now in possession of the T-227 equipment container. It contains all tools and equipment required by the procedure. You are to simulate their use during performance of the procedure." c. PROCEDURE COPY					
	1. Obtain current revision of T-227. **CUE:** When candidate demonstrates the ability to obtain current revision of procedure, provide a copy of T-227.	Current revision of T-227 obtained.			
	2. Obtain equipment/tools from Unit 1 or Unit 2 T-200 cabinet. - (1) screwdriver - (1) screw holding screwdriver - (1) flashlight - (4) jumpers **CUE:** You have obtained the equipment.	Student goes to T-200 locker and obtains: - (1) screwdriver - (1) screw holding screwdriver - (1) flashlight - (4) jumpers			
EVALUATORS NOTE: In addition to Reactor Enclosure HVAC, isolations to Drywell and Supp Pool Purge valves will be bypassed.					

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	3. **ENSURE** Primary Containment Bypass Permissive Interlock remains operable as follows:	N/A			
*	3a. **INSTALL** jumper from terminal EEE7-8 to terminal EEE7-9 in *0C622 (Aux Equipment Room) **CUE:** Jumper is installed	Jumper installed from terminal EEE7-8 to terminal EEE7-9 in *0C622			
*	3b. **INSTALL** jumper from terminal JJJ9-5 to terminal JJJ9-6 in *0C623 (Aux Equipment Room) **CUE:** Jumper is installed	Jumper installed from terminal JJJ9-5 to terminal JJJ9-6 in *0C623			
*	4. **PLACE** the following handswitches to "CLOSE" at *0C601 (Main Control Room) • HV-57-*14, DRYWELL EXHAUST • HV-57-*17, TO RX ENCL FILTER (OUTBD) • HV-57-*04, SUPP POOL EXHAUST • HV-57-*18, TO RX ENCL FILTER (OUTBD) • HV-57-*21, DRYWELL PURGE • HV-57-*23, DRYWELL VENT INBD • HV-57-*31, SUPP POOL PURGE • HV-57-*24, SUPP POOL VENT INBD **CUE:** PRO reports handswitches listed in step 4.2 of T-227 are in "CLOSE".	Control Room contacted, and confirmation made that all valve handswitches for valves listed in step 4.2 of T-227 are closed.			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
EVALUATORS NOTE: 1. Steps 4.3 and 4.4 will bypass Rx. Encl. HVAC **AND** NSSSS Grp VIA, VIB auto isolations for A/B channels caused by: • High Drywell Pressure (1.68 psig) • Low RPV Water Level (-38") • Rx Encl. Low Differential Pressure (-0.1" w.c.) 2. Manual and Rx Encl High Rad Signals will be operational					
*	5. **INSTALL** jumper from terminal CCC9-10 to terminal BBB4-1 at *0C622 (Aux Equip Room). **CUE:** Jumper is installed.	Jumper installed from terminal CCC9-10 to terminal BBB4-1 at *0C622.			
*	6. **INSTALL** jumper from terminal AAA9-8 to terminal EEE9-3 at *0C623 (Aux Equip Room). **CUE:** Jumper is installed	Jumper installed from terminal AAA9-8 to terminal EEE9-3 at *0C623.			
	CUE: You have met the termination criteria for this JPM				

JPM Completion Time _____

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: Bypassing Reactor Enclosure HVAC Isolation

JPM Number: LOJPM3214 **Revision Number:** 001

Task Number and Title: 2000620501, (T-227) Bypass Reactor Enclosure HVAC High Drywell Pressure/Low RPV Water Level Isolation

K/A Number and Importance: 295032 EA1.03 3.7/3.7

Safety Function (1-9) __8__

Admin Category (A1-4) _____

Level of Difficulty (1-5) _3_

Suggested Testing Environment: In-Plant

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

Reference(s): T-227 U/1, Bypass of Reactor Enclosure HVAC High Drywell Pressure/Low RPV Water Level/Low DP Isolation, Rev. 17

T-227 U/2, Bypass of Reactor Enclosure HVAC High Drywell Pressure/Low RPV Water Level/Low DP Isolation, Rev. 16

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

Testing Method: ☒ Simulate ☐ Perform

Estimated Time to Complete: _15_ minutes **Actual Time Used:** _____ minutes

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

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

Comments:_____

_____

_____

_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE
INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. Unit __ Reactor Enclosure exhaust radiation is 0.9 mr/hr
2. Unit __ Reactor Enclosure ventilation is isolated
3. Unit __ Drywell pressure is 2.1 psig.

INITIATING CUE STATEMENT:

Shift Supervision directs you to bypass the Unit __ Reactor Enclosure HVAC isolation in accordance with T-227 to prepare HVAC for restart.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

PLACING ALTERNATE CRD FLOW CONTROL VALVE IN SERVICE

JPM Number: LOJPM2200

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	10/2/15 Date
Validated By:	Robert D Mandil SME or Instructor	10/2/15 Date
Reviewed By:	C. Graham Operations Representative	11-19-15 Date
Reviewed By:	N/A EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

Note: This LGS format satisfies the TQ-JA-150 Format

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
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R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, simulator, or other)

R 4. Initial setup conditions are identified.

R 5. Initiating cues (and terminating cues if required) are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

N/A 8. If an alternate path is used, the task standard contains criteria for successful completion.

R 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure S46.6.B Rev: 22
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

R 10. Verify cues both verbal and visual are free of conflict.

R 11. Verify performance time is accurate

N/A 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

R 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

_____ _____
SME / Instructor Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This JPM supersedes LLOJPM0200 Rev. 6. Revised to new template and to align with latest procedure revision.	07/27/15

IV. TASK STANDARD:

Unit ____'B' Flow Control Valve (FCV) in service in the automatic mode, and the CRD 'A' FCV removed from service.

V. SIMULATOR SETUP

N/A

VI. INITIAL CONDITIONS: *(If applicable)*

1. *A CRD flow control valve is in service.
2. *A CRD Flow Control Valve has developed a leak.
3. All S46.6.B prerequisites to place the 'B' FCV in service have been performed.

VII. INITIATING CUE:

Shift Supervision directs you, to place the Unit _____, 'B' CRD Flow Control Valve (FCV) in AUTO service and remove the 'A' CRD Flow Control Valve from service per S46.6.B, Placing Alternate CRD Hydraulic System Flow Control Valve In Service.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Obtain current revision of S46.6.B, Placing Alternate CRD Hydraulic System Flow Control Valve In Service. **CUE:** Candidate is given a copy of S46.6.B, Placing Alternate CRD Hydraulic System Flow Control Valve In Service when knowledge of the correct location of procedure is demonstrated.	If this JPM is Pre briefed this step is N/A Candidate demonstrates ability (actual or discuss) to locate S46.6.B.			
	2. **VERIFY** all prerequisites satisfied. *(Step 4.1.1)*	N/A Provided in Initiating Cue			
	3. **VERIFY** procedure being performed on correct unit/train. *(Step 4.1.2)*	Verify proper unit/train			
	4. **ESTABLISH** communications between Reactor Operator **AND** *0C213, CRD Hydraulic Master Control Area Panel *(Step 4.2)* **CUE**: (Via simulated radio/phone) Communication established for Unit * Reactor Operator standing by for the performance of S46.6.B.	Communication established with Unit * Reactor Operator			
	5. **VERIFY** FC-046-*R600 "Rod Drive Flow Controller" (FL) is in "AUTO" OR "MANUAL" at *0C603. *(Step 4.3)* **CUE:** Reactor Operator reports, FC-046-*R600 "CRD Flow Controller is in "AUTO".	CRD Flow Controller verified in "AUTO" at *0C603 from the Reactor Operator			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	6. **VERIFY** in-service D009A, "CRD Flow Controller" is in "AUTO" at *0C213 *(Step 4.4)* **CUE: Point to** CRD Flow Controller D009A "AUTO" and say the controller auto/ manual is here.	Local MANUAL/AUTO switch for controller D009A at *0C213 verified in "AUTO"			
	7. **ENSURE** the on-coming D009B "CRD Flow Controller" in "MANUAL" **AND**... *(Step 4.5)* **CUE: Point to** CRD Flow Controller D009B "MANUAL" and say the controller auto/ manual is here.	Local MANUAL/AUTO switch for controller D009B at *0C213 ensured in "MANUAL"			
	7a. ... 0% open as indicated by red arrow at *0C213 *(Step 4.5)* **CUE: Using a pen point to** D009B to indicate 0% open.	The red arrow for D009B is verified at 0% at *0C213.			
	8. **PLACE** on-coming FV-C-46-*F002B, "CRD Flow Control Valve" in-service: *(Step 4.6)*	N/A			
*	8a. **OPEN** 46-*F046B, "Inlet Isolation Valve" *(Step 4.6.1)* **CUE:** Valve handwheel is rotated until it stops.	Handwheel for valve 46-*F046B is rotated counter-clockwise until the valve is full open			
*	8b. **OPEN** 46-*F047B, "Outlet Isolation Valve" *(Step 4.6.2)* **CUE:** Valve handwheel is rotated until it	Handwheel for valve 46-*F047B is rotated counter-clockwise until the valve is full open			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	stops.				
	9. Using FC-046-*R600, "Rod Drive Flow Controller" at *0C603, **ENSURE** FI-46-*R019, CRD Hydraulic System Flow Controller," indicates 50 to 60 gpm at *0C213 *(Step 4.6.3)* **CUE:** FI-46-*R019 indicates 55 gpm.	System flow is ensured to be 50 to 60 gpm on FI-46-*R019			
	10. **IF** 50 to 60 gpm cannot be achieved **THEN** slowly **THROTTLE** closed the off-going 46-*F047A, "Outlet Isolation Valve," until FI-46-*R019 indicates 50 to 60 gpm. *(Step 4.6.4)*	N/A			
*	11. **MATCH** off-going D009A, "CRD Flow Controller", "MANUAL" (red) indicating arrow to the same position as "AUTO" (black) indicating arrow. *(Step 4.6.5)* **CUE: Use a pen to indicate** The red arrow for D009A is indicating 0% and the black arrow for D009A is indicating 25%. **CUE: Use a pen to indicate** (After Adjustment) The red and black arrows for D009A are indicating 25%.	The control knob for D009A is rotated clockwise until the red arrow is set to the same position as the black arrow			
*	12. **PLACE** off-going D009A, "CRD Flow Controller", in "MANUAL" at *0C213 *(Step 4.6.6)* **CUE: Point to** D009A MANUAL and say the controller auto/ manual is here.	Local MANUAL/AUTO switch for controller D009A at *0C213 placed in "MANUAL"			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	13. **MONITOR** system flow at FI-46-*R019 **AND MAINTAIN** 50 to 63 gpm while performing transition. (Step 4.6.7) If asked: **CUE:** FI-46-*R019 indicates 55 gpm.	N/A			
	14. Slowly **OPEN** on-coming D009B, "CRD Flow Controller" by rotating control knob in clockwise (INCREASE) direction until a slight increase in flow is observed on FI-46-*R019 *(Step 4.6.8)* **CUE:** (As D009B Control Knob is rotated clockwise) use a pen to indicate flow on FI-46-*R019 has risen to 57 gpm.	D009B control knob has been rotated clockwise until flow increases on FI-46-*R019			
*	15. Alternately **AND** slowly **OPEN** on-coming D009B, "CRD Flow Controller" by rotating control knob in clockwise (INCREASE) direction **AND** slowly **CLOSE** off-going D009A, "CRD Flow Controller" by rotating control knob in counterclockwise direction *(Step 4.6.9)* **CUE:** After several manipulations the red indicating arrow for D009B rises to 25% open and the red indicating arrow for D009A drops to 0% open. FI-46-*R019 indicates 55 gpm.	The on-coming D009B control knob is slowly rotated clockwise while alternately the off-going D009A control knob is slowly rotated counter-clockwise. System flow is maintained between 50 to 63 gpm on FI-46-*R019 during the transition.			
*	16. When off-going D009A, "CRD Flow Controller" "MANUAL" (red) indicating arrow is at 0% open, **THEN STOP** rotating both control knobs. *(Step 4.6.10*	N/A Action is accomplished by performance of previous step			
	17. **MATCH** on-coming D009B, "CRD Flow Controller" "AUTO" (black) indicating arrow with "MANUAL" (red) indicating arrow.	D009B red arrow is set to the same position as the black arrow			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	(Step 4.6.11) **CUE: Use a pen to show**The red indicating arrow indicates 25% open and the black indicating arrow indicates 25% open. (They are already matched)				
	18. **IF** indicating arrows cannot be matched at *0C213, **THEN PERFORM** the following: *(Step 4.6.12)* ***(They are already matched)***	N/A			
*	19. **PLACE** on-coming D009B, "CRD Flow Controller" in "AUTO" at *0C213. *(Step 4.6.13)* **CUE:** D009B is in "AUTO".	Local MANUAL/AUTO switch for controller D009B at *0C213 verified in AUTO			
	20. **IF** step 4.6.12 was performed... *(Step 4.6.14)* ***(Step 4.6.12 was not performed)***	N/A			
	21. **CLOSE** 46-*F046A, "Inlet Isolation Valve" for off-going FV-C-46-*F002A, "Flow Control Valve." *(Step 4.6.15)* **CUE**: Valve handwheel is rotated until it stops	Handwheel for valve 46-*F046A is rotated clockwise until the valve is full closed.			
*	22. **CLOSE** 46-*F047A, "Outlet Isolation Valve" for off-going FV-C-46-*F002A, Flow Control Valve." *(Step 4.6.16)* **CUE:** Valve handwheel is rotated clockwise until it stops	Handwheel for valve 46-*F047A is rotated clockwise until the valve is full closed.			
	23. **INFORM** Reactor Operator on-coming FV-C-46-*F002B, "Flow Control Valve," is in-service.	The RO has been informed that the *B CRD FCV is in service and the *A CRD FCV has been			

ELEMENT		STANDARD	SAT	UNSAT	COMMENT NUMBER
	(Step 4.7) **CUE:** The RO responds, "I understand the *B CRD Flow Control Valve has been placed in service."	removed from service.			
	24. **ENSURE** FC-046-*R600, "Rod Drive Flow Controller" (FL), in "AUTO" at *0C603. *(Step 4.8)* **CUE:** The RO responds, "Rod Drive Flow Controller is in "AUTO"	Asks the RO to ensure "Rod Drive Flow Controller" (FL), in "AUTO" at *0C603.			
	25. **VERIFY** the following at *0C603: • 50 to 63 gpm on FI-46-*R606. • 255 to 265 psi on PDI-46-*R602, DELTA PX. *(Step 4.9)* **CUE:** The RO reports he has 55 gpm and 260 psi at *0C603.	Asks the RO to verify System flow and drive water ΔP have been verified to be within at acceptable limits at *0C603.			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: **PLACING ALTERNATE CRD FLOW CONTROL VALVE IN SERVICE**

JPM Number: LOJPM2200 **Revision Number:** 000

Task Number and Title: 2010060101, Place the CRD Standby Flow Control Vlv in Serv (LO)

2010050104, Place the Alternate CRD Hydraulic System Flow Control Valve in Service per S46.6.B. (EO)

K/A Number and Importance: 201001 A1.03 2.9/2.8

Safety Function (1-9) __1__

Admin Category (A1-4) ____

Level of Difficulty (1-5) __2.5__

Suggested Testing Environment: In-Plant

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

Reference(s): S46.6.B, Placing Alternate CRD Hydraulic System Flow Control Valve In Service, Rev 22.

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

Testing Method: ☒ Simulate ☐ Perform

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

EVALUATION SUMMARY:

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. *A CRD Flow Control Valve is in service.
2. *A CRD Flow Control Valve has developed a leak.
3. All S46.6.B prerequisites to place the 'B' FCV in service have been performed.

INITIATING CUE:

Shift Supervision directs you, to place the Unit _____, 'B' CRD Flow Control Valve (FCV) in AUTO service and remove the 'A' CRD Flow Control Valve from service per S46.6.B, Placing Alternate CRD Hydraulic System Flow Control Valve In Service.

Exelon Generation.

LIMERICK GENERATING STATION
JOB PERFORMANCE MEASURE

D11 DIESEL LOCAL MANUAL START

JPM NUMBER: LOJPM2236

REVISION NUMBER: 000

DATE: 11/19/15

Developed By:	Instructor	10/2/15 Date
Validated By:	SME or Instructor	10/2/15 Date
Reviewed By:	Operations Representative	11-19-15 Date
Reviewed By:	EP Representative	N/A Date
Approved By:	Training Department	11/17/15 Date

I. JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 through 12 below.

R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, simulator, or other)

R 4. Initial setup conditions are identified.

R 5. Initiating cues (and terminating cues if required) are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

R 8. If an alternate path is used, the task standard contains criteria for successful completion.

R 9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure S92.1.O Rev: 0
Procedure E-10/20 Rev: 53
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____

R 10. Verify cues both verbal and visual are free of conflict.

R 11. Verify performance time is accurate.

N/A 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.

R 13. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

[signature]	11/17/16
SME / Instructor	Date
SME / Instructor	Date
SME / Instructor	Date

II. RECORD OF TEMPORARY CHANGES:

A. Approval of Pen & Ink Changes will be by the ILT or LORT Lead Instructor with OTM concurrence.

B. All Pen & Ink Changes are to be tracked in ILT or LOR Program Action Tracking for Next Revision.

C. All Pen & Ink Changes shall be in accordance with TQ-AA-223.

Temp Change #	Date of Change	Purpose of Change	ILT/LORT Approval	Action Tracking	Revision Date

III. REVISION HISTORY:

A. If a Revision affects a Task Performance from VISION Terminal Performance Objectives then the revision must also be made in the VISION database.

B. The description of the Revision should adequately indicate how the training content of the Revision has changed.

C. The description of the Revision should also include previous format reference and number and previous template used (i.e. for conversion to LLOJPM format).

D. For Revision 000, put reason for writing this JPM and for all subsequent revisions, annotate the changes that were made or incorporated.

Revision Number	Description of Revision and Affect on Training Content	Date of Revision
000	This is a NEW JPM.	6/12/15

IV. SIMULATOR SETUP INSTRUCTIONS:

N/A

V. TASK STANDARD STATEMENT:

D11 Diesel Generator started by using manual air start valves.

VI. INITIAL CONDITIONS:

1. A Loss Of Offsite Power (LOOP) has occurred.
2. E-10/20, Loss of Offsite Power, is being performed.
3. D11 Diesel Generator has failed to start automatically and manually from the MCR.

VII. INITIATING CUE STATEMENT:

The CRS has directed you to manually start D11 Diesel Generator locally using S92.1.O, Appendix 1, Local Manual Startup of a Diesel Generator Hard Card, as directed by E-10/20.

Information for Evaluator's Use:

Any **UNSAT** requires written comments on respective step.

*
Denotes critical steps

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside 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 JPM Start Time clock starts when the candidate acknowledges the initiating cue.

VIII. PERFORMANCE CHECKLIST:

JPM Start Time _____

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
	1. Obtain current revision of S92.1.O, Appendix 1, Local Manual Startup Of A Diesel Generator Hard Card **CUE:** Provide copy of S92.1.O, Appendix 1, Local Manual Startup Of A Diesel Generator Hard Card.	S92.1.O, Appendix 1, Local Manual Startup Of A Diesel Generator Hard Card obtained			
EVALUATORS NOTE: Although the following step does not start the diesel engine, it is critical for setting up the required "isochronous" mode of operation of the diesel generator.					
*	2. IF DBSA and DBSB relay blue tabs are not pulled in at panel 1ETB-AG501 **THEN** simultaneously **DEPRESS** blue tabs on DBSA and DBSB and **ENSURE** they stay pulled in. **CUE:** If asked, DBSA and DBSB relay blue tabs are as you see them. After blue tabs depressed, inform candidate "There is no visible or audible change" in the room.	Candidate identifies DBSA and DBSB relay blue tabs are not pulled in, and depresses blue tabs on DBSA and DBSB contactors.			
*	3. **IF** engine did not start **THEN PLACE** LOCAL-REMOTE switch in "LOCAL" **CUE:** Switch is in "LOCAL" position	D11 EDG Local-Remote switch placed in "LOCAL"			

	ELEMENT	STANDARD	SAT	UNSAT	COMMENT NUMBER
*	4. **PLACE** local ENGINE CONTROL CSL to "START" **AND HOLD** until engine fires/sustains itself. **CUE:** After ENGINE CONTROL CSL in "START", inform candidate "There is no visible or audible change" in the room.	Engine Control (CSL) placed to start and candidate realizes diesel did not start.			
	EVALUATOR NOTE: **Alternate path begins with next step**				
*	5. IF engine does not start, **THEN** manually **OPERATE** lever operated manual Air Start Valves: • 092-1304A **OR** • 092-1305A **CUE:** You hear a sound of pressurized air being released and the sound of a large engine starting.	As manual air start valves operated D11 EDG starts.			
	6. **VERIFY** lube oil pressure ≥ 12 psi on red pointer at local PI-GA-101A **CUE:** Using a pen, point to the marking indicating ~20 on PI-GA-101A.	Lube Oil pressure verified ≥ 12 psi on red pointer at local PI-GA-101A			
	7. **VERIFY** jacket water pressure ≥ 10 psi on red pointer at local PI-GA-120A **CUE:** Using a pen, point to the marking indicating ~20 on PI-GA-120A.	Jacket Water pressure verified ≥ 10 psi on red pointer at local PI-GA-120A			

ELEMENT		STANDARD	SAT	UNSAT	COMMENT NUMBER
	8. **VERIFY** cooling water available to diesel generator by observing PI-11-107A, ESW Supply, indicates higher then PI-11-108A ESW Return. **CUE:** Using a pen, point to the marking indicating ~100 on PI-11-107A and ~50 on PI-11-108A.	Cooling Water verified available to diesel generator			
	9. **CONTACT** MCR to verify EDG output breaker is closed.	MCR contacted to verify EDG output breaker is closed.			
CUE: You have met the termination criteria for this JPM					

JPM Completion Time _____

Exelon Generation

JPM SUMMARY

Operator's Name:_____.

Job Title: ☐ SED ☐ SM ☐ SRO ☐ RO ☐ STA/IA ☐ EO ☐ OTHER

JPM Title: D11 DIESEL LOCAL MANUAL START

JPM Number: LOJPM2236 **Revision Number:** 000

Task Number and Title: 2000450401, (E-10/20) Actions for a Loss of Offsite Power (RO)
2640020101, Manually startup, load and monitor a Diesel Generator (RO)
2640020104, Local and Remote Manual Startup of a Diesel Generator (EO)
2000670504, Respond to Loss of Offsite Power (EO)

K/A Number and Importance:

264000	A2.09	3.7/4/1
295003	AA1.02	4.2/4.3

Safety Function (1-9) 6 .

Admin Category (A1-4) _____

Level of Difficulty (1-5) 3

Suggested Testing Environment: In-Plant

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

Reference(s): E-10/20, Loss of Offsite Power, Rev. 53

S92.1.O, Local and Remote Manual Startup of a Diesel Generator Hard Card, Rev. 0

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

Testing Method: ☒ Simulate ☐ Perform

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

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

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

Comments:_____

Evaluator's Name: _____ (Print)

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

LIMERICK GENERATING STATION

JOB PERFORMANCE MEASURE

INDIVIDUAL BRIEFING SHEET

INITIAL CONDITIONS:

1. A Loss Of Offsite Power (LOOP) has occurred
2. E-10/20, Loss of Offsite Power, is being performed.
3. D11 Diesel Generator has failed to start automatically and manually from the MCR.

INITIATING CUE STATEMENT (Describe the task clearly)**:**

The CRS has directed you to manually start D11 Diesel Generator locally using S92.1.O, Appendix 1, Local Manual Startup of a Diesel Generator Hard Card, as directed by E-10/20.