

NUREG 1021

August 20, 2010

Mr. Marc Dapas, Acting Administrator
U.S. NRC Region I
475 Allendale Road
King of Prussia, PA 19406

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: Submittal of Licensed Operator Examination Materials

Reference: a. NRC Letter dated 6/14/10 SRO & RO Initial Exams-LGS
b. Exelon Limerick Letter Dated 7/20/10 ILT Exam Outlines

Dear Sir,

As requested in the referenced letter a, the following NUREG-1021 required documents have been provided to Mr. J. Caruso regarding the Initial Operator Licensing Exams to be administered beginning on October 4, 2010 at Limerick Generating Station.

- ES-201-3 Examination Security Agreement
- ES-D-1 Scenario Outlines (modified)
- ES-D-2 Operator Actions
- ES-301-3 Operating Testing Quality Checklist
- ES-301-4 Simulator Scenario Quality Checklist
- ES-301-5 Transient and Event Checklist
- ES-301-6 Competencies Checklist
- ES-401-4 Record of Rejected K/As
- ES-401-6 Written Exam Quality Checklist

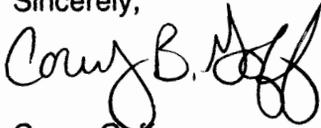
Written Examination with supporting documentation
Facility Walk-Through JPMs with supporting documentation
Proposed Examination Schedule

In accordance with NUREG 1021, please ensure that these materials are withheld from public disclosure until after the examinations are complete.

There are no commitments contained in this letter.

Should you have any questions concerning this letter or the examination outlines, please contact Corey Goff at (610) 718-4040.

Sincerely,



Corey Goff
Manager-Operator Training-LGS
Exelon Generation Corp. LLC

Enclosures: Documents stated above to Mr. J. Caruso only

cc: J. Caruso, USNRC, Region I	(w/encl)
S. Hansell, USNRC, Region I	(w/o encl)
E. DiPaolo USNRC Senior Resident Inspector, LGS	(w/o encl)
NRC Document Control Desk, USNRC, Washington, DC	(w/o encl)

bcc: W. Maguire-GML 5-1(w/o encl)
E. Callan-GML 5-1 (w/o encl)
P. Gardner – GML 5-1 (w/o encl)
R. Dickinson- LLC-319 (w/o encl)
C. Goff- LLC-319 (w/o encl)
R. Monahan LLC-319 (w/o encl)
J. Hunter III SSB 2-4 (w/o encl)
A. Columbus SSB 4-1 (w/o encl)
PA DERBRP Inspector, LGS SSB2-4 (w/o encl)

Facility: LGS Date of Examination: 10/04/10
 Examination Level: RO SRO Operating Test Number: ILT09-1

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N, S	G.2.1.3 Shift Turnover Checklist
Conduct of Operations		
Equipment Control	N, R	G.2.2.12 Review ST-6-047-370-1, Pre Control Rod Withdrawal Check
Radiation Control	D,R,P	G.2.3.11 Gaseous Effluent Release Rate Determination (2008 RO A3)
Emergency Procedures/Plan	M, S	G.2.4.12 Activate Site Evacuation Alarm <i>Replaced</i>

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.

* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom
 (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
 (N)ew or (M)odified from bank (≥ 1)
 (P)revious 2 exams (≤ 1; randomly selected)

Exelon Nuclear

Job Performance Measure

PERFORM A SHIFT TURNOVER (RO)

JPM Number: 0750

Revision Number: 000

Date: ___ / ___ / ___

Developed By: _____ Date _____
 Instructor **Date**

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

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

Approved By: _____ Date _____
 Training Department **Date**

PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.
- _____ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

REVISION RECORD (SUMMARY)

New Revision

SIMULATOR SETUP INSTRUCTIONS:

None

INITIAL CONDITIONS:

- Both units are in OPCON 1
- Date is 10/01/10
- Present time is 06:00 Shift Reactor Operators are awaiting oncoming shift personnel
- Shift staffing consisted of normal compliment for upcoming shift

INITIATING CUES:

It is 06:00, You are the oncoming Unit 1 Reactor Operator and are preparing to take day shift duties. You are to complete the Reactor Operator Shift Turnover Checklist, and be prepared to present the shift turnover checklist at the shift meeting.

TASK STANDARD:

Complete Reactor Operators shift turnover checklist and identify any discrepancies and address any concerns prior to assuming shift duties.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. 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 and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Operator's Name: _____

Job Title: NLO RO SRO STA SRO Cert

JPM Title: PERFORM A SHIFT TURNOVER (RO)

JPM Number: LLOJPM0750

Revision Number: 000

K/A Number and Importance: G2.1.3 3.7/3.9 G2.1.18 3.6/3.8

Suggested Testing Environment: Classroom

Actual Testing Environment: Classroom

Testing Method: Simulate **Faulted:** Yes

Alternate Path: No

Time Critical: No

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

References:

OP-AA-112-101 Rev 6

OP-LG-108-104-1000 Rev 0

OP-LG-112-101 Rev 5

RX OPERATORS LOG

OP-LG-112-101-F-04 Rev 2

GP-5, Steady State Operation

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? Yes No

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

Comments: _____

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ Date: _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain copy of OP-LG-112-101-F-04 to determine requirements for shift turnover Cue: Provide copy of OP-LG-112-101-F-04 if requested	OP-LG-112-101-F-04 is obtained			
2. Determine shift turnover checklist requirements for oncoming RO	Shift turnover checklist must be completed prior to taking shift			
3. Unified Narrative Log Reviewed: Cue: Log is Reviewed	N/A			
4. Offgoing Shift Average CTP and 3D Monicore P1 Report Reviewed: Cue: Provide copy of RX OPERATORS LOG #01 and 3D Monicore P1 to candidate	Review Operators Log and P1 to verify reactor is operating within limits as designated by GP-5, Steady state Operation			
*4a. Review 3D Monicore sheet and identify ½ hr average power to be greater than 3458 MWT	Identify on Operators Log the ½ hr. CTP average is greater than 3458 MWT			
4b. Notify SSV that reactor power must be lowered to ensure compliance to the CTP 1 hour average limit.	Candidate may choose to notify SSV or reference GP-5, Steady State Operation			
4c. Reference GP-5, Steady State Operations, Note on page 3 "CTPMON core thermal power averages" and verify CTP half hour average should be used to ensure CTP 1 hour average limit is not exceeded	Reference GP-5, "Note" identifying ½ hr average used to ensure 1hr average is not exceeded			
*4d. Review P1 Report and identify MFLCPR is >1.0	MFLCPR identified >1.0			
4e. Notify SSV that reactor power must be lowered to ensure compliance to the CTP 1 hour average limit.	SSV notified MFLCPR is >1.0			

4f. Reference GP-14, Resolution of Thermal Limit Violation or GP-5, Steady State Operation	Candidate may chose to reference procedures or notify SSV of violation			
<p>*5. ST Log Reviewed:</p> <p>Identify ST Log is not filled out properly. Time/Date Equipment is INOP and Time/Date Equipment is Operable /Action number marked N/A vs actual Time/Date required to be filled in.</p> <p>Cue: Provide copy of OP-LG-108-104-1000 to candidate</p>	ST Log Reviewed and verified Time/Date that Equipment is INOP and when OPERABLE or ACTION NUMBER marked as N/A vs actual Time/Date entered			
<p>6. Annunciator Status Reviewed:</p> <p>Cue: Annunciator status reviewed and verified to satisfactory</p>	Annunciator status reviewed and any annunciators alarmed understood by oncoming RO			
<p>7. Review Reactor Maneuvering Shutdown Instructions:</p> <p>Cue: Provide copy of Reactor Maneuvering Shutdown Instructions</p>	Reactor Maneuvering Shutdown Instructions reviewed			
<p>8. Unit Control Panel Walked Down:</p> <p>Cue: Unit 1 Control Panel walkdown completed</p>	N/A			
<p>9. I have no change in Health Status (Ref OP-AA-105-101)</p>	No change in medical condition that could disqualify me from standing shift:			
<p>10. Verify Qualifications Prior to Taking Shift:</p>	Qualifications Prior to Taking Shift N/A due to a classroom turn-over environment			
(CUE: "You may stop here, you have met the termination criteria for this JPM")	N/A			

JPM Stop Time: _____

INITIAL CONDITIONS:

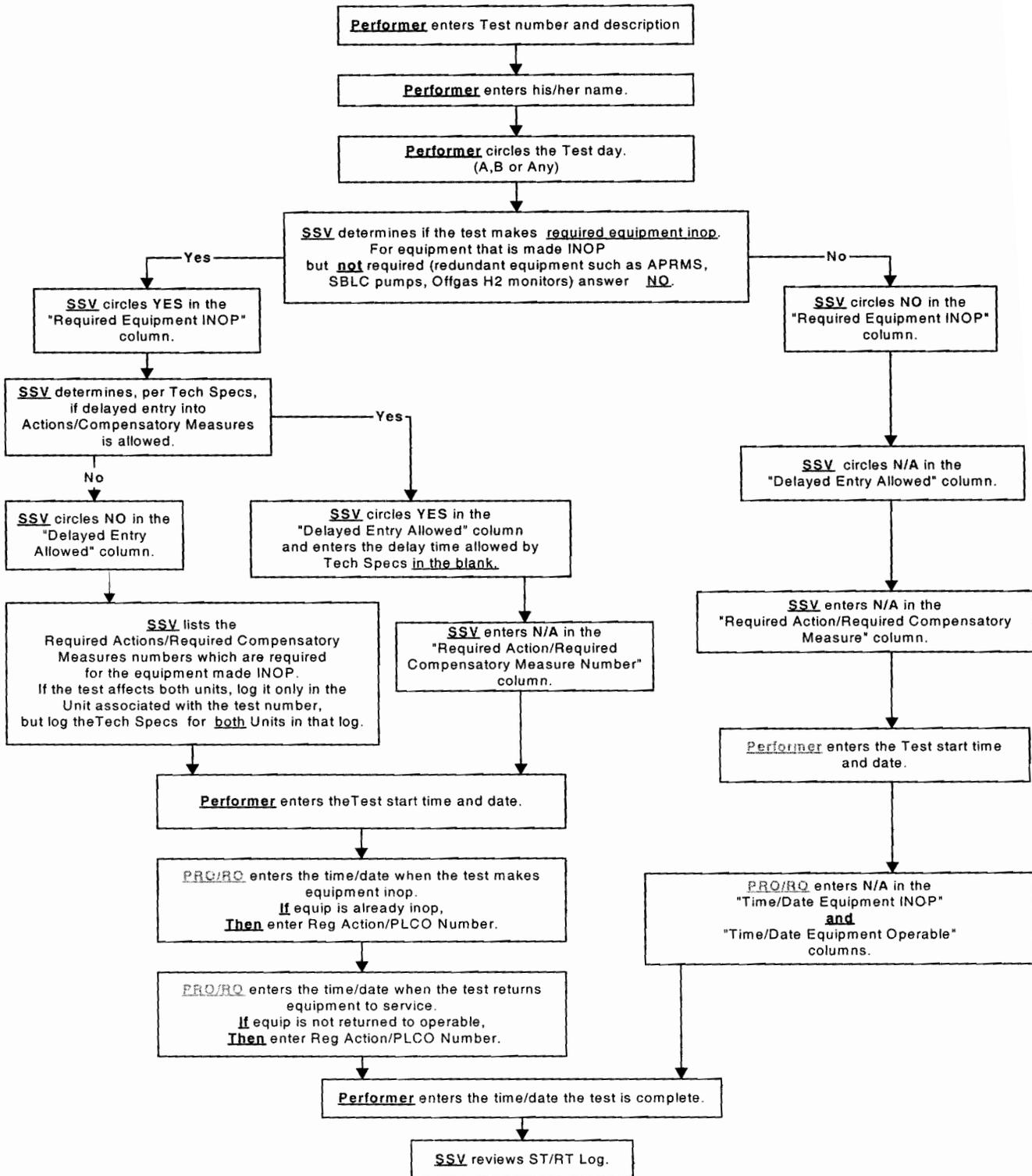
- Both units are in OPCON 1
- Date is 10/01/10
- Present time is 06:00 Shift Reactor Operators are awaiting oncoming shift personnel
- Shift staffing consisted of normal compliment for upcoming shift

INITIATING CUES:

It is 06:00, You are the oncoming Unit 1 Reactor Operator and are preparing to take day shift duties. You are to complete the Reactor Operator Shift Turnover Checklist, and be prepared to present the shift turnover checklist at the shift meeting.

ATTACHMENT 1

COMPLETING THE ST/RT STATUS LOG (SHORT DURATION TIME CLOCK LOG)



**ST/RT STATUS LOG (SHORT DURATION TIME CLOCK LOG)
CIRCLE ONE
(PRO / R01 / R02)**

Test Number/ Description	Test Day	Req'd Eqpt Inop?	Delayed Entry Allowed?	Required Action/Required Compensatory Measure Number	Per-former	Test Start Time/ Date	Time/ Date Eqpt Inop	Time/Date Eqpt Operable OR Action Number	Time/Date Test Complete
ST-2-026-617-1 Reactor Coolant Sys Leakage RISH-26-1K600	A B Any	Yes No	Yes ___ Hrs No N/A	3.4.3.1	I&C	0400 10/01/10	N/A	N/A	
	A B Any	Yes No	Yes ___ Hrs No N/A						
	A B Any	Yes No	Yes ___ Hrs No N/A						
	A B Any	Yes No	Yes ___ Hrs No N/A						
	A B Any	Yes No	Yes ___ Hrs No N/A						
	A B Any	Yes No	Yes ___ Hrs No N/A						
	A B Any	Yes No	Yes ___ Hrs No N/A						

RPV NORMAL

CNTMT ALARM

RU

RA

CH 3

PM 47

RX 2

FC 2

T 13

CW 2

SS 22

EL 6

801

RX OPERATORS LOG #01

P6CMWT	NSS P6 CTP	3456.8	MWTH
P6PCTPWR	NSS P6 PCT PWR	100.0	% PWR
C51C4001	APRM AVG PWR	100.1	% PWR
E025	GEN GROSS PWR	1144.0	MWE
B033	SELECTED NR LVL	34.2	IN
B016	WR RX PRESS	1052.6	PSIG
B018	CORE FLOW	92.0	MLB/HR

F107	A COND VAC	24.90	INHG
F108	B COND VAC	25.90	INHG
F109	C COND VAC	26.78	INHG
M002	BAROM PRESS	29.92	INHG

F177	A RFPT OIL CLR OUT	116.7	° F
F180	B RFPT OIL CLR OUT	116.3	° F
F183	C RFPT OIL CLR OUT	117.6	° F

E025	GEN GROSS PWR	1144.0	MW
E026	GEN REACTIVE PWR	126.96	MVAR
E027	GEN CURRENT	30.84	KAMP
E028	GEN VOLTAGE	21.55	KV

E047	13KV AUX BUS 11	12.93	KVAC
E048	13KV AUX BUS 12	12.93	KVAC
E050	D11 4KV SFGD BUS	4.31	KVAC
E052	D13 4KV SFGD BUS	4.31	KVAC
E051	D12 4KV SFGD BUS	4.28	KVAC
E053	D14 4KV SFGD BUS	4.28	KVAC
E1523	A SFGD BATT NEG	135.0	VDC
E1520	A SFGD BATT POS	135.0	VDC
E1553	B SFGD BATT NEG	135.0	VDC
E1551	B SFGD BATT POS	135.0	VDC
E057	C SFGD BATT	135.0	VDC
E058	D SFGD BATT	135.0	VDC

GP-5 CTP DATA

C552	SHIFT AVG CTP	3457.5	MWTH
C553	SHIFT DESIRED	3458.0	MWTH
C557	HALF HR AVG CTP	3464.8	MWTH
C556	ONE HR AVG CTP	3457.5	MWTH
C555	TWO HR AVG CTP	3457.5	MWTH
C554	12 HR AVG CTP	3457.5	MWTH
C552PREV	PREV SHFT AVG CTP	3457.5	MWTH

C042	FW TEMP	432.02	° F
C012	3RD FW HTR FLOW	15.024	MLB/HR

06:00:00 -I- Loading display MSP801

Ack	Log
Ack	Log

LIMERICK 1

10-10-10

06:00:00

MENU	FWD	BWD	LAST
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SEQUENCE NO 6
 10-OCT-2010 06:00 CALCULATED
 10-OCT-2010 06:00 PRINTED
 CASE ID FMLD1100805071002
 RESTART FMLD1100805070919
 LPRM ABSOLUTE - FULL CORE

BIMERICH-1 CYCLE 14
 3D MONICORE
 PERIODIC LOG

CORE PARAMETERS
 POWER MWT 3457.
 POWER MWE 1142.
 FLOW MLB/HR 91.793
 FPAPDR 0.835
 SUBC BTU/LB 22.93
 PR PSia 1057.7
 CORE MWD/sT 50000.0
 CYCLE MWD/sT 22000.0
 MCPP 1.420

CALC RESULTS
 Keff 1.0049
 XE WORTH % -2.11
 XE RATED 0.93
 AVE VF 0.451
 FLLLP 0.920

LOAD LINE SUMMARY
 CORE POWER 100.0%
 CORE FLOW 91.8%
 LOAD LINE 105.8%

COPRECTION FACTOR: MFLCPR= 1.000 MFLPD= 1.000 MAPRAT= 1.000 ZBB= 2.23 ft
 OPTION: ARTS 2 LOOPS ON MANUAL FLOW MCPRLIM= 1.330 FCBB= N/A

MOST LIMITING LOCATIONS (NON-SYMMETRIC)

MFLCPR	LOC	MFLPD	LOC	MAPRAT	LOC	PCPRAT	LOC
1.010	31-42	0.793	15-18- 5	0.776	45-16- 5	0.845	33-16- 4
1.006	31-46	0.792	17-16- 5	0.774	15-18- 5	0.833	53-14- 5
1.004	33-32	0.785	47-20- 5	0.773	17-16- 5	0.828	57-28- 4
1.000	31-38	0.783	45-14- 5	0.771	47-20- 5	0.822	47- 8- 5
0.991	45-32	0.781	47-16- 5	0.771	29-30- 5	0.778	15-18- 5
0.988	23-32	0.776	31-46-12	0.768	31-46-12	0.777	17-16- 5
0.987	27-36	0.773	29-48-12	0.768	17-18- 5	0.777	31-46-12
0.983	47-38	0.772	19-18- 5	0.765	45-14- 5	0.777	47-20- 5
0.977	25-34	0.772	17-20- 5	0.763	19-18- 5	0.774	45-14- 5
0.983	37-48	0.771	29-38- 8	0.762	47-22- 5	0.771	29-38- 8

SEQ. A-2 C=MFLCPR D=MFLPD M=MAPRAT P=PCPRAT *=MULTIPLE CORE AVE AXIAL

						NOTCH	REL PW	LOC							
						00	0.287	25							
						02	0.328	24							
59						04	0.491	22							
L						06	0.693	21							
55						08	0.734	20							
51						10	0.797	19							
L						12	0.902	18							
47						14	0.923	17							
43		06	C06			16	0.964	16							
L						18	1.033	15							
39						20	1.046	13							
35		06		06		22	1.102	13							
L						24	1.196	12							
31						26	1.214	11							
27		06		06		28	1.266	10							
L						30	1.352	09							
23						32	1.369	08							
19		D	06	06		34	1.410	07							
L						36	1.478	06							
15			P	M		38	1.491	05							
11						40	1.278	04							
L						42	0.924	03							
07						44	0.853	02							
03						46	0.426	01							
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58

CORE AVERAGE RADIAL POWER DISTRIBUTION

RING #	1	2	3	4	5	6	7	8
REL PW	0.000	0.000	0.001	0.009	0.043	0.281	0.807	0.863

SEQUENCE N

10-OCT-2010 06:00 CALCULATED

10-OCT-2010 06:00 PRINTED

CASE ID FMLD1100805071002

RESTART FMLD1100805070919

LPRM ABSOLUTE - FULL CORE

CYCLE	INSTRUMENT READINGS/STATUS						
	CALIBRATED LPRM READINGS						
57F	19.3	28.2	28.8	25.2			
C	19.2	32.3	32.9	27.9			
P	14.6	32.3	33.0	26.0			
A	9.1	24.4	25.1	26.0			
49D	23.3	37.9	40.0C	42.6	40.1	30.2	
C	25.0	45.8	52.7	52.5	53.5	35.2	
B	21.4	54.0	61.1	60.5	62.5	39.0	
A	13.4	56.3	65.3	60.7	68.7	35.2	
41D	35.5	42.0	44.7	42.0	45.0	40.1	25.0
C	42.3	54.9	51.1	51.8	54.9	53.5	27.9
B	50.7	63.2	56.8	56.5	61.4	62.5	26.1
A	51.3	67.2	53.4	52.4	63.0	68.8	18.4
33D	37.5	42.5	49.1	50.6	42.0	42.5	28.5
C	45.5	47.7	65.6	63.9	51.8	52.4	33.0
B	54.9	54.0	71.0	68.0	56.6	60.6	33.1
A	55.1	49.9	67.0	65.3	52.5	60.8	25.2
25D	36.9	41.7	48.5	49.2	44.7	39.9	28.0
C	44.7	50.2	59.0	65.7	51.3	52.7	32.2
B	54.4	57.4	64.0	71.1	57.0	61.3	32.3
A	57.6D	55.9	61.8	67.0	53.5	65.7	24.5
17D	31.5	40.5	41.6	42.5	42.0	37.9	19.1
C	36.4	50.4	50.2	47.7	55.0	45.8	19.1
B	39.7	58.7	57.4	54.1	63.4	54.1	14.6
A	32.8	64.3	55.8	49.7P	67.3M	56.7	9.2
09D		31.6	36.9	37.5	35.6	23.4	
C		36.3	44.7	45.5	42.4	25.2	
B		39.7	54.4	55.0	50.9	21.6	
A		32.7	57.4	54.9	51.2	13.5	
	08	16	24	32	40	48	56

OF TIPS NOT SCANNED:

FAILED SENSORS:

LPRM (NONE FAILED)

LPRM (0 PANACEA REJECTED)

OTHER SENSORS (0 TOTAL)

SUB RODS

NONE

T = TIP RUN RECOMMENDED

C = MFLCPR LOCATION

M = MAPRAT LOCATION

D = MFLPD LOCATION

P = PCRAT LOCATION

* = MULTIPLE LOCATION

CORE SUMMARY

CORE POWER	100.0%	CALC SUB FLOW	87.2%	DP MEAS PSI	12.50
CORE FLOW	91.8%	OPER SUB FLOW	-1.0%	DP CALC PSI	12.50
LOAD LINE	105.8%	FLOW BASIS	MEAS	FEEDWTR FLOW MLB/HR	15.10

APRM CALIBRATION

READING	1	2	3	4
AGAF	99.9	100.0	99.9	99.9
	1.001	1.000	1.001	1.001

APRM - %CTP -0.1 0.0 -0.1 -0.1

TIP RUNS RECOMMENDED

STRINGS: NONE

EFFECTIVE FLOW	MLB/HR	28.64
FEEDWTR TEMP	DFG.F	431.8

Exelon Nuclear

Job Performance Measure

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

JPM Number: 0752

Revision Number: 000

Date: ____/____/____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Review By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by Examiner review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, Examiner sign and date JPM cover page.
- _____ 1. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

REVISION RECORD (Summary):

New Revision

SIMULATOR SETUP INSTRUCTIONS:

None

JPM Setup Instructions:

Provide a yellow copy of a Partial ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations.

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.

TASK CONDITIONS:

Unit 1 is in OPCON 5, with Reactor Vessel Head still on

Today's date is 10/01/2010. You are the oncoming DAY shift RO

Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was initiated on night shift.

- Pre-Control Rod Withdrawal Checks are required for Control rods 10-11, 18-15, 34-03 and 42-15.
- 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.

Information for Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. 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 and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

PERFORMANCE CHECKLIST:

JPM Start Time _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1. Hand the applicant: • ST-6-047-370-1 • JPM cue sheet	Review the handouts			
*2. RO identifies Additional Action/Test Comments section of ST-6-047-370-1 is not signed by person making comments	Additional Action/Test Comments section of ST-6-047-370-1 is not signed			
*3a. RO candidate reviews test and identifies step 4.5.7 not verified, Unit 1 is in OPCON 5, with Reactor Vessel Head still on, 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			
3b. RO candidate identifies step 4.5.11 must be completed prior to withdrawing control rod.	SRO verification required prior to moving control rod			
*4. RO candidate identifies per ATTACHMENT 1 that "CRD Accumulators ST" ST-2-047-400-1 with the over-due-date of 9/27/10 makes it out of surveillance and the most limiting ST	ST-2-047-400-1 identified as the most limiting and is over-due as of 9/27/10			
*5. RO candidate identifies 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.	Control rod 34-03 Section 4.5 requirements not completed			
6. 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 may stop here. You have reached the termination criteria for this JPM)				

JPM Stop Time _____

TASK CONDITIONS:

Unit 1 is in OPCON 5, with Reactor Vessel Head still on

Today's date is 10/01/2010. You are the oncoming DAY shift RO

Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was initiated on night shift.

- Pre-Control Rod Withdrawal Checks are required for Control rods 10-11, 18-15, 34-03 and 42-15.
- 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.

Exelon Nuclear

Job Performance Measure

Determine Offgas Effluent Activity Release Rate

JPM Number: 0760

Revision Number: 000

Date: ____ / ____ / ____

Developed By: _____ **Instructor** _____ **Date**

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

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

Approved By: _____ **Training Department** _____ **Date**

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by Examiner review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, Examiner sign and date JPM cover page.
- _____ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

REVISION RECORD (Summary):

JPM SETUP INSTRUCTIONS:

- Provide applicant copy of GP-5 "STEADY STATE OPERATIONS"
- Provide calculator to applicant

INITIAL CONDITIONS:

- Unit 1 is in OPCON 1
- RR-26-1R601 "A" SJAЕ Discharge Rad Monitor reads 110mRem/hr
- RR-26-1R601 "B" SJAЕ Discharge Rad Monitor reads 131mRem/hr
- FR-69-115 (scfm) Point 2 Reads 35 scfm
- FIT-070-150 at local panel, 10C582 reads 35 scfm

INITIATING CUES:

- Per GP-5, Steady State Operations, calculate the average offgas pre-treatment radioactivity release rate

TASK STANDARD:

- The applicant should calculate the average pre-treatment release rate to be 4619 to 5105 (4862 +/- 5%)

The following placard is mounted to the 10C600 panel:

U/1 OFFGAS SUM OF SIX	<u>140</u>
K "A"	<u>1.18</u>
K "B"	<u>1.13</u>
DATE:	<u>10/01/10</u>

Information for Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. 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 and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Operator's Name: _____

Job Title: ~ NLO **X RO** SRO ~ STA ~ SRO Cert

JPM Title: Determine Offgas Effluent Activity Release Rate

JPM Number: 0760

Revision Number: 000

K/A Number and Importance: G2.3.11 Ability to Control Radiation Releases (CFR:
41.11 / 43.4 / 45.10) IMPORTANCE RO 3.8 SRO 4.3

Suggested Testing Environment: Classroom - Group

Actual Testing Environment: _____

Testing Method: Table-top Faulted: Yes

Alternate Path: No

Time Critical: No

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

References: GP-5, Steady State Operation Revision 145

EVALUATION SUMMARY:

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

The operator's performance was evaluated against the standards contained in this JPM, and has been determined to be: ~ **Satisfactory** ~ **Unsatisfactory**

Comments: _____

Note: Any grade of UNSAT requires a comment.

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ Date: _____

NOTE: Critical Element(s) indicated by * in Performance Checklist.

PERFORMANCE CHECKLIST:

JPM Start Time _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
<p>1. CALCULATE Off-gas release rates for the A AND B channels using the following equation:</p> $RR = RL \times F \times K$ <p>Where:</p> <p>RR = Release Rate for A(B) (μCi/second)</p> <p>RL = Radiation Level of SJAE as indicated on RR-26-*R601 (mRem/hour)</p> <p>F = Off-gas flow as indicated by FR-69-*15 (scfm), Point 2</p> <p>K = C Conversion Factor for A(B) data (posted on panel *0C600)</p>	<p>N/A</p>			
<p>2. Channel A (Point 1)</p> $RR = \frac{\text{mRem/hour} \times \text{CFM}}{K}$ <p>RR = _____ μCi/second</p>	<p>Calculate "A" channel release = 4543 μCi/sec</p> $110 \times 35 \times 1.18 = 4543$			
<p>3. Channel B (Point 2)</p> $RR = \frac{\text{mRem/hour} \times \text{CFM}}{K}$ <p>RR = _____ μCi/second</p>	<p>Calculate "B" channel release = 5181 μCi/sec</p> $131 \times 35 \times 1.13 = 5181$			

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
<p>*4. CALCULATE the average of the A AND B channel values to obtain the average Off-gas pretreatment release rate as follows:</p> $ARR = \frac{(RR \text{ "A"} + (RR \text{ "B"}))}{2}$ <p>Where:</p> <p>ARR = Average Off-gas Pretreatment Release Rate (μCi/second)</p> <p>RR "A" = Release Rate value for "A" Channel (μCi/second)</p> <p>RR "B" = Release Rate value for "B" Channel (μCi/second)</p> $ARR = \frac{(\quad) + (\quad)}{2}$ <p>ARR = _____ μCi/second</p>	<p>Calculate the average release rate</p> $ARR = (4543 + 5181) / 2 = 4862 \text{ } \mu\text{Ci/sec}$ <p>Acceptable band is 4619 to 5105 (4862 +/- 5%)</p>			
(CUE: You may stop here; you have met the termination criteria for this JPM.)	N/A	N/A		

JPM Stop Time _____

INITIAL CONDITIONS:

- Unit 1 is in OPCON 1
- RR-26-1R601 "A" SJAE Discharge Rad Monitor reads 110mRem/hr
- RR-26-1R601 "B" SJAE Discharge Rad Monitor reads 131mRem/hr
- FR-69-115 (scfm) Point 2 Reads 35 scfm
- FIT-070-150 at local panel, 10C582 reads 35 scfm

INITIATING CUES:

- Per GP-5, Steady State Operations, calculate the average offgas pre-treatment radioactivity release rate

The following placard is mounted to the 10C600 panel:

U/1 OFFGAS	
SUM OF SIX	<u>140</u>
K "A"	<u>1.18</u>
K "B"	<u>1.13</u>
DATE:	<u>10/01/10</u>

Exelon Nuclear

Job Performance Measure

RO Only - INITIATE SITE EVACUATION

JPM Number: LLOJPM0761

Revision Number: 000

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
 Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure EP-AA-113-F-04 Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. Revision 000, New based on 2002 ILT JPM

SIMULATOR SETUP INSTRUCTIONS

1. This JPM must be performed in the Simulator, any IC may be used

TASK STANDARD:

Evacuation Alarm Sounded and Announcement made per EP-AA-113-F-04

INITIAL CONDITIONS:

1. A Site Area Emergency drill has been declared
2. Drill conditions require a site evacuation, Evacuating personnel shall:
 - Exit the protected area via the TSC Guard Station
 - Exit the site via Evergreen Road
 - Assemble at the Pottstown Limerick Airport

INITIATING CUES:

The Control Room Supervisor has directed you to sound the site evacuation alarm for the entire plant and make the plant announcement for evacuation per EP-AA-113-F-04, Section 5, LGS SITE EVACUATION ALARM / ANNOUNCEMENT INSTRUCTIONS

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

JPM SUMMARY

Operator's Name: _____ **Job Title:** SED RO SM SRO
 STA/IA OTHER

JPM Title: RO Only - INITIATE SITE EVACUATION

JPM Number: LLOJPM0097 Revision Number: 009

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 2.4.39 RO: 3.9

Suggested Testing Environment: Simulator or quiet area with appropriate Emergency Plan documents

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

Reference(s):

Procedure EP-AA-113 -F-04 Rev: H

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:** _____

JPM Start Time: _____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
1.	SET the "Siren Tone Generator" selector switch, located on MCR Panel 00C650, to the SIREN (harmonic tone) position.	Switch set to SIREN	—	—	—
*2.	PULL OUT the "Evacuation Alarm and River Warning Select" switch, located on MCR Panel 00C650. <ul style="list-style-type: none"> • ROTATE the "Evacuation Alarm and River Warning Select" switch to the PLANT ALARM position, and PUSH selector switch IN. <p>QUE: When Switch is pushed in "Alarm is Sounding"</p>	Switch set to PLANT ALARM and pushed in to sound the alarm			
3.	Sound alarm for approximately 30 seconds <p>QUE: When Switch is pulled out "Alarm is no longer sounding"</p>	Alarm sounded for approximately 30 seconds <p>Switch pulled out to stop alarm</p>	—	—	—
*4.	Return "EVACUATION ALARM AND RIVER WARNING SELECT" switch to "OFF" position to silence alarm.	Switch selected to OFF	—	—	—

INITIAL CONDITIONS:

1. A Site Area Emergency drill has been declared
2. Drill conditions require a site evacuation, Evacuating personnel shall:
 - Exit the protected area via the TSC Guard Station
 - Exit the site via Evergreen Road
 - Assemble at the Pottstown Limerick Airport

INITIATING CUES:

The Control Room Supervisor has directed you to sound the site evacuation alarm for the entire plant and make the plant announcement for evacuation per EP-AA-113-F-04, Section 5, LGS SITE EVACUATION ALARM / ANNOUNCEMENT INSTRUCTIONS

Facility: LGS Date of Examination: 10/04/10
 Examination Level: RO SRO Operating Test Number: ILT09-1

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N, S	G.2.1.3 Shift Turnover Checklist
Conduct of Operations	N, R	G.2.1.8 Coordinate Personnel Activates Outside the Control Room <i>Replaced</i>
Equipment Control	N, R	G.2.2.12 Review ST-6-047-370-1, Pre Control Rod Withdrawal Check
Radiation Control	D,R,P	G.2.3.6 Review and Approve a Liquid Rad Waste Discharge Permit, (2008 SRO A3)
Emergency Procedures/Plan	D, R	G.2.4.21 Make an E-plan Classification, (0131)

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.

* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom
 (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
 (N)ew or (M)odified from bank (≥ 1)
 (P)revious 2 exams (≤ 1; randomly selected)

Exelon Nuclear

Job Performance Measure

PERFORM A SHIFT TURNOVER (SRO)

JPM Number: 0751

Revision Number: 000

Date: ____ / ____ / ____

Developed By: _____ **Date**
Instructor

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

Review By: _____ **Date**
Operations Representative

Approved By: _____ **Date**
Training Department

Job Performance Measure (JPM)

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by SME review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.
- _____ 12. 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

Job Performance Measure (JPM)

REVISION RECORD (SUMMARY)

New Revision

SIMULATOR SETUP INSTRUCTIONS:

None

INITIAL CONDITIONS:

- Date is 10/01/10
- Present time is 06:00 Control Room Shift Supervisor is awaiting oncoming shift personnel
- Shift staffing consisted of normal compliment for upcoming shift

- Unit 1 in OPCON 2: GP-2 Reactor Startup
- Reactor power presently is 8% power
- At 04:00 commenced raising reactor pressure from 920 - 960 psig.

- Unit 2 in OPCON 1: 100% power

INITIATING CUES:

It is 06:00, You are the oncoming Unit 1 Control Room Shift Supervisor and are preparing to take day shift duties. You are to complete the Control Room Shift Supervisor Shift Turnover Checklist, identify any TECH SPEC concerns, and be prepared to perform the shift briefing meeting.

TASK STANDARD:

Complete Control Room Supervisor Shift Turnover Checklist and identify any discrepancies and address any concerns prior to assuming shift duties.

TECH SPECS are required for this JPM

Job Performance Measure (JPM)

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. 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 and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Job Performance Measure (JPM)

Operator's Name: _____

Job Title: NLO RO SRO STA SRO Cert

JPM Title: PERFORM A SHIFT TURNOVER (SRO)

JPM Number: LLOJPM0751

Revision Number: 000

K/A Number and Importance: G2.1.3 3.7/3.9 G2.1.18 3.6/3.8

Suggested Testing Environment: Classroom

Actual Testing Environment: Classroom

Testing Method: Simulate **Faulted:** Yes

Alternate Path: No

Time Critical: No

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

References:

OP-AA-112-101 Rev 6 TECH SPECS

OP-LG-112-101 Rev 5

OP-LG-112-101-F-02 Rev 2

EVALUATION SUMMARY:

Were all the Critical Elements performed satisfactorily? Yes No

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

Comments: _____

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ Date: _____

JPM Start Time: _____

<u>ELEMENT</u>			<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain copy of OP-LG-112-101-F-02 to determine requirements for shift turnover Cue: Provide copy of OP-LG-112-101-F-02 AND Action Log (Actions expiring 48 hrs) TECH SPECS required			OP-LG-112-101-F-02 is obtained			
2. Determine that shift turnover checklist requirements are completed for oncoming SRO			Shift turnover checklist must be completed prior to taking shift			
Control Room Supervisors Shift Turnover Checklist			Offgoing supervisor's responsibility			
UNIT	1	2	Identify Unit 1 is at 8% reactor power Unit 2 is at 100% reactor power			
MODE / % POWER	2 / 8%	1 / 100%				
PRI CONT EST: (Y/N)	N	Y				
SEC CONT EST: (Y/N)	Y	Y				
Refuel Floor Sec. Cont EST: (Y/N)		N				
Note: Candidate may review Unit 1, Common, Unit 2 turnover checklist in any order						
*3. Determine Unit 1 is in OPCON 2 (STARTUP) with Primary Containment not established and Unit 2 is in OPCON 1			TECH SPEC 3.6.1.1 requires Primary Containment in OPCON 2			
3a. Candidate references TECH SPECS 3.6.1.1 to verify OPCON 2 requirements for Primary Containment Note: TECH SPECS required for Primary Containment determination			TECH SPECS referenced Primary Containment must be established W/I 1 hr. or HOT SHUTDOWN W/I 12 hrs.			
4a. Candidate references TECH SPECS 3.5.1 to identify HPCI operability determination must be performed within 12 hours of RPV pressure exceeding 920 psig. or RPV pressure reduced to <200 psig.			HPCI operability determination W/I 12 hrs of RPV pressure of 920 psig.			

<p>4b. Unit 1 T.S. Equip. Status OR Conditions (LCOs ≤ 72hrs) – Identify the following systems must be declared operable W/I 12 hrs of RPV pressure exceeding 920 psig.</p> <ul style="list-style-type: none"> • HPCI, T.S. 3.5.1 • RCIC, T.S. 3.7.3 	<p>Both HPCI and RCIC must be declared operable W/I 12 hrs of RPV pressure exceeding 920 psig.</p>			
<p>5. Unit 2 Significant Activities in progress or planned (for next shift) – Identify upcoming shift events</p> <ul style="list-style-type: none"> • D24 EDG operability run • ECCS Lineup verification 	N/A			
<p>5a. Unit 2 T.S. Equip. Status OR Conditions (LCOs ≤ 72hrs) – Identify D24 EDG T.S. 3.8.1.1.a and (action e) requirements</p>	TECH SPECS referenced for EDG requirements			
<p>6. Common Significant Activities in progress or planned (for next shift) – Identify following activities:</p> <ul style="list-style-type: none"> • Schuylkill River pump house cleanup 				
<p>*6a. Common T.S. Equip. Status OR Conditions (LCOs ≤ 72hrs) – Identify the following</p> <ul style="list-style-type: none"> • Identify "B" SBGT INOP and is required to be operable for Unit 1 to enter OPCON 1 	TECH SPECS referenced for SBGT requirements			
<p>Candidate references TECH SPECS 3.6.5.3 to identify SBGT operability requirements</p>				
<p>Note: Candidate continues with page 2 of Shift Turnover Checklist</p>				
<p>5. Unified Narrative Log reviewed: Cue: Narrative Log reviewed</p>	N/A			
<p>6 I have no change in health status: (Ref OP-AA-105-101)</p>	N/A			
<p>*7. Review LCO/PLCO expiration dates: - Identify LCO/PLCO's expiration dates in ESOMS Cue: Action Log is from ESOMS</p>	Identify actions required to meet LCO's			

Note: ACTION LOG may be reviewed in conjunction with significant activities for Unit 1, Unit 2 and Common

*7a. ACTION LOG reviewed – Action Log - Actions expiring 48 hrs. coincide with Unit 1, Unit 2, and Common significant activities.	Unit 1 activities – HPCI/RCIC operability and SGBT operability requirements for OPCON 1 Unit 2, D24 EDG test run			
8. Panel Walkarounds Completed: Cue: Panel Walkdowns complete	N/A			
9. Control Key Cabinet Reviewed: Cue: WCS is staffed	N/A			
10. Verify Availability of TRIP Pens: Cue: TRIP Pens available	N/A			
13. Verify Qualifications Prior to Taking Shift: Cue: Qualifications verified	N/A			
11. STA status: Cue: You are not the STA	Required to make STA determination prior to taking shift or releasing previous CRS			
(CUE: “You may stop here, you have met the termination criteria for this JPM”)	N/A			

JPM Stop Time: _____

INITIAL CONDITIONS:

- Date is 10/01/10
- Present time is 06:00 Control Room Shift Supervisor is awaiting oncoming shift personnel
- Shift staffing consisted of normal compliment for upcoming shift

- Unit 1 in OPCON 2: GP-2 Reactor Startup
- Reactor power presently is 8% power
- At 04:00 commenced raising reactor pressure from 920 - 960 psig.

- Unit 2 in OPCON 1: 100% power

INITIATING CUES:

It is 06:00, You are the oncoming Unit 1 Control Room Shift Supervisor and are preparing to take day shift duties. You are to complete the Control Room Shift Supervisor Shift Turnover Checklist, identify any TECH SPEC concerns, and be prepared to perform the shift briefing meeting.

**CONTROL ROOM SUPERVISOR
SHIFT TURNOVER CHECKLIST**

DATE: 10/10/10

Shift Day

UNIT	1	2
MODE / % POWER	2 / 8%	1 / 100%
PRI CONT EST: (Y/N)	N	Y
SEC CONT EST: (Y/N)	Y	Y
Refuel Floor Sec. Cont EST: (Y/N)		N

(If two supervisors are staffed, each SSV will fill out the checklist for the applicable unit.)

UNIT: 1	
Significant Activities in progress or planned (for next shift)	GP-2 actions, Enter OPCON 1 and raise RPV pressure to 960 psig HPCI PV&F test ST-6-055-230-1 preparations for "Night" shift Primary Containment not established
T. S. Equip. Status OR Conditions (LCOs ≤ 72 hours)	HPCI and RCIC operability 12 hrs after reaching adequate steam press of 920 psig. D RHRSW INOP
Operational limitations	HPCI HV-055-1F001 Steam Admission Valve stroke time >17 (Max Allowable 16.68 sec) and is being evaluated by EDM (Expected time 6 hrs.)
Major Equipment Status or Conditions	

COMMON	
Significant Activities in progress or planned (for next shift)	Schuylkill River pump house cleanup
T. S. Equip. Status OR Conditions (LCOs ≤ 72 hours)	3.6.5.3 "B" SGBT INOP due to heater repairs
Major Equipment Status or Conditions	

UNIT: 2	
Significant Activities in progress or planned (for next shift)	D24 EDG operability run planned ECCS lineup verification
T. S. Equip. Status OR Conditions (LCOs ≤ 72 hours)	D24 EDG 3.8.1.1.a (action e) D RHRSW PP INOP
Operational limitations	Maintain 100 % power
Major Equipment Status or Conditions	2B RFP vibration (system mgr notified)

OP-LG-112-F-02

1.0 PRE-TURNOVER ITEM REVIEW

- Unified Narrative Log reviewed
- I have no change in health status. (Ref OP-AA-105-101)
- Review LCO/PLCO expiration dates
- Panel Walkarounds Completed
- Control Key Cabinet Reviewed (N/A if WCS Staffed)
- Verify Availability of TRIP Pens
- Verify Qualifications Prior to Taking Shift

Select One of the Following:

- I am **not** the STA.
- I **am** the STA, the IA function is **not** required **AND** I have notified the offgoing STA of my presence on site.
- I **am** the STA, the IA function **is** required, **AND** I have performed face-to-face turnover with the offgoing STA in the Main Control Room per OP-AA-112-101.

RESPONSIBILITY ASSUMED BY: (Oncoming SSV Signature)

Signature: AJ Candidate

Date: 10/10/10

Time: 06:00

POST-TURNOVER ITEM REVIEW

- A/Rs reviewed for Operability Impact
- SSV ST Schedule, A-C-134 & Locked Valve Log Reviewed (N/A if WCS Staffed)
- TPA Log /Report Reviewed
- Review Daily Orders
- Unified Narrative Log Reviewed
- An SCBA with the correct mask size is staged at my workstation
- When making Operability or Potential Operability determinations have in hand and utilize OP-AA-108-115.
- I have verified my schedule for the next two weeks.

Applicable Turnover Sheets Reviewed:

U/1 RO

U/2 RO

PRO

STA : _____

IA if required: _ _____

Action Log – Action expiring 48. hours from 10/01/2010 06:00

	<u>Entry Date/Time</u>	<u>Action Date/Time</u>	<u>Hours to Action</u>	<u>Admin Date/Time</u>	<u>Hours to Admin</u>	<u>Completion Date/Time</u>	<u>Total Action Hours</u>	<u>LCOTR # / Action Statement</u>	<u>LCOTR Status</u>
<u>Active: Unit 1</u>									
Demonstrate the OPERABILITY of HPCI W/ 12 hours of RPV steam Dome pressure >920 psig	10/01/2010 05:00	10/01/2010 17:00	11	10/10/2010 05:00				1-TS-10-0600 TS,1 4.5.1.2.a	
Restore INOP RHRSW pp W/ 30 days	9/20/2010 06:00	10/20/2010 06:00						0-TS-1-0610 TS,1 3.7.1.1	
Restore "B" SBG to OPERABLE W/ 7 Days	9/23/2010 06:00	9/30/2010 06:00	- 24					0-TS-1-0620 TS,1 3.6.5.3	

Active: Unit 2

Restore INOP RHRSW pp W/ 30 days	9/20/2010 06:00	10/20/2010 06:00						0-TS-1-0610 TS,1 3.7.1.1	
Restore "B" SBG to OPERABLE W/ 7 Days	9/23/2010 06:00	9/30/2010 06:00	- 24					0-TS-1-0620 TS,1 3.6.5.3	

Common

Exelon Nuclear

Job Performance Measure

Coordinate Personnel Activities Outside the Control Room

JPM Number: LLOJPM0759

Revision Number: 000

Date:

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JPM STUDENT WORKSHEET

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. 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

JPM STUDENT WORKSHEET

REVISION RECORD (Summary)

1. Revision 000, N/A

SIMULATOR SETUP INSTRUCTIONS

N/A

INITIAL CONDITIONS:

Initial Conditions:

- Today is October 8th
- Unit 1 Reactor power is 100%, Unit 2 Reactor power is 100%,
- During your training week, you are reviewing the work schedule for your EOs for the first day of the day shift next week October 11th
- You have 4 Equipment Operators (EO 1 through EO 4) who are scheduled to report to your shift on day shift
- EO 1 has been on medical leave since Jan. 1, 2010 and this will be his very first day back at the site in 2010
- Working Hour Restrictions will not be evaluated

INITIATING CUES:

Given a work schedule and the qualification reports for the EOs on your crew, determine who can be assigned to perform the scheduled work, shown below and on the attached schedule

TASK STANDARD:

The attached table is completed as in the key

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

JPM STUDENT WORKSHEET

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO STA/IA OTHER

JPM Title: Coordinate Personnel Activities Outside the Control Room

JPM Number: LLOJPM0759 Revision Number: 000

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: G.2.1.8 (4.1)

Suggested Testing Environment: Classroom

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

Reference(s): Procedure Rev: 27

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: _____

JPM STUDENT WORKSHEET

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
* 1. Determines what tasks EO 1 can be assigned to perform.	Determines that EO 1 cannot be assigned to any tasks. NOTE: EO 1 is not currently qualified as an on-shift EO. Also, EO1 cannot enter the RCA due to the lapse of GET training.			
* 2. Determines what tasks EO 2 can be assigned to.	Determines that EO 2 can be assigned to all Tasks except Task 4. NOTE: Task 4 requires an OJT Trainer qualification.			
* 3. Determines what tasks EO 3 can be assigned to.	Determines that EO 3 can be assigned to all Tasks except Task 2 and Task 4. NOTE: Task 4 requires an OJT Trainer qualification and Task 2 requires a torque wrench qualification. EO 3 OJT Qualification will expire prior to the scheduled OJT.			
* 4. Determines what tasks EO 4 can be assigned to.	Determines that EO 4 can be assigned to all Tasks. NOTE: Determines that EO 4 can be assigned to all Tasks.			
CUE: You have met the termination criteria for the JPM. You may stop here				

JPM Stop Time: _____

JPM STUDENT WORKSHEET

INITIAL CONDITIONS:

Initial Conditions:

- Today is October 8th
- Unit 1 Reactor power is 100%, Unit 2 Reactor power is 100%,
- During your training week, you are reviewing the work schedule for your EOs for the first day of the day shift next week October 11th
- You have 4 Equipment Operators (EO 1 through EO 4) who are scheduled to report to your shift on day shift
- EO 1 has been on medical leave since Jan. 1, 2010 and this will be his very first day back at the site in 2010
- Working Hour Restrictions will not be evaluated

INITIATING CUES:

Given a work schedule and the qualification reports for the EOs on your crew, determine who can be assigned to perform the scheduled work, shown below and on the attached schedule:

- Task 1
 - Hang tags inside the RCA for a fire suppression/detection system (0830 – 0900)
 - Remove the tags hung above following work on the fire system (1500 – 1530)
- Task 2
 - Perform a surveillance inside the RCA which includes the use of a calibrated torque wrench (0900 – 1400)
- Task 3
 - Perform Fire Watch duties inside the RCA during the fire suppression/detection system tag-out (0900 – 1500)
- Task 4
 - Perform OJT with EOI inside the RCA (1530 – 1900)
- Task 5
 - Perform Building Operator (RB, TB, Radwaste, Intake) duties (0800 – 2000)

JPM STUDENT WORKSHEET

0800 0900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000

--	--	--	--	--	--	--	--	--	--	--	--	--

1 Hang Tags

Remove Tags

2 Perform Surveillance

3 Perform Fire Watch

**T
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Work Schedule

JPM STUDENT WORKSHEET

State Yes or No, if the EO can be assigned to the tasks listed, as scheduled. Note: An EO can be assigned to multiple tasks, if qualified.

	Task 1	Task 2	Task 3	Task 4	Task 5
EO 1	No	No	No	No	No
EO 2	Yes	Yes	Yes	No	Yes
EO 3	Yes	No	Yes	No	Yes
EO 4	Yes	Yes	Yes	Yes	Yes

- Task 1
 - Hang tags inside the RCA for a fire suppression/detection system (0830 – 0900)
 - Remove the tags hung above following work on the fire system (1500 – 1530)
- Task 2
 - Perform a surveillance inside the RCA which includes the use of a calibrated torque wrench (0900 – 1400)
- Task 3
 - Perform Fire Watch duties inside the RCA during the fire suppression/detection system tag-out (0900 – 1500)
- Task 4
 - Perform OJT with EO 6 inside the RCA (1530 – 1900)
- Task 5
 - Perform Building Operator (RB, TB, Radwaste, Intake) duties (0800 – 2000)

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Job Performance Measure

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

JPM Number: 0753

Revision Number: 000

Date: ____/____/____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Review By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by Examiner review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, Examiner sign and date JPM cover page.
- _____ 1. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

REVISION RECORD (Summary):

New Revision

SIMULATOR SETUP INSTRUCTIONS:

None

JPM Setup Instructions:

Provide a yellow copy of a Partial ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations.

Provide copy of Unit 1 TECH SPECS

TASK STANDARD:

The candidate should report the test is not completed properly due to procedure steps not signed off correctly, no SQR signature, 34-03 Pre Control Rod Withdrawal Checks not performed, and HCU accumulators are out of surveillance.

TASK CONDITIONS:

Unit 1 is in OPCON 5, with Reactor Vessel Head still on

Today's date is 10/01/2010. You are the oncoming DAY shift SRO

Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was initiated on night shift and to be reviewed by the RO and submitted for SRO approval so the 4 Control Rods can be withdrawn.

- Pre-Control Rod Withdrawal Checks are required for Control rods 10-11, 18-15, 34-03 and 42-15.
- 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 and / or TECH SPEC concerns that are required to be addressed prior to withdrawing the 4 Rods

Information for Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. 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 and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

NOTE: Critical Element(s) indicated by * in Performance Checklist.

PERFORMANCE CHECKLIST:

JPM Start Time _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
Note: Hand the applicant: <ul style="list-style-type: none"> • ST-6-047-370-1 • JPM cue sheet • Unit 1 TECH SPECS 	Review the handouts			
*1. SRO candidate identifies comments in the partial test is not signed by the initiator and authorized and dated by an SQR	Signatures required authorizing the partial and SQR review and approval required for any change submitted			
*2. SRO candidate reviews test and identifies step 4.5.7 not verified. (Unit 1 is in OPCON 5, with Reactor Vessel Head still on, 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			
3. SRO candidate identifies step 4.5.11 must be completed prior to withdrawing control rod.	SRO verification required prior to moving control rod			
*4. SRO candidate identifies per ATTACHMENT 1 that "CRD Accumulators ST-2-047-400-1 with the over-due-date of 9/27/10 makes it out of surveillance and the most limiting ST	ST-2-047-400-1 identified as the most limiting with an Over-due-date of 9/27/10			
*5. SRO candidate identifies 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.	Control rod 34-03 Section 4.5 requirements not completed			
*6. 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.			

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
7 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 actions taken for an INOP scram accumulator (action b)			
CUE: (You may stop here. You have reached the termination criteria for this JPM)				

JPM Stop Time _____

TASK CONDITIONS:

Unit 1 is in OPCON 5, with Reactor Vessel Head still on

Today's date is 10/01/2010. You are the oncoming DAY shift SRO

Partial Surveillance Test, ST-6-047-370-1, Pre Control Rod Withdrawal Check Following Core Alterations, was initiated on night shift and to be reviewed by the RO and submitted for SRO approval so the 4 Control Rods can be withdrawn.

- Pre-Control Rod Withdrawal Checks are required for Control rods 10-11, 18-15, 34-03 and 42-15.
- 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 and / or TECH SPEC concerns that are required to be addressed prior to withdrawing the 4 Rods~~

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 through 11 below.

- _____ 1. Task description and number, JPM description and number are identified.
- _____ 2. Knowledge and Abilities (K/A) references are included.
- _____ 3. Performance location specified. (in-plant, control room, or simulator)
- _____ 4. Initial setup conditions are identified.
- _____ 5. Initiating and terminating cues are properly identified.
- _____ 6. Task standards identified and verified by Examiner review.
- _____ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:
Procedure Rev. _____ Date _____
- _____ 9. Pilot test the JPM:
 - a. verify cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- _____ 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 11. When JPM is revalidated, Examiner sign and date JPM cover page.
- _____ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

REVISION RECORD (Summary):

JPM Setup Instructions:

- Provide a completed copy of S63.1.C (Inventory Release from 00T308 Floor Drain Sample Tank Number 2 to Cooling Tower Blowdown Line)

TASK STANDARD:

Applicant should identify that cooling tower blowdown flow is below the required 5000 gpm and should NOT authorize the release

TASK CONDITIONS:

- Floor Drain Sample Tank #2 has been sampled satisfactorily for river release
- The RWEO is performing S63.1.C and has requested FSSV review and approval to commence release to the river.
- The RWEO has the discharge permit ST-5-061-570-0 which was received from Chemistry indicating FDST 2 is sat for river release.
- Cooling tower blowdown flow is now at 4000 gpm.
- No Hold Pond release is in progress.

INITIATING CUE:

You are direct to perform the shift supervisory review required per S63.1.C Step 4.3.7. When complete, note your answer on the JPM cue sheet.

Information for Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes CRITICAL steps.

Number any comments in the "Comment Number" column. 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 and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Operator's Name: _____

Job Title: : SED SM SRO STA/IA OTHER

JPM Title: Review and Approve a Radioactive Liquid Discharge

JPM Number: 0761 Revision Number: 000

K/A Number and Importance: G2.3.11 Ability to control radiation releases.
(CFR: 41.11 / 43.4 / 45.10) IMPORTANCE RO 3.8 SRO 4.3

Suggested Testing Environment: Classroom - Group

Actual Testing Environment: Classroom

Testing Method: Table top - Group Faulted: No

Alternate Path: No

Time Critical: No

Estimated Time to Complete: 30 min Actual Time: _____ minutes

References:

1. S63.1.C Rev 33 (Inventory Release from 00T308 Floor Drain Sample tank Number 2 to Cooling Tower Blowdown Line

EVALUATION SUMMARY:

1. Were all the Critical Elements performed satisfactorily? ~ Yes ~ No

The operator's performance was evaluated against the standards contained in this JPM, and has been determined to be: ~ **Satisfactory** ~ **Unsatisfactory**

Comments: _____

Note: Any grade of UNSAT requires a comment.

Evaluator's Name: _____ (Print)

Evaluator's Signature: _____ Date: _____

NOTE: Critical Element(s) indicated by * in Performance Checklist.

PERFORMANCE CHECKLIST:

JPM Start Time _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1. Hand out the JPM cue sheet and a completed copy of S63.1.C	Start the task when all applicants acknowledge they are ready to begin the JPM.			
2. Hand out a completed copy of S63.1.C for review.	All applicants begin the JPM Log the start time.			
3. Review the completed copy of S63.1.C and the JPM Cue sheet.	Review S63.1.C and JPM cue sheet.			
*4. Determine if the release can be authorized.	If the applicant determines the release can be authorized, initial step 4.3.7 on S63.1.C. This is incorrect.			
5. Step 4.3.7 not signed	If the applicant determines the release should NOT be authorized, then do NOT initial step 4.3.7 of S63.1.C and complete the JPM answer sheet stating that the cooling tower blowdown flow is less than the required amount (5000 gpm).			
Cue: You may stop here, you have met the termination criteria for this JPM	Log completion time.			

JPM Stop Time _____

HANDOUT PAGE

TASK CONDITIONS:

- Floor Drain Sample Tank #2 has been sampled satisfactorily for river release
- The RWEO is performing S63.1.C and has requested FSSV review and approval to commence release to the river.
- The RWEO has the discharge permit ST-5-061-570-0 which was received from Chemistry indicating FDST 2 is sat for river release.
- Cooling tower blowdown flow is now at 4000 gpm.
- No Hold Pond release is in progress.

INITIATING CUE:

You are direct to perform the shift supervisory review required per S63.1.C Step 4.3.7. When complete, note your answer on the JPM cue sheet.

ANSWER Key:

Circle the appropriate answer:

1. Release is APPROVED.
2. Release is NOT approved: state the reason for disapproval below:

Exelon Nuclear

Job Performance Measure

SRO Only - Emergency Classification (TIME CRITICAL)

JPM Number: LLOJPM0097

Revision Number: 010

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure <u>EP-AA-1008</u>	Rev: _____
Procedure <u>EP-AA-111</u>	Rev: _____
Procedure <u>EP-AA-111-F-08</u>	Rev: _____
Procedure <u>EP-AA-112-100-F-01</u>	Rev: _____
Procedure <u>EP-AA-112-100-F-07</u>	Rev: _____
Procedure <u>EP-AA-112-F-09</u>	Rev: _____
Procedure <u>EP-MA-114-100</u>	Rev: _____
Procedure <u>EP-MA-114-100-F-01</u>	Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. Revision 10, minor format changes, no rev markers used

SIMULATOR SETUP INSTRUCTIONS

1. This JPM can be performed in either the Simulator or any other quiet area, provided appropriate Emergency Plan documents are provided in that area. If the Simulator is being used, perform the following:

- **Reset the Simulator to IC-17**

NOTE: It is acceptable 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.

- **Insert Remote Functions:**

- RZZ002 (Met Data Wind Direction) at 311°
- RZZ003 (Met Data Wind Speed) at 5 MPH

2. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
3. This completes the setup for this JPM.
4. If the Simulator is NOT being used, ensure the following is available for candidate use:
 - T-103
 - Sticker Book, Brief Non-Technical Descriptions
 - EP-AA-1008, Both Hot and Cold Matrix
 - EP-AA-111, Emergency Classification and Protective Action Recommendations
 - EP-AA-111-F-08, Limerick / Peach Bottom Plant Based PAR Flowchart
 - EP-AA-112-100-F-01, Shift Emergency Director Checklist
 - EP-AA-112-100-F-07, Mid-Atlantic RO Notification or Augmentation
 - EP-AA-112-F-09, Emergency Public Address Announcements
 - EP-MA-114-100, Mid – Arlantic State / Local Notifications
 - EP-MA-114-100-F-01, State/Local Notification form

INITIAL CONDITIONS:

Unit 1 conditions are as follows:

T = 0

- 'A' Steam Line has ruptured in the Outboard MSIV Room.
- Group 1 Isolation signal is received due to high Steam Line Flow
- "A" Steam Line Inboard And Outboard MSIVs have failed to isolate automatically or manually.

T = 5 minutes

- All control rods are fully inserted
- Reactor Coolant Activity starts to increase

T = 15 minutes

- RPV pressure is 850# and lowering
- RPV level is 18" and steady
- DW pressure is 0.3 psig
- DW Rad Monitor is reading 1.10E+03 (1100R/hr)
- Reactor Coolant Activity is 370uCi/gm
- Outboard MSIV Room temperature is 210 degrees F
- Security and HP personnel have confirmed a steam release outside secondary containment from blowout panels

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 required to make the highest classification based on the given plant conditions and make subsequent call outs. All communications should indicate a drill.

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

JPM SUMMARY

Operator's Name: _____ **Job Title:** SED SM SRO
 STA/IA OTHER

JPM Title: SRO Only - Emergency Classification

JPM Number: LLOJPM0097 Revision Number: 009

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 2.4.41 RO: 2.9 SRO: 4.6

Suggested Testing Environment: Simulator or quiet area with appropriate Emergency Plan documents

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

Reference(s):

- Procedure EP-AA-1008 Rev: 18
- Procedure EP-AA-111 Rev: 16
- Procedure EP-AA-111-F-08 Rev: D
- Procedure EP-AA-112-100-F-01 Rev: K
- Procedure EP-AA-112-100-F-07 Rev: E
- Procedure EP-AA-112-F-09 Rev: C
- Procedure EP-MA-114-100 Rev: 13
- Procedure EP-MA-114-100-F-01 Rev: H

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:** _____

JPM Start Time: _____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>NOTE: IF another SRO is requested to perform an independent Peer Check <u>CUE</u>: A Peer Check will <u>not</u> be provided for this JPM</p>					
1.	Review the Initiating Conditions applicable to the operating mode	EAL Matrix(s) used to classify event	—	—	—
2.	Call EP Communicator to the Main Control Room <u>CUE</u> : Wait 5 minutes, then report as the EP Communicator	EP Communicator called to the Main Control Room			
3.	If EAL Threshold Values have been met or exceeded, then	Determine General Emergency initiating conditions have been exceeded FG1 : <ul style="list-style-type: none"> • FCB Loss: 1.c.1 OR 1.d.1 • RCB: Loss 2.d.1. AND 2.d.2.a OR 2.d.1 AND 2.d.2.b • PCB Loss 3.d.1a AND 3.d.1.b, or 3.d.3 	—	—	—
* 4.	Declare the event (12 minute clock to get form to EP Communicator starts)	Declares a General Emergency <u>within 15 minutes</u> of JPM Start Declaration Time: _____	—	—	—
5.	Activate the ERO	Direct EP communicator to Activate the ERO			
6.	Complete EP-MA-114-100-F-01, State/Local Event Notification Form as follows:	N/A			
6a.	Utility Message No.	1 (or equivalent)	—	—	—
6b.	Emergency Director Approval	Signature entered	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*6c.	Block 1 Call Status (NOTE: Step is <u>not</u> critical if Block 8 (Step 5.s) is completed SAT)	"This is a Drill" checked	___	___	___
* 6d.	Block 2 Station	"Limerick" checked	___	___	___
* 6e.	Block 3.a Emergency Classification	"General Emergency" checked	___	___	___
* 6f.	Block 3.b Affected Units	"ONE" checked	___	___	___
* 6g.	Block 3.c Declared At (Time)	Correct time of declaration entered (24 hour clock)	___	___	___
* 6h.	Block 3.c Declared At (Date)	Correct date entered	___	___	___
6i.	Block 3.d This Represents A/An	"Initial Declaration" checked	___	___	___
* 6j.	Block 4. Emergency Action Level (NOTE: Step is <u>not</u> critical if Block 4 (Step 5.l) is completed SAT)	"FG1" Entered	___	___	___
6k.	Block 4 Emergency Action Level (NOTE: this step is N/A if sticker for correct action is used)	Alphanumerically "Foxtrot Golf One", written in the area next to FG1	___	___	___
*6l.	Block 4 Brief Non-Technical Description (NOTE: Step is <u>not</u> critical if Block 4 (Step 5.j) is completed SAT)	Sticker FG1 placed in block <u>or</u> the following (or equivalent) entered: "Loss of 2 of 3 fission product barriers with actual or potential loss of the third barrier. Protective actions will be recommended for the public"	___	___	___
* 6m.	Block 5 Non-Routine Radiological Release Status	"AIRBORNE radiological release in-progress" checked	___	___	___
* 6n.	Block 6 Meteorology NOTE: Tower 1: 175'	Wind direction "311.0" deg az entered	___	___	___
* 6o.	Block 6 Meteorology NOTE: Tower 1: 175'	Wind speed "5.0" mph entered	___	___	___

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
* 6p.	Block 7 Utility Protective Action Recommendation	"b. The PROTECTIVE ACTION RECOMMENDATION (PAR) from the utility is:" checked	___	___	___
* 6q.	Block 7 Utility Protective Action Recommendation SHELTER	N/A			
* 6r.	Block 7 Utility Protective Action Recommendation EVACUATE	"EVACUATE" checked Evacuate 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO " <u>5</u> " MILES entered Evacuate THE FOLLOWING SECTORS FROM " <u>5</u> " MILES TO " <u>10</u> " MILES entered SECTORS ESE, SE, and SSE checked			
* 6s.	Block 8 Conclusion (NOTE: Step is <u>not</u> critical if Block 1 (Step 5.c) is completed SAT)	"This is a Drill" checked	___	___	___
* 7.	Initiates State and Local Notifications <u>CUE</u> : Continue acting as Shift Communicator, and repeat back directions provided by student, as required	Shift Communicator directed to initiate required State and local notifications within 12 minutes of event classification Time State/Local Notification Form To EP Communicator: _____	___	___	___
8.	Place-keep in EP-AA-112-100-F-01, Shift Emergency Director Checklist to perform required actions	N/A			
9.	Announce event classification to Control Room staff	Control Room staff notified of event classification	___	___	___
You have met the termination criteria for this JPM					

JPM Stop Time: _____

917 METEOROLOGICAL 15 MINUTE AVERAGE POINT DATA

	PID	SENSOR	DESCRIPTION	VALUE	EU
T O W E R 1	T1DTULFA	T1.SP.U	TOWER 1 270 FT WIND SPEED	14.2	MPH
	T1SPIFA	T1.SP.I	TOWER 1 175 FT WIND SPEED	5.0	MPH
	T12SPLFA	T1.SP.L	TOWER 1 30 FT WIND SPEED	16.9	MPH
	T1DRUFA	T1.DR.U	TOWER 1 270 FT WIND DIRECTION	160.1	DEG AZ
	T1DRIFA	T1.DR.I	TOWER 1 175 FT WIND DIRECTION	311.0	DEG AZ
	T1DRLFA	T1.DR.L	TOWER 1 30 FT WIND DIRECTION	174.9	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	0.7	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
T O W E R 2	T2DTULFA	T2.SP.U	TOWER 2 304 FT WIND SPEED	13.4	MPH
	T2SPIFA	T2.SP.I	TOWER 2 159 FT WIND SPEED	15.2	MPH
	T22SPLFA	T2.SP.L	TOWER 2 30 FT WIND SPEED	14.1	MPH
	T2DRUFA	T2.DR.U	TOWER 2 304 FT WIND DIRECTION	132.7	DEG AZ
	T2DRIFA	T2.DR.I	TOWER 2 159 FT WIND DIRECTION	141.7	DEG AZ
	T2DRLFA	T2.DR.L	TOWER 2 30 FT WIND DIRECTION	143.6	DEG AZ
	T2DTULFA	T2.DT.U-L	TOWER 2 304 - 26 FT DELTA TEMP	-0.2	DEG F
	T2DTILFA	T2.DT.I-L	TOWER 2 155 - 26 FT DELTA TEMP	0.4	DEG F
	T2ATLFA	T2.AT.L	TOWER 2 26 FT AMBIENT TEMP	85.0	DEG F
	T2DPLFA	T2.DP.L	TOWER 2 26 FT DEW POINT	44.81	DEG F

DATE: TODAY TIME: NOW

INITIAL CONDITIONS:

Unit 1 conditions are as follows:

T = 0

- o 'A' Steam Line has ruptured in the Outboard MSIV Room.
- o Group 1 Isolation signal is received due to high Steam Line Flow
- o "A" Steam Line Inboard And Outboard MSIVs have failed to isolate automatically or manually.

T = 5 minutes

- o All control rods are fully inserted
- o Reactor Coolant Activity starts to increase

T = 15 minutes

- o RPV pressure is 850# and lowering
- o RPV level is 18" and steady
- o DW pressure is 0.3 psig
- o DW Rad Monitor is reading 1.10E+03 (1100R/hr)
- o Reactor Coolant Activity is 370uCi/gm
- o Outboard MSIV Room temperature is 210 degrees F
- o Security and HP personnel have confirmed a steam release outside secondary containment from blowout panels

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 required to make the highest classification based on the given plant conditions and make subsequent call outs. All communications should indicate a drill.

Facility: LGS	Date of Examination: 10/04/10	
Exam Level: RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	Operating Test No.: <u>ILT09-1</u>	
Control Room Systems [®] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. CRD Hydraulic System / Perform Reactor , Startup, Alternate Path (2008 JPM A)	A, D, L, S, P	1
b. Manually place a RFP in Service, Alternate Path	N, A, S	2
c. Transfer HPCI From Pressure Control Mode to Level Control Mode, Alternate Path	A, N, S	4
d. Primary Containment N2 Makeup (0523) <i>Replace</i>	D, S	5
e. Transfer D13 from 101 to 201 (0519)	A, D, S	6
f. Control Rod Exercise Test (0107)	D, S	7
g. Comp Cooling Water / Align RECW for DW Cooling (2008 JPM G)	A, D, EN, S, P	8
h. Manually Isolate the RE Enclosure (0022)	D, S	9
In-Plant Systems [®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Bypassing and Removing the *A RPS and UPS Static Inverter from Service (0203)	D, R	6
j. Alignment of Equipment or Operation for Shutdown Cooling (Fire Safe Shutdown) (0267)	E, N, L, R,	4
k. RO, SRO-I, SRO-U, Scram and MSIV closure from the AER (0261)	A, D, E, L, R	7
® All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(EN)gineered safety feature	- / - / ≥ 1 (control room system)	
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

Facility: LGS		Date of Examination: 10/04/10
Exam Level: RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>		Operating Test No.: <u>ILT09-1</u>
Control Room Systems [@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. CRD Hydraulic System / Perform Reactor , Startup, Alternate Path (2008 JPM A)	A, D, L, S, P	1
b. Manually place a RFP in Service, Alternate Path	N, A, S	2
c. Transfer HPCI From Pressure Control Mode to Level Control Mode, Alternate Path	A, N, S	4
d. Primary Containment N2 Makeup (0523)	D, S	5
e. Transfer D13 from 101 to 201 (0519)	A, D, S	6
f.		
g. Comp Cooling Water / Align RECW for DW Cooling (2008 JPM G)	A, D, EN, S, P	8
h. Manually Isolate the RE Enclosure (0022)	D, S	9
In-Plant Systems [@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Bypassing and Removing the *A RPS and UPS Static Inverter from Service (0203)	D, R	6
j. Alignment of Equipment or Operation for Shutdown Cooling (Fire Safe Shutdown) (0267)	E, N, L, R,	4
k. RO, SRO-I, SRO-U, Scram and MSIV closure from the AER (0261)	A, D, E, L, R	7
<p>[@] All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(EN)gineered safety feature	- / - / ≥ 1 (control room system)	
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

Facility: <u>LGS</u>		Date of Examination: <u>10/04/10</u>
Exam Level: RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>		Operating Test No.: <u>ILT09-1</u>
Control Room Systems [®] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. CRD Hydraulic System / Perform Reactor , Startup, Alternate Path (2008 JPM A)	A, D, L, S, P	1
b. Manually place a RFP in Service, Alternate Path	N, A, S	2
c.		
d.		
e.		
f.		
g. Comp Cooling Water / Align RECW for DW Cooling (2008 JPM G)	A, D , EN, S, P	8
h.		
In-Plant Systems [®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Bypassing and Removing the *A RPS and UPS Static Inverter from Service (0203)	D, R	6
j. Alignment of Equipment or Operation for Shutdown Cooling (Fire Safe Shutdown) (0267)	E, N, L, R,	4
k.		
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(EN)gineered safety feature	- / - / ≥ 1 (control room system)	
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

Exelon Nuclear

Job Performance Measure

PERFORM REACTOR STARTUP (ALTERNATE PATH)

JPM Number: LLOJPM0755

Revision Number: 000

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
 Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
 Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. N/A Revision 000 , based on C JPM A -2008 Limerick operating Test

SIMULATOR SETUP INSTRUCTIONS

Interventions Summary - C:\Documents and Settings\training\Desktop\ILT 2010 SECURE\ILT 2010\JPM5\SIM\CRD SU BOTH RO-SRO\scenario JPM A.scm

Hide Malfunctions - 3 Hide Remotes - 1 Hide Overrides - 2 Hide Annunciators - 1

Malfunction Summary

MalFID	MultID	Description	Current Value	Target Value	Rmptime	Actime	Dactime	Trig
MRD016C	22-35	Control Rod Failure, Accumulator Trouble		True	00:00:00	00:03:00	00:00:00	2
MRD016C	46-19	Control Rod Failure, Accumulator Trouble		True	00:00:00	00:04:00	00:00:00	2
MCR412A		Control Rod Drive Hydraulic Pump A Trips		True	00:00:00	00:04:00	00:00:00	2

Timer Pause **Delete All** **Active** Pending

Remotes Summary

RemfID	MultID	Description	Current Value	Target Value	Rmptime	Actime	Trig
RCR018		CRD Pump A Discharge Valve 1F014A		CLOSE	00:00:00	00:01:00	1

Timer Pause **Clear List** **Active** Pending

Override Summary

TagID	Description	Position / Target	Actual Value	Override Value	Rmptime	Actime	Dactime	Trig
HS46-108B	CRD Pump 18 Ind Lamps	GREEN		OFF		00:00:00	00:00:00	0
HS46-108B	CRD Pump 18 Ind Lamps	RED		OFF		00:00:00	00:00:00	0

Timer Pause **Delete All** **Active** Pending

Annunciator Summary

Window	Description	Tagname	Override Type	OVal	AVal	Actime	Dactime	Trig
G4	CRD Drive Water Filter Hi DP	108 REACTOR G4	ON			00:01:05	00:00:00	1

Timer Pause **Delete All** **Active** Pending

Event Trigger Builder / Viewer

Favorites Triggers

Trigger #	Trigger Text
1	ZLCSWDR
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	

Operators:

Arithmetic:

- * Multiplication
- / Division
- + Addition
- Subtraction

Relational:

- > Greater than
- >= Greater Than or equal
- < Less than
- <= Less than or equal
- = Equal to
- != Not equal to

Logical:

- && And
- || Or
- ! Not

Other:

- (Open Paren
-) Close Paren

Trigger Now **Clear** **Clear All** **Accept** **Exit**

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

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC 6, or a startup IC with RPV pressure of approximately 150 psig with 1A CRD Pump in operation.
2. Load above malfunctions and triggers
3. Select Rod 38-35
4. Provide Rod move Sheet with steps marked off

INITIAL CONDITIONS:

- Unit 1 is at 3% power and RPV pressure is 151 psig
- 1B CRD Pump is out of service for bearing replacment
- RPV level is 35 inches, being controlled by LIC-120 in automatic
- A plant startup is in progress per GP-2, Appendix 1, Reactor Startup and Heatup
- Control rods are being withdrawn per Control Rod Move Sheet Sequence ID: LGSimSU-1.0 on Step 13
- The next rod move step is to withdraw Control Rod 22-27 using Single notch move from position 12-30 as directed on Control Rod Move Sheet.

TASK STANDARD:

Address the loss of CRD flow per ON-107 and respond to the subsequent resulting failure of two scram accumulators by tripping the reactor.

INITIATING CUES:

You are the Reactor Operator. You have been directed to continue with the startup by withdrawing control rods in accordance with the control rod move 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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: PERFORM REACTOR STARTUP (ALTERNATE PATH)

JPM Number: LLOJPM0755 **Revision Number:** 000

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 201001 A2.04 (3.8, 3.9)

Suggested Testing Environment: Simulator

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

Reference(s):

Procedure: ON-107, CRD Problems Rev: 15
Procedure: S46.6.C, Placing Alt CR Water Filter In Service Rev: 08

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:** _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>NOTE Trigger 1 is activated when withdraw pushbutton is depressed, this activates:</p> <ul style="list-style-type: none"> • CRD Pump discharge valve closes to simulate drive water filter clog • ANN-MCR-108-G4, CRD Drive Water Filter Hi Delta P • ANN-MCR-108-H4, CRD Charging Water LO Press 				
<p>* 1. NOTCH withdraw control rods per CR Move Sheet Seq 1D: LGS Sim U-1.0.</p>	<p>Notch withdraw CR 22-27, from 12 to 48.</p>			
<p>Alternate Path Starts Now:</p>				
<p>2 Observes indications of high d/p, clogged drive water filter.</p> <p>Cue: <u>If necessary</u>, direct applicant to respond to alarm.</p>	<p>Informs supervisor of high filter d/p and alarm.</p>			
<p>3. Reference ARCs:</p> <ul style="list-style-type: none"> • MCR-108-H4, CRD Charging Water LO Press • MCR-108-G4, CRD Drive Water Filter Hi Delta P <p>Cue: <u>When informed of ARC direction</u>, hand copy of ON-107 to applicant and State the following:</p> <ul style="list-style-type: none"> • The CRS directs you to perform the actions of ON-107. 	<p>Inform supervisor of ON-107 entry</p>			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>* 4. PER ON-107: IF CRD Pump is running but CRD drive flow is insufficient, THEN PERFORM one of the following as applicable:</p> <ul style="list-style-type: none"> • PLACE alternate CRD Drive Water Filter, in service per S46.6.C. • PLACE alternate CRD Flow Control Valve, in service per S46.6.B <p>Cue: After 1 minute:</p> <p>Toggle remote function RCR018 (A CRD pump discharge valve) to OPEN (to simulate valving in the alternate drive water filter)</p> <p>Delete ANN 108 Reactor G4 (CRD Drive Water Filter Hi dP)</p> <p>As EO, Report :</p> <ul style="list-style-type: none"> • The Alternate Drive Water Filter is in Service. I will write an ETT to replace the filter. <p>After 1 minute:</p> <p>Toggle remote function RCR018 (A CRD pump discharge valve) to CLOSE (to simulate clogging in the alternate drive water filter)</p> <p>Toggle ANN 108 Reactor G4 (CRD Drive Water Filter Hi dP) to ON 5 seconds after Valve closure</p> <p>Activate Trigger 2 (Accumulator trouble alarms) and pump trip</p>	<p>Direct EO to place alternate drive water filter in service per S46.6.C</p>			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>5. Observes indications of high d/p, clogged drive water filter.</p> <p>Cue: if asked to investigate drive water filter Report:</p> <ul style="list-style-type: none"> • FIN team is aware of filter problem and is expediting paperwork to replace the filter with hi d/p. 	<p>Informs supervisor of high filter d/p and alarm.</p>			
<p>6. Accumulator Trouble Rod 22-35,</p> <p>AND</p> <p>ARC-MCR-108-F1, CRD Accumulator Trouble.</p>	<p>Inform supervisor.</p> <p>Refer to ARC-MCR-108-F1, CRD Accumulator Trouble.</p>			
<p>6.a Follow Tech. Spec 3.1.3.5, pertaining to control rod scram accumulators.</p> <p>Cue: CRS will review Tech. Specs.</p>	<p>Inform Supervisor of Tech Spec</p>			
<p>6.b Dispatch Operator to inspect HCU.</p> <p>Cue: After 1 minute, Report:</p> <ul style="list-style-type: none"> • Cause of accumulator trouble is low pressure, pressure is 940 psig. 	<p>Dispatches EO to HCU</p>			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>7. PER ON-107: IF one CRD scram accumulator is inoperable, THEN PERFORM the following within 8 hours:</p> <ul style="list-style-type: none"> • RESTORE the inoperable accumulator to operable OR DECLARE associated control rod inoperable. • IF above step is not completed, THEN TAKE action to be in at least HOT SHUTDOWN within the next 12 hours. 	<p>Inform CRS of required actions for single inoperable accumulator.</p>			
<p>8. Accumulator Trouble Rod 46-19, AND ARC-MCR-108-F1, CRD Accumulator Trouble. AND Trip of 1A CRD pump Cue: After 1 minute, Report:</p> <ul style="list-style-type: none"> • Cause of accumulator trouble is low pressure, pressure is 940 psig. <p>After 4 minutes, Report:</p> <ul style="list-style-type: none"> • 1A CRD Pump tripped on overcurrent. I'm continuing to investigate. 	<p>Inform supervisor. Refer to ARCs:</p> <ul style="list-style-type: none"> • 108-F1, CRD Accumulator Trouble • 108 REACTOR G-2 1A/1B CRD Water Pump Motor Overcurrent <p>Dispatches EO to HCU and 1A CRD pump</p>			
<p>9. PER ON-107: IF more than one CRD scram accumulator is inoperable, THEN PERFORM the following:</p>				
<p>9.a DECLARE the associated control rods inoperable.</p>	<p>Inform CRS Control Rod 46-19 is inoperable</p>			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>9.b <u>IF</u> the control rod associated with any inoperable CRD scram accumulator is withdrawn, <u>THEN</u> immediately VERIFY at least one CRD pump is operating:</p> <ul style="list-style-type: none"> • INSERT a withdrawn control rod one notch. <p>OR</p> <ul style="list-style-type: none"> • IF loss of RMCS prevents control rod motion, THEN CHECK charging water header pressure \geq 1400 psig on PSH-46*N600, "CHARGING WATER PRESSURE" (PX) at *0C603 <p>Cue: IF RO wants to attempt to insert Control rod and asks for guidance on which rod to insert:</p> <ul style="list-style-type: none"> • RE Directs inserting selected Rod. 	<p>Attempts to insert a withdrawn control rod one notch.</p>			
<p>Note:</p> <p>The selected rod will NOT insert. This action is used per procedure to define whether or not a CRD pump is operating. Attempt to move control rod will be unsuccessful indicating NO CRD pumps are operating for the purpose of the subsequent IF/THEN step in ON-107.</p>				
<p>9.c IF no CRD pump is operating AND reactor pressure is greater than or equal to 900 psig, START at least one CRD pump within 20 minutes</p>	<p>N/A</p>			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>* 9.d <u>IF no</u> CRD pump is operating <u>AND</u> reactor pressure is less than 900 psig, <u>Then PERFORM</u> the following:</p> <ul style="list-style-type: none"> Manually SCRAM the reactor <u>AND PLACE</u> Reactor Mode Switch in "SHUTDOWN," <u>AND ENTER</u> T-100 <u>OR</u> T-101, as applicable. 	<p>Scram Collars armed Scram Pushbuttons depressed Reactor Mode Switch placed in "SHUTDOWN,"</p>			

CUE: You have met the termination criteria for the JPM. You may stop here

JPM Stop Time: _____

Initial Conditions:

- Unit 1 is at 3% power and RPV pressure is 151 psig
- 1B CRD Pump is out of service for bearing replacement
- RPV level is 35 inches, being controlled by LIC-120 in automatic
- A plant startup is in progress per GP-2, Appendix 1, Reactor Startup and Heatup
- Control rods are being withdrawn per Control Rod Move Sheet Sequence ID: LGSimSU-1.0 on Step 13
- The next rod move step is to withdraw Control Rod 22-27 using Single notch move from position 12-30 as directed on Control Rod Move Sheet.

Initiating Cue:

You are the Reactor Operator. You have been directed to continue with the startup by withdrawing control rods in accordance with the control rod move sheet.

Exelon Nuclear

Job Performance Measure

MANUALLY PLACE 3RD RFP IN SERVICE (ALTERNATE PATH)

JPM Number: LLOJPM0754

Revision Number: 000

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
 Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
 Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. N/A Revision 000

SIMULATOR SETUP INSTRUCTIONS

Interventions Summary - E:\ILT 2010\JPMS\SIM\MANUALLY PLACE RFP SU BOTH RO-SRD\scenario JPM B.scn

Hide Malfunctions - 1 Show Remotes - 0 Show Overrides - 0 Hide Annunciators - 2

Malfunction Summary

Mal ID	Mult ID	Description	Current Value	Target Value	Rmptime	Actime	Dactime	Trig
MFV246C		Reactor Feedpump C High Vibration		True	00:00:00	00:00:00	00:00:00	1

Timer Pause

Annunciator Summary

Window	Description	Tagname	Override Type	OVal	AVal	Actime	Dactime	Trig
I3	Vibration Alarm Danger	107 REACTOR I3	ON			00:00:00	00:00:00	3
I2	Vibration Alarm Alert	107 REACTOR I2	ON			00:00:00	00:00:00	2

Timer Pause

Event Trigger Builder / Viewer

Favorites Triggers

Trigger #	Trigger Text
1	FwNTRPM(3) >=3500
2	ZLOB1(2194)
3	ZLOB1(2203)
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	

Operators:

Arithmetic:

- * Multiplication
- / Division
- + Addition
- Subtraction

Relational:

- > Greater than
- >= Greater Than or equal
- < Less than
- <= Less than or equal
- == Equal to
- != Not equal to

Logical:

- && And
- || Or
- ! Not

Other:

- (Open Paren
-) Close Paren

SIMULATOR SETUP INSTRUCTIONS

1. Reset to IC that supports removal of 1 RFPT, Rx Power \approx 60%.

INITIAL CONDITIONS:

1. Unit 1 is at ___% Power
2. "1C" RFPT is in Standby in accordance with S06.1.A U/1
3. "1C" RFPT has been in Standby at 2300 RPM for 60 minutes
4. Minimum Recirculation Flow established in Auto Mode per S06.0.A U/1
5. Lube Oil Cooler Outlet temperature is 113°F
6. An RO is stationed at the Reactor Recirc Pump Controls at 10C602
7. All S06.1.C U/1 Prerequisites are complete for placing the 1C Reactor Feed Pump in service.
8. FWLCS is operational
9. FWLCS sequence was initiated, and initiation failed.

TASK STANDARD:

"1C" RFP in Standby due to high vibration condition.

INITIATING CUES:

You are directed by Shift Supervision to MANUALLY place the "1C" Reactor Feed Pump in service from Standby per S06.1.C U/1. Procedure is complete up to and including step ____, continue at step ____.

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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: MANUALLY PLACE 3RD RFP IN SERVICE (ALTERNATE PATH)

JPM Number: LLOJPM0754 Revision Number: 000

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 295001 A4.02 3.9/3.7

Suggested Testing Environment: Simulator

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

Reference(s): Procedure S06.1.C U/1 Rev: 14
Procedure S06.2.C U/1 Rev: 10
Procedure S06.0.E U/1 Rev: 10

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: _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. ENSURE the following: Oncoming Feed Pump has been adequately warmed.	The Initial conditions are referenced to verify that the "1C" RFP has been adequately warmed			
1.a HV-006-108C, "1C" RFP Disch Vlv is closed for the oncoming RFP	HV-006-108C is verified closed.			
1.b HIC-006-106C, "C" RFP Min Flow Control in AUTO for the oncoming RFP	HIC-006-106C is verified in AUTO			
2. <u>IF</u> 1A RFP is being placed <u>IN SERVICE</u> , <u>THEN ENSURE</u> HV-006-138A, "1A RFP BPV, is closed.	N/A			
3. <u>IF</u> third RFP is being placed <u>IN SERVICE</u> <u>THEN PERFORM</u> the following:				
3.a <u>REFER TO</u> current P-1 edit <u>AND VERIFY</u> FLLLP is <0.92	FLLLP is verified to be <0.92			
* 3.b <u>ACCESS</u> screen FWLC_01, Process Overview, at FWLCS Operator Station	Screen FWLC_01 is accessed			
* 3.c <u>SELECT</u> blue bordered box next to "Reset" in FLLLP <0.92 Dialog Box <u>until</u> it is outlined in white <u>AND</u> then release.	FLLLP <0.92 Box is outlined in white			
* 3.d <u>SELECT</u> "Activate" (D4) Dialog Key	"Activate" (D4) Dialog Key is selected			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
3.e AND VERIFY box next to "Reset" in FLLLP <0.92 Dialog Box turns solid blue with a white circle in the center.	FLLLP <0.92 Dialog Box is solid blue with a white circle in the center.			
4. PLACE FIC-M1-1R601C, "C RFPT Speed Controller" (FEED PUMP A(B, C), in "AUTO" for oncoming RFP	FIC-M1-1R601C "C" RFPT Speed Controller" (FEED PUMP C) in "AUTO			
5. IF PMS Computer Point K000NSS (K001NSS, K002NSS) has been substituted, THEN RESTORE per RT-6-038-800-1. QUE: Another operator will perform RT-6-038-800-1	N/A			
* 6. OPEN HV-006-108A(B,C), "1A(B,C) RFP Disch Vlv" (FEED, DISCH A(B,C)), for oncoming RFP at panel 10C651	HV-006-108C, "1C" RFP Disch Vlv Opened			
6.a AND VERIFY FWLCS maintains RPV level	RPV level monitored			
7. VERIFY the following automatic actions:	N/A			
7.a Oncoming RFPT speed rises <u>until</u> oncoming RFP discharge pressure is nominal 10 psig below RPV pressure	Oncoming RFPT speed rises, RFP discharge pressure is nominal 10 psig below RPV pressure			
7.b WHEN oncoming RFP discharge pressure nominal 10 psig below RPV pressure, THEN oncoming RFPT speed slowly rises until oncoming RFP begins feeding RPV	Oncoming RFP begins feeding RPV			
8. VERIFY oncoming AND running RFP(s) are maintaining RPV level	Oncoming AND running RFP(s) are maintaining RPV level			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Alternate Path Starts Now:				
<p>9. Respond to Annunciators:</p> <ul style="list-style-type: none"> • 107 REACTOR I-2, Vibration Alarm Alert • 107 REACTOR I-3, Vibration Alarm Danger • 102 FEED C-2, 1C RFPT HI Vibration 	<p>NOTE: 107 ANNs for Vibration Alarm and Danger will only come in once and remain in alarm (trigger 2 and 3 keep alarms on once they are received)</p>			
<p>9a. Monitor RFPT vibration levels on Vibration Monitoring System (VMS) AND DAS terminals.</p>	<p>Monitor Vibration levels on VMS</p>			
<p>9b. IF RFPT vibration on BOTH VMS probes (X&Y) on a bearing are >5 mils, THEN raise/lower RFPT speed to clear HI VIBRATION alarm by performing one of the following:</p> <ul style="list-style-type: none"> • Raising/lowering RFPT speed using FIC-MI-1R601C, RFPT Speed Controller in MANUAL <p>OR</p> <ul style="list-style-type: none"> • HS-006-149C, "1C RFPT Speed Cont. SW" (MSC) per S06.0.E U/1. 	<p>Candidate lowers speed by:</p> <p>Manual (MAN) pushbutton on FIC-M1-1R601C, RFPT Speed Controller in MANUAL</p> <p>OR</p> <p>HS-006-149C, 1C RFPT Speed Cont. SW</p>			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>9c. IF RFPT vibration on BOTH VMS probes (X&Y) on a bearing are >8 mils, THEN lower Rx power per GP-3 OR GP-5 Appendix 2, as applicable, to within the capability of the remaining RFP(s) AND remove 1C RFPT from service per S06.2.C U/1.</p> <p>Que: If asked if reactor power needs to need to be lowered, respond as CRS "Rx power is within the capability of the remaining RFPs"</p>	Identify when vibration on BOTH VMS probes bearing are >8 mils, transition to take RFP out of service.			
<p>10. Remove 1C RFPT from service per S06.2.C U/1</p>				
<p>Evaluator note: Candidate may elect to use either of the following to remove the RFP from service:</p> <ul style="list-style-type: none"> • FWLCS Semi-Automatic Sequence • Manually Removing RFP From Service <p>If candidate elects to perform FWLCS <u>Semi-Automatic Sequence</u> provide the follow Que:</p> <ul style="list-style-type: none"> • The FWLCS Semi-Automatic for Removing 1C RFP from service to Standby initiation has failed • FWLCS is operational • Supervision directs you to use the manual method of removing a RFP from IN SERVICE to IN STANDBY 				
<p>11. ENSURE HIC-006-106C, "C RFP Min Flow Control"(FLOW), for offgoing RFP in "AUTO" <u>OR</u> minimum flow requirements for offgoing RFP are being met in accordance with S06.0.A U/1, Manual Adjustment Of Reactor Feed</p>	HIC-006-106C in auto			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Pump Minimum Recirculation Flow.				
11.a For RFPs remaining IN SERVICE, VERIFY FIC-M1-1R601A(B,C), "A(B,C) RFPT Speed controller" (FEED PUMP, A(B,C), S), in "AUTO" AND sufficient maneuvering room available.	FIC-M1-1R601C, in AUTO Sufficient maneuvering room available.			
11.b PLACE FIC-M1-1R601C, "C RFPT Speed Controller" in "Manual" (MAN).	FIC-M1-1R601C in Manual			
11.c PERFORM the following:	N/A			
11.c.1 IF while executing Step, the discharge check valve for the offgoing RFP cycles open/closed, THEN continuously REDUCE the speed of the offgoing RFPT using FIC-M1-1R601C until the discharge check valve for the offgoing RFP remains closed AND NOTIFY SSV.	N/A			
* 11.c.2 Slowly LOWER the speed of the offgoing RFPT to IN STANDBY using FIC-M1-1R601C, "C RFPT Speed Controller"	FIC-M1-1R601C used to slowly lower speed to approximately 2300 rpm			
11.d VERIFY HV-006-105C, "1C RFP Disch Chk Vlv" is closed at panel 10C651.	HV-006-105C closed			
CUE: You have met the termination criteria for the JPM. You may stop here				

JPM Stop Time: _____

INITIAL CONDITIONS:

- Unit 1 is at ___% Power
- “1C” RFPT is in Standby in accordance with S06.1.A U/1
- “1C” RFPT has been in Standby at 2300 RPM for 60 minutes
- Minimum Recirculation Flow established in Auto Mode per S06.0.A U/1
- Lube Oil Cooler Outlet temperature is 113°F
- An RO is stationed at the Reactor Recirc Pump Controls at 10C602
- All S06.1.C U/1 Prerequisites are complete for placing the 1C Reactor Feed Pump in service.
- FWLCS is operational
- FWLCS sequence was initiated, and initiation failed.

INITIATING CUES:

You are directed by Shift Supervision to MANUALLY place the “1C” Reactor Feed Pump in service from Standby per S06.1.C U/1. Procedure is complete up to and including step _____, continue at step _____.

Exelon Nuclear

Job Performance Measure

Transfer HPCI From Pressure Control Mode to Level Control Mode, Alternate Path

JPM Number: LLOJPM0756

Revision Number: 000

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
 Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
 Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. N/A

SIMULATOR SETUP INSTRUCTIONS

1. Reset simulator to IC 17
2. Scram the reactor and close the MSIVs
3. Start HPCI and RCIC
4. Trip condensate pumps by closing Condensate Pump Discharge Valves
5. Establish HPCI in Pressure Control
6. Establish level approximately 20" with RCIC (no initiation signal for HPCI)
7. Load the following:

Interventions Summary - E:\ILT 2010\JPMS\SIM\HPCI pressure control alt path\HPCI PRESSURE CONTROL.scn

Hide Malfunctions - 5 Show Remotes - 0 Hide Overrides - 2 Hide Annunciators - 2

Malfunction Summary

Mal ID	MUX ID	Description	Current Value	Target Value	Rmtime	Actime	Daclime	Trig
MRC458		RCIC Turbine Trip		True	00:00:00	00:00:00	00:00:00	0
MNS156A		NSSSS Group 1 Inadvertent Isolation		True	00:00:00	00:00:00	00:00:00	0
MNS156B		NSSSS Group 1 Inadvertent Isolation		True	00:00:00	00:00:00	00:00:00	0
MNS156C		NSSSS Group 1 Inadvertent Isolation		True	00:00:00	00:00:00	00:00:00	0
MNS156D		NSSSS Group 1 Inadvertent Isolation		True	00:00:00	00:00:00	00:00:00	0

Timer Pause **Delete All** **Active** Pending

Override Summary

Tag ID	Description	Position / Target	Actual Value	Override Value	Rmtime	Actime	Daclime	Trig
LR08-102-C	Condensate Storage Tank Level Recorder Pen			2.100000	00:00:00	00:00:00	00:00:00	2
LI55-112-1	Condensate Storage Tank Level Meter Indication			2.000000	00:00:00	00:00:00	00:00:00	2

Timer Pause **Delete All** **Active** Pending

Annunciator Summary

Window	Description	Tagname	Override Type	OVal	AVal	Actime	Daclime	Trig
A3	Condensate Storage Tank Lo Level Suction Transfer	117 HPCI A3	ON			00:00:00	00:00:00	2
A1	Condensate Storage Tank Hi / Lo Level	104 COND A1	ON			00:00:00	00:00:00	0

Timer Pause **Delete All** **Active** Pending

TRIGGERS:

NONE

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

INITIAL CONDITIONS:

1. Reactor Scram has occurred on an inadvertent closure of all MSIVs
2. No Condensate pumps are available
3. HPCI and RCIC started on low reactor level
4. HPCI is in pressure control
5. RCIC was controlling level but recently it tripped. The trip cannot be reset.
6. Another Operator is controlling Reactor pressure with SRVs

TASK STANDARD:

Place HPCI in Injection Mode, and respond to failure of suction valves to swap to suppression pool, by opening valves.

INITIATING CUE:

Shift Supervision directs you to transfer HPCI from pressure control mode to injection mode using S55.7. A, "Transfer of HPCI from Pressure Control Mode to Injection Mode and Back", to restore and maintain reactor level between 12.5" and 54"

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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: Transfer HPCI From Pressure Control Mode to Level Control Mode, Alternate Path
JPM Number: LLOJPM0756 Revision Number: 000

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 206000 A4.04 3.7/3.7

Suggested Testing Environment: Simulator

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

Reference(s):

Procedure: S55.7.A, Transfer of HPCI From Pressure Control Mode to Injection Mode and Back Rev 08

Procedure: ARC-117-A3, Condensate Storage Tank LO Level/ Suction Transfer 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? No Yes

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: _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>Evaluators note, the following is from:</p> <p>S55.7.A Transfer of HPCI From Pressure Control Mode to Injection Mode and Back, Transfer From Pressure Control Mode to Injection Mode Section.</p> <p>Driver Note: Maintain Reactor pressure between 900 and 1050 by manually opening an SRV</p>				
1. PLACE FIC-55-*R600, "HPCI Pump Discharge Flow Controller" (FL), in "MANUAL."	FIC-55-1R600 "HPCI Pump Discharge Flow Controller" placed in manual			
2. REDUCE HPCI Turbine speed to approximately 2250 rpm	Speed reduced to approximately 2250 RPM			
3. CAUTION: Prolonged operation at or near min flow may cause HPCI Pump degradation.	N/A			
*4. CLOSE HV-55-*F008, "HPCI Test Loop Shutoff" (TEST ISOL).	HV-55-1F008, "HPCI Test Loop Shutoff" closed			
*5. OPEN HV-55-*F105, "HPCI Pump Discharge PCIV" (TO MAIN FEED A), to inject through Feedwater System.	HV-55-1F105, "HPCI Pump Discharge PCIV" opened			
6. <u>IF</u> required to inject through Core Spray System, <u>THEN</u> throttle OPEN HV-55-*F006, "HPCI Pump Discharge Valve" (INJECTION). Cue: If Asked: Injection through the Core Spray System is not required	N/A			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
7. ADJUST FIC-55-*R600, "HPCI Pump Discharge Flow Controller" (FL), to achieve desired flow.	FIC-55-*R600, "HPCI Pump Discharge Flow Controller adjusted based on Reactor level			
8. <u>IF</u> desired <u>AND</u> setpoint is matched to actual flow, <u>THEN</u> PLACE FIC-55-*R600 in "AUTO."	FIC-55-1R600 setpoint is matched to actual flow, and placed in "AUTO."			
ALTERNATE PATH BEGINS HERE				
Activate Trigger 1 to Simulate Low CST Level				
9. Respond to ANN: HPCI 117, A3 CONDENSATE STORAGE TANK LO LEVEL/ SUCTION TRANSFER	N/A			
<p>9.a AUTOMATIC ACTIONS: HPCI pump suction transfers from CST to Suppression Pool:</p> <ul style="list-style-type: none"> • Valves HV-55-1F042 AND HV-55-1F041 open. • Valve HV-55-1F004 closes. <p>CUE:</p> <ul style="list-style-type: none"> • Outside EO Reports, a tornado significantly damaged the Unit 1 CST and retaining wall. • RO Reports CST Level is 2.1 feet down slow <p>IF NEEDED:</p> <ul style="list-style-type: none"> • CRS direct you to take appropriate action to ensure HPCI remain in operation for RP injection. 	Determine Automatic action did not occur and Report to CRS			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
* 9.b Take action to swap HPCI suction to Suppression Pool	Open HV-55-1F041 and verify: <ul style="list-style-type: none"> • HV-55-1F042 OPEN • HV-55-1F004 closes 			
CUE: You have met the termination criteria for the JPM.				

JPM Stop Time: _____

INITIAL CONDITIONS:

- Reactor Scram has occurred on an inadvertent closure of all MSIVs
- No Condensate pumps are available
- HPCI and RCIC started on low reactor level
- HPCI is in pressure control
- RCIC was controlling level but recently it tripped. The trip cannot be reset.
- Another Operator is controlling Reactor pressure with SRVs

INITIATING CUE:

Shift Supervision directs you to transfer HPCI from pressure control mode to injection mode using S55.7. A, "Transfer of HPCI from Pressure Control Mode to Injection Mode and Back", to restore and maintain reactor level between 12.5" and 54"

Exelon Nuclear

Job Performance Measure

PRIMARY CONTAINMENT N2 MAKEUP

JPM Number: LLOJPM0523

Revision Number: 001

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
 Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
 Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. Revision 001, Format change, no rev markers used

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC-17, and take out of freeze
2. Use Malfunction "MPC473, Drywell Air Leak" to reduce drywell pressure to below 0.2 psig. Then remove the malfunction.

INITIAL CONDITIONS:

1. Drywell pressure is ____ psig due to normal losses
2. All prerequisites for S57.3.B are completed
3. Makeup N2 is available and lined up for low flow service per S57.8.A

TASK STANDARD:

Establish makeup flow to drywell and monitor drywell pressure

INITIATING CUES:

You are directed by Shift Supervision to raise drywell pressure to between 0.2 and 0.7 psig per S57.3.B Section 4.4.

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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: PRIMARY CONTAINMENT N2 MAKEUP

JPM Number: LLOJPM0523 Revision Number: 001

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 223001 A4.10 3.2 / 3.2

Suggested Testing Environment: Simulator

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

Reference(s): Procedure S57.3.B Rev: 44

Actual Testing Environment: Simulator Control Room In-Plant Other

Testing Method: Simulate Perform

Estimated Time to Complete: 10 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: _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain a copy of S57.3.B.	S57.3.B Obtained			
<p>2. REFER TO S57.8.A, Placing or removing Liquid N₂ Vaporizing System In (From) Service and Changing Flow Modes, AND ENSURE Make-up N₂ available AND N₂ Supply lined up for low flow service.</p> <ul style="list-style-type: none"> IF A1722710 is not yet resolved, THEN OPEN X-25 to two turns open <p>Cue: IF A1722710 is not yet resolved, Report:</p> <ul style="list-style-type: none"> EO Reports X-25 has been opened 2 turns 	IF A1722710 is not yet resolved, Direct EO to OPEN X-25 to two turns open			
3. PLACE FIC-57-119, "Nitrogen Flow Controller" (FL), in "MANUAL" AND SET to zero.	FIC-57-119, "Nitrogen Flow Controller" (FL), in "MANUAL" AND SET to zero.			
4. ENSURE HSS-57-196, "H ₂ /O ₂ Analyzer 10S206," in "STANDBY."	10S205," in "STANDBY			
5. ENSURE HSS-57-126, "H ₂ /O ₂ Analyzer 10S205," in "STANDBY."	10S205," in "STANDBY			
* 6. PLACE HS-57-153 to "CLOSE."	HS-57-153 closed			
* 7. PLACE HS-57-187 to "CLOSE."	HS-57-187 closed			
INSTRUCTOR NOTE:				
Activate Remote Function RPC044, Manual Stop Valve 57-1088 to close 57-1088 after being requested in the next step				

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>8. CLOSE 57-1088, "N₂ Makeup & Atm Samp Return To Supp Pool Line Maint."</p> <p>CUE: Report as EO (as appropriate)</p> <ul style="list-style-type: none"> • "57-1088 is closed" <p>OR</p> <ul style="list-style-type: none"> • "S57.3.B Step _____ is complete" 	<p>EO directed to close 57-1088 or perform S57.3.B Step _____</p>			
<p>* 9. Slowly throttle OPEN HV-57-116, N₂ MAKE-UP for 5 seconds <u>AND PLACE</u> in "PULL TO STOP" position.</p>	<p>HV-57-116 throttled open and stopped after approximately 5 seconds</p>			
<p>10. VERIFY N₂ flow using XR-57-119, NITROGEN PURGE, (red pen).</p>	<p>XR-57-119 red pen indicates flow</p>			
<p>11. THROTTLE HV-57-116 for desired flow rate.</p>	<p>HV-57-116 throttled open with flow indicating on XR-57-119</p>			
<p>12. RECORD start time <u>AND</u> Drywell pressure in RO's Unified Log, using term "N₂" contained in entry for System Manager's search.</p> <p>Note: The Unified Log is not simulated.</p> <p>CUE: Unified Log entry has been made</p>	<p>NA</p>			

<p>13. MONITOR PI-57-121, (PX(NR)) <u>OR</u> PMS 057 DRYWELL PRESSURE <u>OR</u> PMS 075 DW/POOL PRESS VALIDATION PI-57-121 (narrow range).</p>	<p>Drywell pressure monitored on one or more of the following</p> <ul style="list-style-type: none"> • PI-57-121, (PX(NR)) <p><u>OR</u></p> <ul style="list-style-type: none"> • PMS 057 DRYWELL PRESSURE <p><u>OR</u></p> <p>PMS 075 DW/POOL PRESS VALIDATION PI-57-121 (narrow range).</p>			
<p>CUE: You have met the termination criteria for the JPM. You may stop here</p>				

JPM Stop Time: _____

INITIAL CONDITIONS:

- Drywell pressure is ____ psig due to normal losses
- All prerequisites for S57.3.B are completed
- Makeup N2 is available and lined up for low flow service per S57.8.A

INITIATING CUES:

You are directed by Shift Supervision to raise drywell pressure to between 0.2 and 0.7 psig per S57.3.B Section 4.4.

Exelon Nuclear

Job Performance Measure

Transfer D13 From 101 to 201 (Alternate Path)

JPM Number: LLOJPM0519

Revision Number: 003

Date: 11/02/2009

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. Revision 004, updated to correct typos and add additional simulator setup items

SIMULATOR SETUP INSTRUCTIONS

1. Place RED004, Safeguard Bus 201 Tap Changer Mode Switch, to MANUAL
2. Start and Load to 2000 kw D13 D/G per S92.1.O, Local And Remote Manual Startup of a Diesel Generator
3. Change Placards for 11-1010 and 11-2010 to green
4. Insert the following malfunctions and overrides:

The screenshot shows the 'Interventions Summary' window with the following data:

Remotes Summary							
Rem ID	Mult ID	Description	Current Value	Target Value	Rmptime	Actime	Trig
RSW396		ES'W Loop A Service Water Isolated?		YES	00:00:00	00:00:00	0

Buttons: Timer Pause, Clear List, Pending

Annunciator Summary								
Window	Description	Tagname	Override Type	DVal	AVal	Actime	Dactime	Trig
D1	D13 D-G Trouble	121 D13 D1	ON			00:00:30	00:00:00	1

Buttons: Timer Pause, Delete All, Active, Pending

5. Insert the following trigger

The screenshot shows the 'Event Trigger Builder / Viewer' window with the following data:

Trigger #	Trigger Text
1	ZEDB702R
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	

Operators menu:

- Arithmetic:
 - * Multiplication
 - / Division
 - + Addition
 - Subtraction
- Relational:
 - > Greater than
 - >= Greater Than or equal
 - < Less than
 - <= Less than or equal
 - == Equal to
 - != Not equal to
- Logical:
 - && And
 - || Or
 - ! Not
- Other:
 - (Open Paren
 -) Close Paren

Buttons: Trigger Now, Clear, Clear All, Accept, Exit

INITIAL CONDITIONS:

1. All prerequisites for 4 KV transfer are completed
2. TS 3.8.1.1 requirements are met for Unit 1 AND Unit 2
3. S92.1.N, Diesel Generator Set Up for Automatic Operations and S92.9.N Routine Inspection of the Diesel Generators have been completed for D13 Diesel Generator
4. D13 has been Started, Synchronized and Loaded to 2000 kW per S92.1.O, Local and remote manual Startup of a Diesel Generator
5. ESW is Aligned to Support Diesel Generator operation
6. An EO is standing by at the D13 Diesel Generator

TASK STANDARD:

4KV bus transferred from 101 Safeguard Bus Feed to the 201 Safeguard bus feed, and Diesel Generator secured due to Lube Oil High Temperature.

INITIATING CUE:

You are directed by Shift Supervision to transfer 4KV Safeguard Bus from 101 Safeguard Bus Feed to the 201 Safeguard bus feed using D13 Diesel Generator per S92.6.A.

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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: Transfer D13 From 101 to 201 (Alternate Path)

JPM Number: LLOJPM0519 Revision Number: 003

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 264000 A4.04 3.7/3.7

Suggested Testing Environment: Simulator

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

Reference(s):

Procedure S92.6.A, Transfer of a 4KV Safeguard Bus from 101 Safeguard Feed to 201 Safeguard Feed and Vice Versa Rev: 18

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: _____

JPM Start Time _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1. Obtain a copy of S92.6.A	Student obtains a copy of S92.6A			
2. VERIFY all prerequisites satisfied.	"all prerequisites satisfied" provided in Initial Conditions			
3. VERIFY procedure being performed on correct unit/train.	Verified on D13.			
4. MAINTAIN applicable Safeguard Transformer Feeder Ammeter as close to zero as possible without tripping Diesel Generator Output breaker by adjusting 165A(B,C,D)G501/CS, "Diesel Generator Speed Governor Control Switch" (SPEED GOVERNOR) AND 170A(B,C,D)6502 "Diesel Generator Voltage Regulator" (VOLTAGE REGULATOR).	Safeguard Transformer Feeder Ammeter Close to Zero, D/G Output breaker does not trip.			
*5. OPEN 101 Feeder Breaker (101 SAFEGUARDS) to appropriate 4kV Safeguard Bus.	101 Feeder Breaker indicates OPEN and diesel generator maintains proper Frequency and Voltage			
6. PLACE 143-AX103 "Tap Changer" (SELECT) in "AUTO" at panel 1A-C661.	143-AX103 "Tap Changer" (SELECT) in "AUTO"			

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
7. Placing 143-BX103 "Tap Changer" (SELECT) in "MANUAL" makes the 20 bus offsite source INOPERABLE. ENSURE TS 3.8.1.1 requirements are met for Unit 1 AND Unit 2.	N/A TS 3.8.1.1 requirements are met for Unit 1 AND Unit 2. was provided in Initial Conditions			
8. PLACE 143-BX103 "Tap Changer" (SELECT) in "MANUAL" at panel 2D-C661. Que: 143-BX103 "Tap Changer" (SELECT) is in "MANUAL"	N/A			
*9. INSERT Synchroscope Switch handle into synchroscope switch (SYNC) for appropriate 201 4kV Bus Feeder breaker <u>AND</u> PLACE to "ON."	Synchroscope Switch (SYNC) for D13 201 4kV Bus Feeder breaker "ON."			
10. OBSERVE proper operation of appropriate synchroscope (SYSTEM) by verifying the following:.	N/A			
10a. Synchroscope rotating.	Synchroscope rotating			
10b. WHEN synchroscope is at 180 degrees, THEN both lights are fully bright.	At 180 degrees both lights are fully bright			
10c. WHEN synchroscope is at 0 degrees, THEN both lights are off.	At 0 degrees both lights are off			
*11. ADJUST engine speed using 165-A(B,C,D)G501/CS, "Diesel Generator Speed Governor Control Switch" (SPEED GOVERNOR) until synchroscope is rotating slowly in the SLOW direction (counterclockwise).	Synchroscope is rotating slowly in the SLOW direction (counterclockwise)			

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
<p>*12. ADJUST diesel generator voltage using 170-A(B,C,D)G502/CS, "Diesel Generator Voltage Regulator Switch" (VOLTAGE REGULATOR) until "Synchronizing Running Voltmeter," RUNNING is slightly higher than "Synchronizing Incoming Voltmeter," INCOMING</p>	<p>Synchronizing Running Voltmeter RUNNING is slightly higher (1-5 Volts) than Synchronizing Incoming Voltmeter INCOMING</p>			
<p>*13 WHEN synchroscope (SYSTEM) is within 3 degrees before 12 O'clock, THEN CLOSE 201 Feeder Breaker (201 Safeguards) to appropriate 4kV Safeguard Bus</p>	<p>201 Feeder Breaker (201 Safeguards) closed to appropriate 4kV Safeguard Bus</p>			
<p>14. TURN synchronizing switch to "OFF"</p>	<p>Synchronizing switch is "OFF"</p>			
<p style="text-align: center;">Alternate Path Starts Now:</p> <p>The D13 D-G Trouble alarm will annunciate shortly after the D13-201 Breaker is closed.</p>				

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
<p>15. Respond to the D13 D-G Trouble Alarm</p> <p>Cue: The EO at D13 D/G reports:</p> <ul style="list-style-type: none"> • The alarm is due to a generator lube oil high temperature. It is reading 205 degrees F and rising slowly. • The local ARC, (1CC514 C-1), states: consider tripping engine to avoid possible serious damage <p>NOTE: Provide the following Cue ONLY if candidate requests direction from SSVN</p> <p>Cue: The CRS directs you to place the D13 D/G in a safe condition.</p>	<p>Dispatch an EO to investigate Trouble Alarm</p>			
<p>EVALUATOR NOTE</p> <p>The following steps are from S92.2.N, Step 4.2, Rapid Shutdown Due To Alarm Or Abnormal Condition</p>				
<p>*16. PLACE Diesel Generator Breaker to "TRIP"</p>	<p>Diesel Generator Breaker control switch taken to "TRIP"</p>			
<p>16.a AND "PULL TO LOCK"</p>	<p>Diesel Generator Breaker control switch taken to "PULL TO LOCK"</p>			
<p>*17. PLACE 101-CG501/CS, "Diesel Generator Control," to "STOP".</p>	<p>101-CG501/CS, "Diesel Generator Control," switch taken to "STOP"</p>			
<p>17.a AND "PULL TO LOCK".</p> <p>CUE: You have met the termination criteria for this JPM</p>	<p>101-CG501/CS, "Diesel Generator Control," switch taken to "PULL TO LOCK".</p>			

JPM Stop Time _____

INITIAL CONDITIONS:

7. All prerequisites for 4 KV transfer are completed
8. TS 3.8.1.1 requirements are met for Unit 1 AND Unit 2
9. S92.1.N, Diesel Generator Set Up for Automatic Operations and S92.9.N Routine Inspection of the Diesel Generators have been completed for D13 Diesel Generator
10. D13 has been Started, Synchronized and Loaded to 2000 kW per S92.1.O, Local and remote manual Startup of a Diesel Generator
11. ESW is Aligned to Support Diesel Generator operation
12. An EO is standing by at the D13 Diesel Generator

INITIATING CUE:

You are directed by Shift Supervision to transfer 4KV Safeguard Bus from 101 Safeguard Bus Feed to the 201 Safeguard bus feed using D13 Diesel Generator per S92.6.A.

Exelon Nuclear

Job Performance Measure

Control Rod Exercise Test (ST-6-107-760-1)

JPM Number: LLOJPM0107

Revision Number: 002

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
 Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
 Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. Revision 2, Format changed (no rev markers used), No longer identified as Alternate path (based on procedure revisions)

SIMULATOR SETUP INSTRUCTIONS

1. Provide Copy of ST-6-107-760-1, AND Control Rod Position Report
2. Reset Simulator to IC that supports test
3. Ensure Rod Pattern supports Control Rod 14-55 at position 48
4. Insert The following:

Interventions Summary - C:\Documents and Settings\training\Desktop\ILT 2010 SECURE\ILT 2010\JPMS\SIM\CR EXERCISE TEST\scenario JPMT.scn

Hide Malfunctions - 2 Show Remotes - 0 Show Overrides - 0 Hide Annunciators - 1

Malfunction Summary

Mal ID	Mult ID	Description	Current Value	Target Value	Rimptime	Actime	Dactime	Trig
MRD016B	14-55	Control Rod Failure, Drift Out		True	00:00:00	00:00:00	00:00:00	0
MRD016D	14-55	Control Rod Failure, Stuck		True	00:00:00	00:00:02	00:00:02	1

Timer Pause Active Pending

Annunciator Summary

Window	Description	Tagname	Override Type	DVal	AVal	Actime	Dactime	Trig
F4	Rod Drift	108 REACTOR F4	OFF			00:00:00	00:00:00	0

Timer Pause Active Pending

INITIAL CONDITIONS:

1. Control Rod Exercise Test ST-6-107-760-1 is required for rod 14-55
2. No fuel defects exist
3. Reactor Engineering has determined that inadvertent double notching of rod 14-55 is acceptable and a power reduction is not required.
4. All prerequisites are satisfied for ST-6-107-760-1, and S73.1.A

TASK STANDARD(S):

Control Rod 14-55 is inserted at least one notch and returned to position 48 in accordance with ST-6-107-760-1.

INITIATING CUE:

Shift Supervision directs you to perform Control Rod Exercise Test ST-6-107-760-1, step ____ for control rod 14-55.

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

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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: Control Rod Exercise Test (ST-6-107-760-1)

JPM Number: LLOJPM0107 Revision Number: 002

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 201003 A2.01 3.4/3.6

Suggested Testing Environment: Simulator

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

Reference(s): Procedure ST-6-107-760-1 Control Rod Exercise Test Rev: 66

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: _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Provide a current copy of ST-6-107-760-1, Control Rod Exercise marked up as Partial Procedure	N/A			
2. PERFORM the following: VERIFY on the 4 Rod Display that the selected Rod indicates position 48.	Control Rod 14-55 is at position 48			
3 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			
* 4 INSERT the control rod one notch.	Insert pushbutton depressed			
5. VERIFY on the Four Rod Display that the selected Rod indicates position 46	Operator recognizes that rod indicated position 46			
6. IF any control rod begins to insert AND settles back to position 48 THEN PERFORM the following.	Operator recognizes that rod moved to position 46 and then returned to, and settled position 48.			
Driver Note: after first control rod insertion is attempted reload scenario file (this reloads CR stuck after 2 seconds, rod will not reach position 46)				
* 7 ATTEMPT another single notch insert to position 46.	Insert pushbutton depressed			
8 IF successful THEN GO TO step _____	Operator recognizes that rod moved to position 46 and then returned to position 48.			
9. IF not successful THEN PERFORM the following:	N/A			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>9a. IF control rod does not indicate notch position 46 due to insufficient control rod movement,</p> <p>THEN REVIEW evaluation provided by Reactor Engineering per step 2.8 to determine if it is acceptable to insert the rod to position 44 due to an inadvertent double-notching without a power reduction.</p> <p>If candidate wishes to verify then: CUE: RE has determined that inadvertent double-notching acceptable</p>	Covered in initial conditions.			
<p>9b. IF a power reduction is required, THEN REDUCE core power in accordance with GP-5 Appendix 2, Section 3.1, using core flow per Reactor Maneuvering Shutdown Instructions (RMSI) to required power level. AND GO TO step 4.4.1.1.e.4.</p> <p>If candidate wishes to verify then CUE: RE has determined that power reduction is not required</p>	Covered in initial conditions			
<p>* 10. RAISE CRD System Drive pressure by 25 psid, not to exceed 350 psid.</p>	CRD System drive pressure is elevated by ≥ 25 psid not to exceed 350 psid			
<p>* 11. ATTEMPT a single notch insert.</p>	Insert pushbutton depressed			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
12. <u>IF</u> the rod double notches to position 44, <u>THEN</u> WITHDRAW the rod to position 48	The control rod either latches at position 46 or double notches to position 44 and then is withdrawn to position 48			
CUE: You have met the termination criteria for the JPM. You may stop here				

JPM Stop Time: _____

INITIAL CONDITIONS:

- Control Rod Exercise Test ST-6-107-760-1 is required for rod 14-55
- No fuel defects exist
- Reactor Engineering has determined that inadvertent double notching of rod 14-55 is acceptable and a power reduction is not required.
- All prerequisites are satisfied for ST-6-107-760-1, and S73.1.A

INITIATING CUE:

Shift Supervision directs you to perform Control Rod Exercise Test ST-6-107-760-1, step ___ for control rod 14-55.

Exelon Nuclear

Job Performance Measure

Align RECW For Drywell Cooling (ALTERNATE PATH)

JPM Number: LLOJPM0757

Revision Number: 000

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
- Procedure _____ Rev: _____
- Procedure _____ Rev: _____
- Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. N/A, Develop from 2008 ILT NRC JPM

SIMULATOR SETUP INSTRUCTIONS

Hang information tags on the following valves with the noted information:

- HV-51-1F080A, RHR Sample Line Downstream Isolation (SAMPLE OUTBOARD) ISO CLOSED
- HV-51-1F080B, RHR Sample Line Downstream Isolation (SAMPLE OUTBOARD) ISO CLOSED
- HV-41-1F085, Main Steam Line Outboard Sample (DRAIN SAMPLE OUTBOARD) ISO CLOSED
- HV-43-1F020, Recirc Sample Line Outboard Isolation (SAMPLE) ISO CLOSED

1. Reset the Simulator to IC-17
2. Scram the reactor
3. Trip Both Recirc Pumps
4. Allow FWLC to transfer to startup level control
5. Shutdown RWCU per S44.2.A
6. Setup the following:

Interventions Summary - C:\Documents and Settings\training\Desktop\ILT 2010 SECURE\ILT 2010\3PM'S SIM\RECW TO DW BOT\RO-BRD\VIEW\INTVNTS.SUMMARY

Hide Malfunctions - 2 Hide Remotes - 2 Hide Overrides - 1 Hide Annunciators - 4

Malfunction Summary

Mal ID	Mal ID	Description	Current Value	Target Value	Rmptime	Actime	Deactime	Trig
MPC482A		Drywell Chiller 1A Trips	True	True	00:00:00	00:00:00	00:00:00	0
MPC482B		Drywell Chiller 1B Trips	True	True	00:00:00	00:00:00	00:00:00	0

Timer Pause [Delete All](#) Active Pending

Remotes Summary

Item ID	Mal ID	Description	Current Value	Target Value	Rmptime	Actime	Trig
RCW034		Head Tank Drain Valve 1027		OPEN	00:00:00	00:01:30	2
RPC306		RECW Backup Supply Vlvs to DW Chill Water Fdn Bkr		CLOSE	00:00:00	00:00:00	1

Timer Pause [Clear List](#) Active Pending

Override Summary

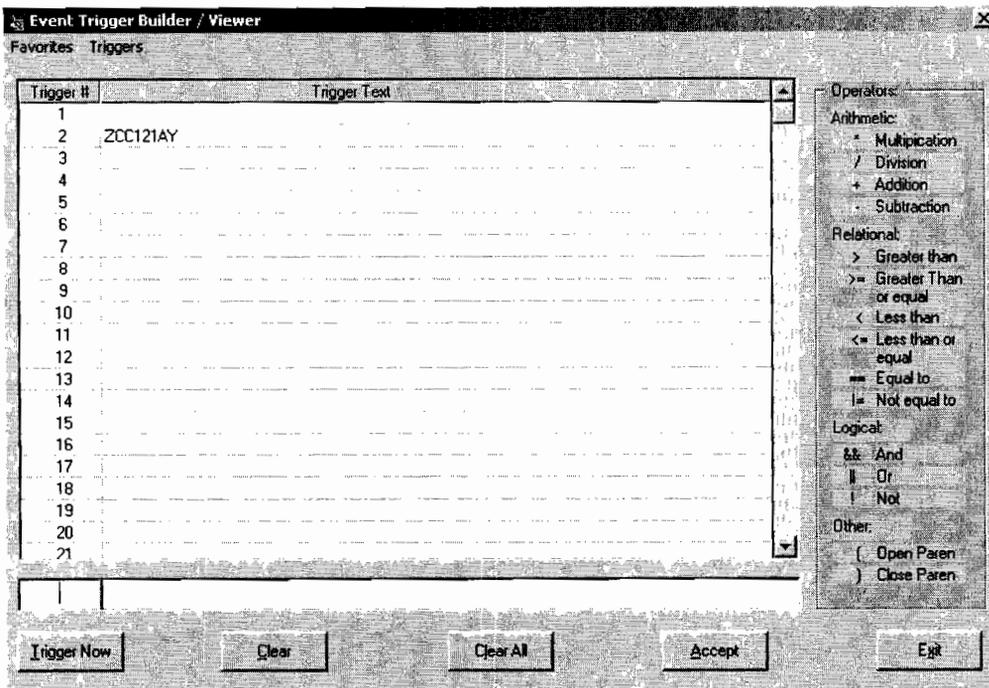
Tag ID	Description	Position / Target	Actual Value	Override Value	Rmptime	Actime	Deactime	Trig
PI13108	Reactor Enclosure Cooling Water Header Pressure Indication		40.00000	00.04.00	00:04:00	00:01:30	00:00:00	2

Timer Pause [Delete All](#) Active Pending

Annunciator Summary

Window	Description	Tagname	Override Type	DVal	AVal	Actime	Deactime	Trig
A5	1B Recirc Pump Motor Winding Cooling Water Lo Flow	112 CLEAN UP A5	OFF			00:00:00	00:00:00	0
G3	1A / 1B Recirc Pump Motor Hi Temp	111 RECIRC G3	OFF			00:00:00	00:00:00	0
B5	Drywell Cooler Drain Flow High	115 COOL B B5	ON			00:02:00	00:00:00	2
A5	1A Recirc Pump Motor Winding Cooling Water Lo Flow	111 RECIRC A5	OFF			00:00:00	00:00:00	0

Timer Pause [Delete All](#) Active Pending



INITIAL CONDITIONS:

- Unit 1 is in OPCON 4.
- DW Chilled Water has been lost due to trips on both Drywell Chiller Units
- DW temperature is 150°F and rising.
- The CRS has entered OT-101, and T-102
- RWCU has been shutdown per S.44.2.A, Reactor Water Cleanup Shutdown.
- Administrative Clearances have been applied for valves in section 4.2.4

TASK STANDARD:

Leaking DW Loop A is isolated from RECW. RECW is aligned to cool the drywell using DW Loop B.

INITIATING CUE:

You are directed by Shift Supervision to align RECW operation to cool the drywell, using A Loop first per S13.6.D.

- Locked Valve Log entries have been authorized for required beaker closures

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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: Align RECW for Drywell Cooling
JPM Number: LLOJPM0757 **Revision Number:** 000
Task Number and Title: Per Licensed Operator Vision Task Matrix
K/A Number and Importance: 400000 K1.02 3.2/3.4

Suggested Testing Environment: Simulator

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

Reference(s):

Procedure: S13.6.D, RECW Operation with Loss of Drywell Chilled Water Rev. 14
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:** _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain a current revision of S13.6.D, RECW Operation With Loss of Drywell Chilled Water	Current revision of S13.6.D. Obtained			
*2. CLOSE HV-13-*02, Cooling Water to Reactor Building Isolation (SUPPLY ISOL).	HV-13-102 closed			
3. IF loss of instrument air prohibits closure of HV-13-*02, SUPPLY ISOL, THEN CLOSE 13-*039, RECW Header Valve to RWCU Non-Regen Heat Exchanger.	N/A			
4. Block CLOSE the following sample point isolation valves <ul style="list-style-type: none"> • HV 51 *F080A • HV 51 *F080B • HV 41 *F085 • HV 43 *F020 • 023-1246 CUE: After 1 minute report: <ul style="list-style-type: none"> • EO reports 023-1246 is closed 	Place Information tags on <ul style="list-style-type: none"> • HV 51 1F080A • HV 51 1F080B • HV 41 1F085 • HV 43 1F020 Directs EO to block: <ul style="list-style-type: none"> • 023-1246 			
Activate Trigger 1 to simulate closing D114 breakers				
*5. CLOSE the following breakers: <ul style="list-style-type: none"> • D*14-R-C-15 (124A) • D*14-R-C-19 (124B) • D*14-R-C-16 (125A) • D*14-R-C-20 (125B) CUE: After 1 minute report: EO reports: <ul style="list-style-type: none"> • D114-R-C-15 • D114-R-C-19 • D114-R-C-16 • D114-R-C-20 	Directs EO to close following breakers: <ul style="list-style-type: none"> • D114-R-C-15 • D114-R-C-19 • D114-R-C-16 • D114-R-C-20 			

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

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
6. IF required THEN BYPASS isolations per GP-8.5.	N/A			
*7. PLACE HSS-87-*21A(B), Loop Drywell Water Source Mode Switch (LOOP), in "RE CLG WTR" for loop to be supplied by RECW AND VERIFY the following: <ul style="list-style-type: none"> • Red indicating lights RECW IN AND RECW OUT Lit • Green indicating lights CHLD WTR IN AND CHLD WTR OUT Lit 	HSS-87-121A in RE CLG WTR placed position for LOOP A. Valves indicate flow path open from RECW and closed from Chill Water verified.			
8. VERIFY Drywell Isolation Loop A(B) (LOOP) red indicating lights DRYWELL INLET AND DRYWELL OUTLET Lit for loop to be supplied by RECW. <ul style="list-style-type: none"> • LOOP A HS-87-*28 • LOOP B HS-87-*22 	Valves verified open: <ul style="list-style-type: none"> • LOOP A HS-87-128 • LOOP B HS-87-122 			
9. IF RECW flow is insufficient for adequate cooling, THEN PLACE standby RECW Heat Exchanger in service AND	N/A			
ALTERNATE PATH BEGINS HERE				
Activate Trigger 2 to Simulate RECW leak				
10. Responds to RECW Head Tank level alarm.	Refer to ARC for Alarm Panel 118 Window H-5, REAC ENCL COOLING WATER HEAD TANK HI/LO LEVEL.			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>10.a Verify RECW Head Tank 10T201 level locally using LG-13-101.</p> <p>QUE: Report back as EO after 1 minutes</p> <ul style="list-style-type: none"> • RECW Head Tank level is 35 inches and lowering approximately 1 inch per minute. • If asked, report that demin water supply valve LV-13-101 is fully opened. 	<p>Direct EO to check level locally.</p>			
<p>When HSS-87-121A is placed in the DWCW position, perform the following:</p> <ul style="list-style-type: none"> • Restore PI13-108 (RECW Header pressure indication) to normal over 2 minutes <p>After 1 minute:</p> <ul style="list-style-type: none"> • Toggle ANN 118 H5 (W Cooler Drain Flow) to OFF • Toggle ANN 115 B5 (RECW Head tank level) to OFF 				
<p>*11. Recognizes likely leak location is on Loop A of Drywell Cooling and isolates Loop A Drywell Cooling Loop from RECW.</p> <p>Cue:</p> <p>If necessary, CRS should ask applicant to identify the location of the leak and take necessary actions to isolate and to maintain the RECW system.</p> <p>Cue: Report back as EO after 1 minutes</p> <ul style="list-style-type: none"> • RECW Head Tank level is 36 inches going up slow. <p>Cue:</p> <p>If necessary, direct applicant to continue with the procedure to establish drywell cooling.</p>	<p>Isolate the leak from RECW by placing HSS-87-121A in the DWCW position.</p>			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<p>*12. IF other Drywell Chilled Water loop is needed, THEN PLACE HSS-87-*21B(A), Loop Drywell Water Source Mode Switch (LOOP), in RE CLG WTR AND VERIFY the following:</p> <ul style="list-style-type: none"> • Red indicating lights RECW IN AND RECW OUT Lit. • Green indicating lights CHLD WTR IN AND CHLD WTR OUT Lit. • Drywell Isolation Loop B(A) (LOOP) red indicating lights DRYWELL INLET AND DRYWELL OUTLET Lit. <p>- LOOP A HS-87-*28 - LOOP B HS-87-*22</p>	<p>HSS-87-121B, Loop Drywell Water Source Mode Switch (LOOP) Placed in RE CLG WTR position</p> <p>Proper indicating lights verified</p>			
<p>CUE: You have met the termination criteria for the JPM.</p>				

JPM Stop Time: _____

INITIAL CONDITIONS:

- Unit 1 is in OPCON 4.
- DW Chilled Water has been lost due to trips on both Drywell Chiller Units
- DW temperature is 150°F and rising.
- The CRS has entered OT-101, and T-102
- RWCU has been shutdown per S.44.2.A, Reactor Water Cleanup Shutdown.
- Administrative Clearances have been applied for valves in section 4.2.4

INITIATING CUE:

You are directed by Shift Supervision to align RECW operation to cool the drywell, using A Loop first per S13.6.D.

- Locked Valve Log entries have been authorized for required beaker closures

Exelon Nuclear

Job Performance Measure

MANUALLY ISOLATE THE REACTOR ENCLOSURE

JPM Number: 0022

Revision Number: 003

Date: __/__/__

Developed By:	_____	_____
	Instructor	Date
Validated By:	_____	_____
	SME or Instructor	Date
Reviewed By:	_____	_____
	Operations Representative	Date
Approved By:	_____	_____
	Training Department	Date

REVISION RECORD (Summary)

1. Revision 003, reformatted, no rev markers used

SIMULATOR SETUP INSTRUCTIONS

1. Reset simulator to IC 17
2. Verify the following

Interventions Summary - C:\Documents and Settings\training\Desktop\ILT 2010 SECURE\ILT 2010\JPMS\SIM\Manually Isolate RE ONLY RO\JPM0022.scn

Hide Malfunctions - 6 Hide Remotes - 1 Show Overrides - 0 Show Annunciators - 0

Malfunction Summary

MalID	MultID	Description	Current Value	Target Value	Rmptime	Actime	Dactime	Trig
MRE309A		1A Reactor Enclosure Supply Fan Trips		True	00:00:00	00:00:00	00:00:00	0
MRE309B		1B Reactor Enclosure Supply Fan Trips		True	00:00:00	00:00:00	00:00:00	0
MRE309C		1C Reactor Enclosure Supply Fan Trips		True	00:00:00	00:00:00	00:00:00	0
MRE310A		1A Reactor Enclosure Exhaust Fan Trips		True	00:00:00	00:00:00	00:00:00	0
MRE310B		1B Reactor Enclosure Exhaust Fan Trips		True	00:00:00	00:00:00	00:00:00	0
MRE310C		1C Reactor Enclosure Exhaust Fan Trips		True	00:00:00	00:00:00	00:00:00	0

Timer Pause **Delete All** **Active** **Pending**

Remotes Summary

RemID	MultID	Description	Current Value	Target Value	Rmptime	Actime	Trig
RRE147		Reactor Enclosure To SGTS Isolation Damper SGD76-206-1		OPEN	00:00:00	00:00:00	0

Timer Pause **Clear List** **Active** **Pending**

INITIAL CONDITIONS:

- Unit 1 is in OPCON1
- Unit 1 Reactor Enclosure HVAC is tripped and cannot be restarted
- RERS and SGTS are lined up for automatic initiation as per S76.1.C, SGTS and RERS Setup for Automatic Initiation
- SGD-076-206-1, Unit 1 Rx Encl-SGTS Slide Gate Damper, (602-R12-313) is OPEN
- Reactor Enclosure Secondary Containment is not extended to the Refuel Floor (HS-76-151A/B and 152A/B, at 10C622 and 10C623 are in "NORMAL")
- Reactor Enclosure temperature monitoring per S76.0.C, will be performed by an Equipment Operator
- RERS and SGTS run times will be recorded by the PRO

INITIATING CUES:

- SSVN has directed a manual Reactor Enclosure Isolation be initiated on Unit 1 from the MCR using the manual isolation pushbuttons per S76.8.B, section 4.4

TASK STANDARD:

- Manual Reactor Enclosure Isolation initiated and Instrument Gas Isolation reset

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

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

JPM SUMMARY

Operator's Name: _____

Job Title: SED SM SRO RO STA/IA OTHER

JPM Title: Manually Isolate the Reactor Enclosure

JPM Number: LLOJPM0022 Revision Number: 003

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 223002 A4.02 3.9/3.8
 288000 A3.01 3.8/3.8

Suggested Testing Environment: Simulator

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

Reference(s): S76.8.B Rev: 30
 S76.9.A Rev: 21
 GP-8.2 Rev: 08

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: _____

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

JPM Start Time: _____

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
1. Obtain current revision of S76.8.B, Initiation of Reactor Enclosure or Refueling Floor Secondary Containment:	Current revision of S76.8.B obtained			
2. If desired, refer to S76.2.B, Shutdown of Reactor Enclosure HVAC CUE: Reactor Enclosure HVAC is secured	N/A			
* 3. PLACE HS-76-178A HVAC ISOLATION A to "ISOLATION"	HS-76-178A HVAC ISOLATION A placed to "ISOLATION"			
* 3a. PLACE HS-76-178B HVAC ISOLATION B to "ISOLATION"	HS-76-178B HVAC ISOLATION B placed to "ISOLATION"			
3b. Acknowledge annunciators Cue: Annunciator response will be completed by the PRO	N/A			
* 3c. DEPRESS and RELEASE pushbuttons at 10C681	Pushbuttons at 10C681 panel depressed and released			
3d. Acknowledge annunciators Cue: Annunciator response will be completed by the PRO	N/A			
4. Record SGTS and RERS run times in MCR Log Cue: The PRO will record SGTS / RERS run times	N/A			
EVALUATOR NOTE: Direct Operator to reset PCIG without resetting RE HVAC per "GP-8.2 Manual Isolations"				
5. Obtain current revision of GP-8.2, Manual Isolations	GP-8.2 obtained			

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

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
* 6. PLACE white handled handswitch on 10C601 to "OPEN"	Any white handled handswitch on 10C601 panel to "OPEN"			
* 7a. PLACE HS-76-179A on 10C681 to "RESET"	HS-76-179A on 10C681 placed to "RESET"			
* 7b. PLACE HV-59-129A to "CLOSE"	HV-59-129A placed to "CLOSE"			
* 7c. RETURN HS-76-179A to "AUTO"	HS-76-179A returned to "AUTO"			
* 7d. RETURN white handled handswitch to its initial position	White handled handswitch returned to its initial position			
* 7e. POSITION PCIG valves as desired "OPEN" HV-59-101 HV-59-129A Note: Listed PCIG valves may be opened when both "A" and "B" logics are reset	HV-59 129A and HV-59 101 placed to "OPEN"			
* 8. PLACE HV-57-104 OR HV-57-114 to "OPEN"	HV-57-104 OR HV-57-114 placed to "OPEN"			
* 8a. PLACE HS-76-179B on 10C681 to "RESET"	HS-76-179B on 10C681 placed to "RESET"			
* 8b. PLACE handswitches for the following valves to "CLOSE" HV-59-102 HV-59-129B HV-59-135 HV-59-131	Handswitches for the following valves placed to "CLOSE" HV-59-102 HV-59-129B HV-59-135 HV-59-131			
* 8c. RETURN HS-76-179B to "AUTO"	HS-76-179B returned to "AUTO"			
* 8d. RETURN HV-57-104 OR HV-57-114 to its initial position	HV-57-104 OR HV-57-114 returned to its initial position			
8e. POSITION PCIG valves as desired				

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

ELEMENT	STANDARD	SAT	UNSAT	Comment Number
<u>EVALUATOR NOTE:</u> Notify operator It is desired to perform the required valve alignment to place Instrument Gas in Service				
9. To perform a PCIG restoration "OPEN" the following: HV-59-102 HV-59-131 HV-59-129B HV-59-135	Operator opens the listed PCIG valves			
CUE: You have met the termination criteria for the JPM. You may stop here				

JPM Stop Time: _____

INITIAL CONDITIONS:

- Unit 1 is in OPCON1
- Unit 1 Reactor Enclosure HVAC is tripped and cannot be restarted
- RERS and SGTS are lined up for automatic initiation as per S76.1.C, SGTS and RERS Setup for Automatic Initiation
- SGD-076-206-1, Unit 1 Rx Encl-SGTS Slide Gate Damper, (602-R12-313) is OPEN
- Reactor Enclosure Secondary Containment is not extended to the Refuel Floor (HS-76-151A/B and 152A/B, at 10C622 and 10C623 are in "NORMAL")
- Reactor Enclosure temperature monitoring per S76.0.C, will be performed by an Equipment Operator
- RERS and SGTS run times will be recorded by the PRO

INITIATING CUES:

- SSVN has directed a manual Reactor Enclosure Isolation be initiated on Unit 1 from the MCR using the manual isolation pushbuttons per S76.8.B, section 4.4

Limerick Generating Station

Job Performance Measure

BYPASSING AND REMOVING THE *A RPS AND UPS STATIC INVERTER
FROM SERVICE

JPM Number: 0203

Revision Number: 008

Date: ___/___/___

Developed By: _____ **Date**
Instructor

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

Reviewed By: _____ **Date**
Operations Representative

Approved By: _____ **Date**
Training Department

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

Revision 008, minor non-technical correction

SIMULATOR SETUP INSTRUCTIONS

In-plant

INITIAL CONDITIONS:

____ A RPS and UPS Static Inverter is in Service

TASK STANDARD(S):

The *A RPS/UPS static inverter is bypassed and removed from service.

INITIATING CUE:

You are directed by Shift Supervision to bypass the ____A RPS/USP static inverter and remove it from service per S94.2.A

Briefing has been performed

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

JPM SUMMARY

Operator's Name: _____

Job Title: SED SM SRO RO STA/IA OTHER

JPM Title: BYPASSING AND REMOVING THE *A RPS AND UPS STATIC INVERTER FROM SERVICE

JPM Number: LLOJPM0203 Revision Number: 007

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 262002 K4.01 3.1 / 3.4

Suggested Testing Environment: In-Plant

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

Reference(s): Procedure S94.2.A By-Passing And Removing The *A Rps Ups Static Inverter From Service Rev: 16

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: _____

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

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain current revision of S94.2.A.	Current revision of S94.2.A. obtained.			
2. VERIFY procedure being performed on correct unit/train.	Verified on correct unit/train			
3. VERIFY ALT. AVAIL. yellow indicating light Lit. (CUE: "ALT. AVAIL. yellow indicating light Lit..")	ALT. AVAIL. yellow indicating light Lit.			
4. VERIFY SYNC REF. AVAIL. yellow indicating light Lit. (CUE: "SYNC REF. AVAIL. yellow indicating light Lit.")	SYNC REF. AVAIL. yellow indicating light Lit.			
5. VERIFY SYNC FAIL SYNC MONITOR red alarm light <u>not</u> Lit. (CUE: "SYNC FAIL SYNC MONITOR red alarm light <u>not</u> Lit.")	SYNC FAIL SYNC MONITOR red alarm light <u>not</u> Lit			
* 6. PLACE TEST TRANSFER switch to "MAN" (CUE: "TEST TRANSFER switch in "MAN"	TEST TRANSFER switch in "MAN"			
7. VERIFY the following:	N/A			
7.a. ON ALTERNATE red indicating light comes on (CUE: "ON ALTERNATE red indicating light on.")	ON ALTERNATE red indicating light on			
7.b. ON INVERTER green indicating light goes off (CUE: "ON INVERTER green indicating light off.")	ON INVERTER green indicating light off			

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

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
7.c. DC AMPS ammeter decreases to approximately 5 amps (CUE: "DC AMPS ammeter approximately 5 amps.")	DC AMPS ammeter approximately 5 amps			
* 8. PLACE BYPASS SWITCH to BYPASS position at *ONAD160 (CUE: "BYPASS SWITCH in BYPASS.")	BYPASS SWITCH in BYPASS			
9. VERIFY ATS BYPASSED red light comes on (CUE: "ATS BYPASSED red light on.")	ATS BYPASSED red light on			
* 10. PLACE TEST TRANSFER SWITCH to "AUTO" to transfer Static Switch from Alternate Source to Inverter (CUE: "TEST TRANSFER SWITCH in "AUTO".")	TEST TRANSFER SWITCH in "AUTO"			
11. VERIFY the following steps occur:	N/A			
11.a. ON INVERTER green indicating light comes on (CUE: "ON INVERTER green indicating light on.")	ON INVERTER green indicating light on			
11.b. ON ALTERNATE red indicating light goes off (CUE: "ON ALTERNATE red indicating light off.")	ON ALTERNATE red indicating light off			
* 12. PLACE ISOLATION SWITCH to "OPEN" position at *ONAD160, (CUE: "ISOLATION SWITCH in "OPEN" position.")	ISOLATION SWITCH in "OPEN" position			

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

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
13. VERIFY the following:	N/A			
13.a. ALT. AVAIL. yellow indicating light goes off (CUE: "ALT. AVAIL. yellow indicating light off.")	ALT. AVAIL. yellow indicating light off			
13.b. ALT. LOW VOLTS red alarm light comes on (CUE: "ALT. LOW VOLTS red alarm light on.")	ALT. LOW VOLTS red alarm light on			
13.c. SYNC. REF. AVAIL. yellow indicating light goes off (CUE: "SYNC. REF. AVAIL. yellow indicating light off.")	SYNC. REF. AVAIL. yellow indicating light off			
13.d. SYNC FAIL SYNC MONITOR red alarm light comes on (CUE: "SYNC FAIL SYNC MONITOR red alarm light on.")	SYNC FAIL SYNC MONITOR red alarm light on			
13.e. ALT. VOLTS voltmeter goes to 0 volts (CUE: "ALT. VOLTS voltmeter at 0 volts.")	ALT. VOLTS voltmeter at 0 volts			
* 14. DEPRESS <u>AND RELEASE</u> INVERTER STOP red pushbutton (CUE: "INVERTER STOP red pushbutton Depressed <u>and</u> Released.")	INVERTER STOP red pushbutton Depressed <u>and</u> Released			
15. VERIFY the following:	N/A			
15.a. INV. VOLTS meter goes to 0 volts (CUE: "INV. VOLTS meter 0 volts.")	INV. VOLTS meter 0 volts			
15.b. INV. FREQUENCY meter drops to far left (CUE: "INV. FREQUENCY meter at far left.")	INV. FREQUENCY meter at far left			

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

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
15.c. Inverter cooling fans shut off as indicated by FAN FAIL red alarm light on <u>AND</u> no air flow from top rear of inverter (CUE: "Inverter cooling fans off.")	Inverter cooling fans off			
15.d. SYNC FAIL SYNC MONITOR red alarm light goes off (CUE: "SYNC FAIL SYNC MONITOR red alarm light off.")	SYNC FAIL SYNC MONITOR red alarm light off			
15.e. OUTPUT LOW VOLTS red alarm light comes on after approximately 10 seconds (CUE: "OUTPUT LOW VOLTS red alarm light comes on")	OUTPUT LOW VOLTS red alarm light comes on			
* 16. OPEN Inverter DC INPUT breaker (CUE: "Inverter DC INPUT breaker Open.")	Inverter DC INPUT breaker Open			
* 17. PLACE PRECHARGE/ DISCHARGE toggle switch to "DISCHARGE" position (CUE: "PLACE PRECHARGE/ DISCHARGE toggle switch in "DISCHARGE".")	PLACE PRECHARGE/ DISCHARGE toggle switch in "DISCHARGE"			
18. VERIFY the following:	N/A			
18.a. CHARGED green indicating light goes off (CUE: "CHARGED green indicating light off.")	CHARGED green indicating light off			
18.b. DC VOLTS meter decreases to 0 volts (CUE: "DC VOLTS meter at 0 volts.")	DC VOLTS meter at 0 volts			

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

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
18.c. DC AMPS meter decreases to 0 amps (CUE: "DC AMPS meter decreases to 0 amps")	DC AMPS meter decreases to 0 amps			
18.d. All remaining indicating lights go off. (CUE: "All remaining indicating lights off.")	All remaining indicating lights off.			
* 19. OPEN breaker 72-20120 (*DA-20), at 250 VDC MCC *0D201 (*DA) (304-R11-217 for Unit 1, 370-R18-217 for Unit 2), to remove voltage to Inverter DC INPUT breaker (CUE: "Breaker 72-20120 (*DA-20), at 250 VDC MCC *0D201 (*DA) (304-R11-217 for Unit 1, 370-R18-217 for Unit 2) OPEN.")	Breaker 72-20120 (*DA-20), at 250 VDC MCC *0D201 (*DA) (304-R11-217 for Unit 1, 370-R18-217 for Unit 2) OPEN			
CUE: You have met the termination criteria for the JPM. You may stop here				

JPM Stop Time: _____

INITIAL CONDITIONS:

____A RPS and UPS Static Inverter is in Service.

INITIATING CUE:

You are directed by Shift Supervision to bypass the ____A RPS/USP static inverter and remove it from service per S94.2.A

Briefing has been performed

Exelon Nuclear

Job Performance Measure

ALIGNMENT OF EQUIPMENT FOR SHUTDOWN COOLING

JPM Number: LLOJPM0758

Revision Number: 000

Date: _____

Developed By: _____
Instructor Date

Validated By: _____
SME or Instructor Date

Reviewed By: _____
Operations Representative Date

Approved By: _____
Training Department Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
Procedure _____ Rev: _____
Procedure _____ Rev: _____
Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
Subsequent validations, sign and date below:

_____ SME / Instructor _____ Date

_____ SME / Instructor _____ Date

_____ SME / Instructor _____ Date

REVISION RECORD (Summary)

1. Revision 000

SIMULATOR SETUP INSTRUCTIONS

1. N/A for in-plant

INITIAL CONDITIONS:

1. LGS Unit 1 has been scrammed and safe shutdown procedures are in progress.
2. Fire is reported in Unit 1 CRD Hydraulic Equipment Area (El. 253').
3. The "1B" RHR Pump is running from the Main Control Room.
4. The following valves can NOT be positioned normally and need to be positioned:
 - HV-051-1F015B "1B RHR SHUTDOWN CLG INJECTION PCIV (OUTBOARD)"
 - HV-C-051-1F048B "1B RHR HTX. SHELL SIDE BYPASS VLV. (HEAT EXCH BYPASS)"
 - HV-051-1F014B "1B RHR HTX. S.W. INLET VLV. (1B)."
5. Another operator has been assigned to manually position the valves as needed.

TASK STANDARD(S):

Breakers for listed valves in noted position

INITIATING CUES:

You are directed by Shift Supervision to perform Alignment of Equipment for Shutdown Cooling operation per step 3.4 of 1FSSG-3045E (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

JPM SUMMARY

Operator's Name: _____ Job Title: SED SM SRO RO
 STA/IA OTHER

JPM Title: ALIGNMENT OF EQUIPMENT FOR SHUTDOWN COOLING

JPM Number: LLOJPM0758 Revision Number: 000

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance:

600000 AA2.16 3.0/3.5

600000 AA2.17 3.1/3.6

Suggested Testing Environment: In-Plant

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

Reference(s):

Procedure: 1FSSG-3045E Rev. 15

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: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain current revision of 1FSSG-3045E Procedure.	Current revision of 1FSSG-3045E obtained			
<p>2. IF any of the following valves can NOT be positioned normally, THEN POSITION valve from 10-C601-X1, 1B RHR Emergency Local Valve Control Panel, using Transfer Switches (12-217-304)</p> <p>CUE: HV-051-1F015B and HV-C-051-1F048B cannot be positioned normally</p>	N/A			
<p>* 2.a. HV-051-1F015B "1B RHR SHUTDOWN CLG INJECTION PCIV (OUTBOARD)" HSS51-115BX in EMER</p> <p>CUE: "HSS51-115BX is in EMER"</p>	HSS51-115BX in EMER			
<p>* 2.b. HV-C-051-1F048B "1B RHR HTX. SHELL SIDE BYPASS VLV. (HEAT EXCH BYPASS)" HSS51-148BX in EMER</p> <p>CUE: "HSS51-148BX is in EMER"</p>	HSS51-1148BX in EMER			
<p>3. IF HV-051-1F003B, "1B RHR HTX. SHELL SIDE OUTLET VLV. (OUTLET)", can NOT be opened normally,</p> <p>3.a. THEN OPEN breaker D124-R-G-01, "1B RHR HTX. SHELL SIDE OUTLET HV-51-1F003B" (12-217-304).</p>	N/A			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE: HV-051-1F003B can normally be positioned				
<p>* 4. IF HV-051-1F014B, "1B RHR HTX. S.W. INLET VLV. (1B)" can NOT be opened normally, THEN OPEN breaker D124-R-G-32, "1B RHR HTX. S.W. INLET VLV. HV-51-1F014B" (12-217-304).</p> <p>CUE: HV-051-1F014B can NOT normally be positioned.</p> <p>CUE: Breaker D124-R-G-32, "1B RHR HTX. S.W. INLET VLV. HV-51-1F014B" is in the open position.</p>				
Cue: You can stop here, you have met the termination criteria for this JPM				

JPM Stop Time: _____

INITIAL CONDITIONS:

1. LGS Unit 1 has been scrammed and safe shutdown procedures are in progress.
2. Fire is reported in Unit 1 CRD Hydraulic Equipment Area (El. 253').
3. The "1B" RHR Pump is running from the Main Control Room.
4. The following valves can NOT be positioned normally and need to be positioned:
 - HV-051-1F015B "1B RHR SHUTDOWN CLG INJECTION PCIV (OUTBOARD)"
 - HV-C-051-1F048B "1B RHR HTX. SHELL SIDE BYPASS VLV. (HEAT EXCH BYPASS)"
 - HV-051-1F014B "1B RHR HTX. S.W. INLET VLV. (1B)."
5. Another operator has been assigned to manually position the valves as needed.

INITIATING CUES:

You are directed by Shift Supervision to perform Alignment of Equipment for Shutdown Cooling operation per step 3.4 of 1FSSG-3045E (Unit 1).

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Job Performance Measure

INITIATE REACTOR SCRAM AND MSIV CLOSURE FROM AER USING SE-1
(ALTERNATE PATH)

JPM Number: 0261

Revision Number: 008

Date: ___/___/___

Developed By: _____
Instructor **Date**

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

Reviewed By: _____
Operations Representative **Date**

Approved By: _____
Training Department **Date**

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation.
 Prior to JPM usage, revalidate JPM using steps 9 and 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. Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page.
 Subsequent validations, sign and date below:

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

REVISION RECORD (Summary)

1. Revision 007 Change of format,, updated to reflect current procedures no revision marks

SIMULATOR SETUP INSTRUCTIONS

1. N/A for in-plant

INITIAL CONDITIONS:

1. The MCR has been evacuated due to a fire.
2. Operators were unable to take any actions for Unit ____ prior to leaving the MCR.

TASK STANDARD(S):

Actions taken to open noted fuse and “RPS” circuit Breakers

INITIATING CUE:

Shift Supervision directs you to initiate a reactor scram and MSIV isolation on Unit ____ per SE-1, step _____, in order of preference.

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

JPM SUMMARY

Operator's Name: _____

Job Title : SED RO SRO STA/IA OTHER

JPM Title: INITIATE REACTOR SCRAM AND MSIV CLOSURE FROM AER USING SE-1 (ALTERNATE PATH)

JPM Number: LLOJPM0261 **Revision Number:** 008

Task Number and Title: Per Licensed Operator Vision Task Matrix

K/A Number and Importance: 295016 3.8/3.9

Suggested Testing Environment: In-Plant

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

Reference(s): Procedure SE-1 Rev: 63

Actual Testing Environment: Simulator Control Room In-Plant Other

Testing Method: Simulate Perform

Estimated Time to Complete: 30 minutes **Actual Time:** _____ 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:** _____

JPM Start Time: _____

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1. Obtain current revision of SE-1. (CUE: Once the trainee demonstrates the ability to locate the current revision of the procedure, provide him/her a copy.)	Current revision of SE-1 obtained.			
2. Obtain fuse pullers.	Fuse pullers obtained.			
EVALUATOR NOTE Immediately prior to student entering Panel *0C611 Bay B, the evaluator must cue student that panel door handle spins free and door will not open.				
3. IF SCRAM OR MSIV closure was not accomplished, THEN PERFORM one of following:	N/A			
4. PERFORM one of the following in Auxiliary Equipment Room:	N/A			
5. REMOVE the following fuses:				
* 5.a. REMOVE fuse C71A-F14A in *0C609 Bay B. (CUE: Fuse removed.)	Fuse removed.			
* 5.b. REMOVE fuse B21H-F6A in *0C609 Bay B. (CUE: Fuse removed.)	Fuse removed.			
5.c. REMOVE fuse C71A-F14B in *0C611 Bay B. (CUE: Door handle spins free and door will not open.)	N/A			
5.d. REMOVE fuse B21H-F6B in *0C611 Bay B. (CUE: Door handle spins free and door will not open.)	N/A			
EVALUATOR NOTE Steps 5e through 5g are included in case the trainee moves on to these steps. They may move on to step 6 or 7, in which case steps 5e through 5g are N/A				

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
* 5.e. REMOVE fuse C71A-F14C in *0C609 Bay C. (CUE: Fuse removed.)	Fuse removed.			
* 5.f. REMOVE fuse B21H-F6C in *0C609 Bay C. (CUE: Fuse removed.)	Fuse removed.			
5.g. REMOVE fuse C71A-F14D in *0C611 Bay C. (CUE: Fuse will not come out of the clip.)	N/A.			
5.h. REMOVE fuse B21H-F6D in *0C611 Bay C. (CUE: Fuse will not come out of the clip.)	N/A.			
EVALUATORS NOTE The student will either perform step 6 (a and b) OR step 7 (a-d). Step not performed will be N/A.				
6. OPEN the following circuit breakers:	N/A			
* 6.a. OPEN Circuit Breaker 13, "RPS TRIP SYSTEM A VERTICAL BOARD" (*AY160) (CUE: *AY160 Circuit Breaker 13 indicates open.)	Panel *AY160 Circuit Breaker 13 switch in OPEN position.			
* 6.b. OPEN Circuit Breaker 13, "RPS TRIP SYSTEM B VERTICAL BOARD" (*BY160) (CUE: *BY160 Circuit Breaker 13 indicates open.)	Panel *BY160 Circuit Breaker 13 switch in OPEN position.			
* 7a. OPEN the following breakers in Unit* Inverter Room (452-A8-254/453-A8-254): 52-AY24801, "RPS Breaker" (*AC248) (CUE: Circuit Breaker 52-AY24801 indicates open.)	52-AY24801, "RPS Breaker" (*AC248) in OPEN position			

<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
* 7b. 52-CY24801, "RPS Breaker " (*AC248) (CUE: Circuit Breaker 52-AY24801 indicates open.)	52-CY24801, "RPS Breaker " (*AC248) in OPEN position			
* 7c. 52-BY24801, "RPS Breaker " (*BC248) (CUE: Circuit Breaker 52-AY24801 indicates open.)	52-BY24801, "RPS Breaker " (*BC248) in OPEN position			
* 7d. 52-DY24801, "RPS Breaker " (*BC248) (CUE: Circuit Breaker 52-AY24801 indicates open.)	52-DY24801, "RPS Breaker " (*BC248) in OPEN position			
CUE: You have met the termination criteria for the JPM. You may stop here				

JPM Stop Time: _____

INITIAL CONDITIONS:

1. The MCR has been evacuated due to a fire.
2. Operators were unable to take any actions for Unit ____ prior to leaving the MCR.

INITIATING CUE:

Shift Supervision directs you to initiate a reactor scram and MSIV isolation on Unit ____ per SE-1, step _____, in order of preference.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N-BOP	Swap EHC pumps
2	N/A	N-SRO R-RO	Pull control rods per GP-2 in support of plant startup.
3	MPR004B	TS, I-SRO I-RO	APRM Fails Inoperable
4	MED282C	C-BOP TS,C-SRO	Loss of Div III DC
5	MRR442B MRR443B	C-SRO C-RO C-BOP	Recirc Pump 1A, and 1B RPT Breaker Trip Power to the pumps is lost
6	MRP029D MRP407C MSL197	M	ATWS
7	MRD024	C- RO	Rod Drive Control System Failure
8	MEH108	C-BOP C-SRO C-RO	Turbine Bypass valves fail
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

SCENARIO SUMMARY

Event 1: The crew will be directed to Swap EHC pumps from 1A to 1B per S31.6.C

Objective: Evaluate the crew's ability to perform S31.6.C

Event 2: The crew will be directed to continue with GP-2 activities in support of plant startup.

Objective: Evaluate the crew's ability to withdraw Control Rods to raise reactor power.

Event 3: During the startup, APRM Channel 1 Failure: Inoperative will occur.

Objective: Evaluate the crew's ability to respond to the inoperable APRM, and reference T.S. 3.3.1.

Event 4: Once action for drifting rod is complete, a loss of Division III DC will occur.

Objective: Evaluate the crew's ability to respond to a loss of Div III DC. Including actions IAW E-1FC. The CRS will address Tech Specs 3.5.1.a, 3.5.1.b, 3.8.2.1, and 3.8.3.1.

Event 5: Once action loss of Division III DC are complete, and T.S. have been referenced, 1A and 1B Recirc Pumps will trip due to a trip of the RPT breakers. .

Objective: Evaluate the crew's ability to execute OT-112, Recirculation Pump Trip, scram the reactor and execute T-101.

Event 6: When Reactor Scram is attempted, one channel of RPS fails to deenergize and subsequently, ARI fails to initiate resulting in an ATWS. Complicating the event, SLC squib valves fail to fire.

Objective: Evaluate the crew's ability to execute T-101, T-102 and T-117. Manually insert control rods, stabilize RPV pressure, and deliberately lower and control Reactor level.

Event 7: When initial scram actions are complete an RDCS failure results in the inability to drive control rod.

Objective: Evaluate the crew's response to a failure to drive rods. The crew is expected to reset RDSC and continue to drive rods.

Event 8: When Level has been intentionally lowered per T-117, Main Turbine bypass valves will fail closed.

Objective: Evaluate the crew's response to the failure of Bypass valves. The crew is expected to take control of pressure with SRVs, and place suppression pool cooling in service. Complicating the event will be a failure of the A RHR Suppression Pool Cooling Valve HV51-1F024A.

Termination Point: The scenario may be terminated when all control rods are inserted, reactor level is stabilized.

CRITICAL TASKS**1. T-101.5 Implement T-215 to insert control rods.**

Standard: Direct the performance of T-215 to operations personnel located outside the control room.

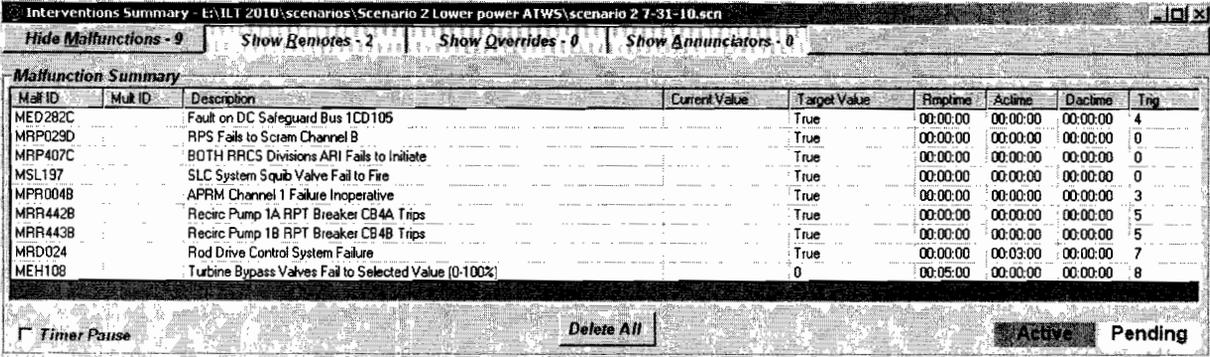
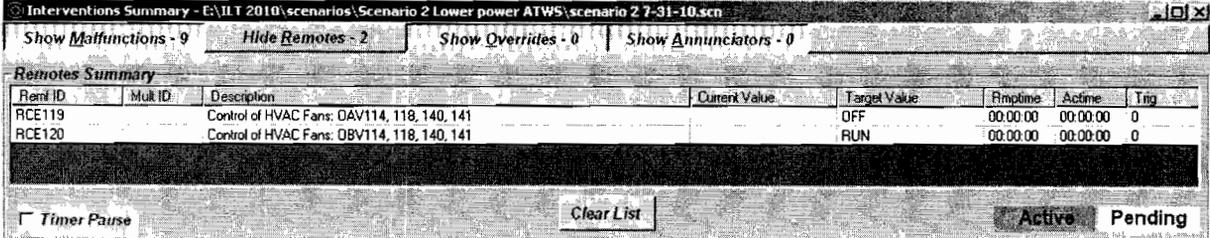
SAT/UNSAT

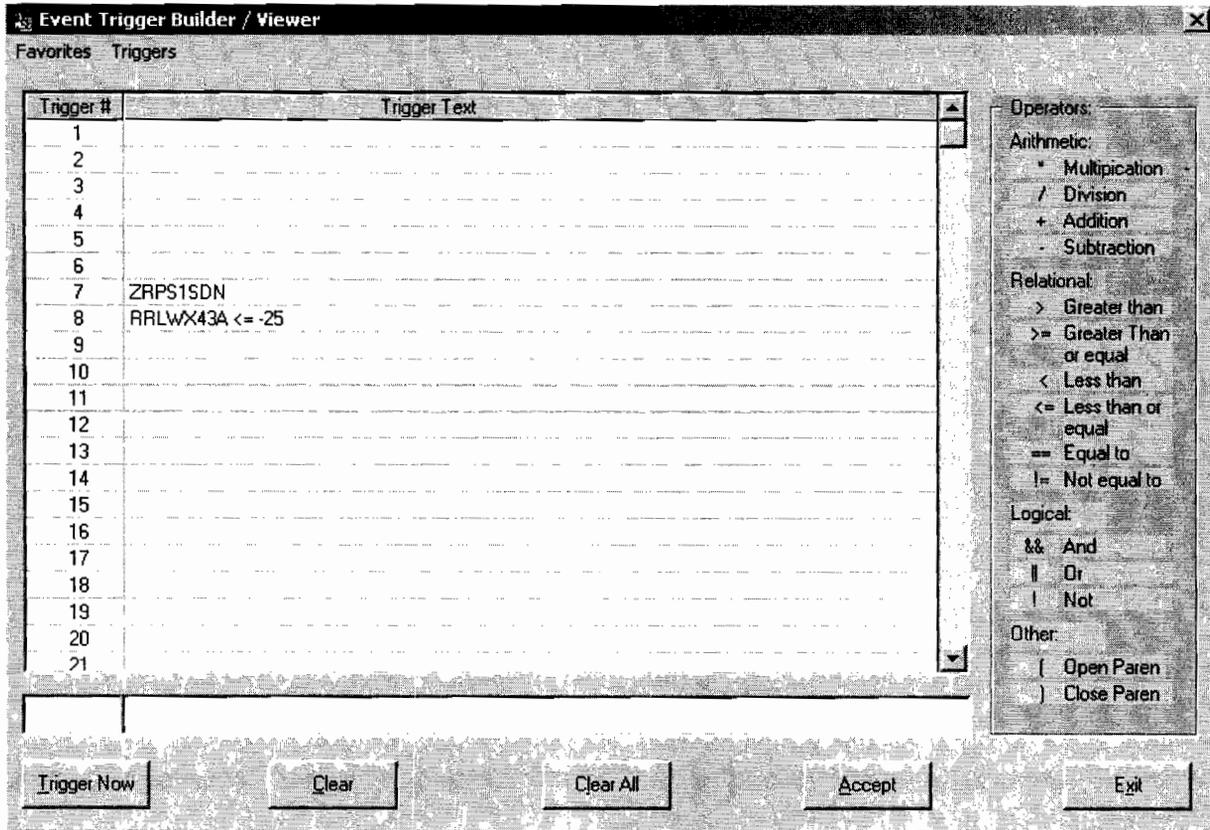
2. T-117.7 Terminate and prevent injection into the RPV.

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

SAT/UNSAT

INITIAL SIMULATOR SETUP

✓	ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION																																																																																										
	<ul style="list-style-type: none"> ■ Ensure materials for applicants: <ul style="list-style-type: none"> - Rod Pull Sheet with all applicable completed steps signed off - GP-2 with all applicable completed steps signed off - GP-2, App. 3 with all applicable completed steps signed off - S73.1.A 																																																																																										
	<ul style="list-style-type: none"> ■ Reset simulator to Preloaded Exam IC <u>OR</u> Reset to IC# 10 and perform the following: Load Scenario File <u>OR</u> Reset to IC# 10 <u>AND</u> Load items listed below: 																																																																																										
	<ul style="list-style-type: none"> ■ Ensure the following malfunctions are loaded:  <p>The screenshot shows a window titled "Interventions Summary - E:\ILT 2010\scenarios\Scenario 2 Lower power ATWS\scenario 2 7-31-10.scn". It has tabs for "Hide Malfunctions - 9", "Show Remotes - 2", "Show Overrides - 0", and "Show Annunciators - 0". Below the tabs is a "Malfunction Summary" table:</p> <table border="1"> <thead> <tr> <th>Mal ID</th> <th>Mult ID</th> <th>Description</th> <th>Current Value</th> <th>Target Value</th> <th>Rmptime</th> <th>Actime</th> <th>Dactime</th> <th>Trig</th> </tr> </thead> <tbody> <tr> <td>MED282C</td> <td></td> <td>Fault on DC Safeguard Bus 1CD105</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>4</td> </tr> <tr> <td>MRP029D</td> <td></td> <td>RPS Fails to Scram Channel B</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>0</td> </tr> <tr> <td>MRP407C</td> <td></td> <td>BOTH RRCS Divisions ARI Fails to Initiate</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>0</td> </tr> <tr> <td>MSL197</td> <td></td> <td>SLC System Squib Valve Fail to Fire</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>0</td> </tr> <tr> <td>MPR004B</td> <td></td> <td>APRM Channel 1 Failure Inoperative</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>3</td> </tr> <tr> <td>MRR442B</td> <td></td> <td>Recirc Pump 1A RPT Breaker CB4A Trips</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>5</td> </tr> <tr> <td>MRR443B</td> <td></td> <td>Recirc Pump 1B RPT Breaker CB4B Trips</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>5</td> </tr> <tr> <td>MRD024</td> <td></td> <td>Rod Drive Control System Failure</td> <td></td> <td>True</td> <td>00:00:00</td> <td>00:03:00</td> <td>00:00:00</td> <td>7</td> </tr> <tr> <td>MEH108</td> <td></td> <td>Turbine Bypass Valves Fail to Selected Value (0-100%)</td> <td>0</td> <td>0</td> <td>00:05:00</td> <td>00:00:00</td> <td>00:00:00</td> <td>8</td> </tr> </tbody> </table> <p>At the bottom of the window are buttons for "Timer Pause", "Delete All", "Active", and "Pending".</p>	Mal ID	Mult ID	Description	Current Value	Target Value	Rmptime	Actime	Dactime	Trig	MED282C		Fault on DC Safeguard Bus 1CD105		True	00:00:00	00:00:00	00:00:00	4	MRP029D		RPS Fails to Scram Channel B		True	00:00:00	00:00:00	00:00:00	0	MRP407C		BOTH RRCS Divisions ARI Fails to Initiate		True	00:00:00	00:00:00	00:00:00	0	MSL197		SLC System Squib Valve Fail to Fire		True	00:00:00	00:00:00	00:00:00	0	MPR004B		APRM Channel 1 Failure Inoperative		True	00:00:00	00:00:00	00:00:00	3	MRR442B		Recirc Pump 1A RPT Breaker CB4A Trips		True	00:00:00	00:00:00	00:00:00	5	MRR443B		Recirc Pump 1B RPT Breaker CB4B Trips		True	00:00:00	00:00:00	00:00:00	5	MRD024		Rod Drive Control System Failure		True	00:00:00	00:03:00	00:00:00	7	MEH108		Turbine Bypass Valves Fail to Selected Value (0-100%)	0	0	00:05:00	00:00:00	00:00:00	8
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	<ul style="list-style-type: none"> ■ Ensure the following overrides are loaded: N/A 																																																																																										

ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION	
✓	<p>■ Ensure the following triggers are built:</p>  <p>■ PRIOR TO START OF SCENARIO:</p> <ul style="list-style-type: none"> ● RESET APRM MEMORY <ol style="list-style-type: none"> 1. Select TRIP STATUS 2. RESET MEMORY ● ENSURE: "B" Control Enclosure Chiller, and Chilled Water Loop in Service "A" Control Enclosure Chiller in Standby ● ENSURE: Generator output breakers, 535 and 635, are green flagged ● Reset any annunciators that should not be present

INSTRUCTIONS FOR SIMULATOR OPERATOR

EVENT 1: Swap EHC pumps

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ When Contacted Report: -Pre-start checks are complete, 1B EHC pump is ready for start
	<ul style="list-style-type: none"> ■ After pump start, when contacted Report: - EHC pressure on PI-M2-*80B(A) is 1600 psig and steady - There is no abnormal noise or vibration
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate per S31.6.C

EVENT 2: Pull control rods per GP-2 in support of plant startup.

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 3: APRM Fails Inoperable

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ When contacted, Report - A Reactor Engineer is on the way to assist with troubleshooting and restoration activities.
	<ul style="list-style-type: none"> ■ 5 minutes after contacted Report: -APRM 1 indicating INOP, The Trip light is Lit
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 4: Loss of Div III DC

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate trigger 4
	<ul style="list-style-type: none"> ■ If asked to investigate loss of Div III DC, wait 5 minutes and report the main bus fuse has blown. Electrical Maintenance is continuing to investigate.
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 5: Recirc Pump 1A, and 1B RPT Breaker Trip

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate Trigger # 5
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 6: ATWS

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ T-214, 5 minutes, Toggle RTR10 and 11 on page T200, Report - T-214 is complete.
	<ul style="list-style-type: none"> ■ T-215, When contacted Report: <ul style="list-style-type: none"> - The door to 10C611 Bay "B" will not open. We've sent somebody out to obtain tools to take the door off. We'll call back when we're ready to pull the fuse. (NOTE: T-215 will be completed at end of scenario)
	<ul style="list-style-type: none"> ■ T-216, 7 minutes, Report: <ul style="list-style-type: none"> - T-216 has been unsuccessful due to a stuck valve. We are looking for another vent path.
	<ul style="list-style-type: none"> ■ T-251, 6 minutes, Report: <ul style="list-style-type: none"> - Verify HV-55-1F006 is closed then Toggle Remote Function RTR309 to OPEN
	<ul style="list-style-type: none"> ■ SLC Failure, 7 minutes, Report: <ul style="list-style-type: none"> - Electrical maintenance is troubleshooting the squib valves failure to fire.
	<ul style="list-style-type: none"> ■ T-270, 7 Minutes OR Immediately if pre-staged, <ul style="list-style-type: none"> -Toggle RTR-220 thru 227. OR - Load T-270 scenario file. ■ Report: <ul style="list-style-type: none"> - T-270 is complete in Aux Equip. room
	<ul style="list-style-type: none"> ■ T-212, When contacted, Report: <ul style="list-style-type: none"> - T-212 will take 30 minutes to complete.
	<ul style="list-style-type: none"> ■ T-212, When contacted, Report: <ul style="list-style-type: none"> - T-212 will take 30 minutes to complete.

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ T-215, When Rx level lowered to -50" per T-117 AT DIRECTION OF LEAD EVALUATOR Report: <ul style="list-style-type: none"> - Ready to pull scram solenoid fuses per T-215, expect rod motion. ■ DELETE MRP029D, Report: <ul style="list-style-type: none"> - T-215 is complete

EVENT 7: Rod Drive Control System Failure

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Ensure Activation of Trigger 7 (Mode switch to Shutdown)
	<ul style="list-style-type: none"> ■ When T-270, Terminate and Prevent is complete, DELETE malfunction MRD024, Report: <ul style="list-style-type: none"> -RDCS has been reset in the AER.
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 8: Turbine Bypass valves fail

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Ensure Activation of Trigger 8 (RX water level -25")
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

Time	Position	Applicant's Actions or Behavior
Op-Test No. <u>ILT09-1</u> Scenario No. <u>2</u> Event No.: <u>1</u>		
Event Description: <u>Swap EHC pumps</u>		
	BOP	Obtain a copy of S31.6.C, SWAPPING OPERATING EHC PUMPS
	BOP	Contact EO to perform EHC pump start preparations
	BOP	PLACE the control switch for the standby EHC pump *B(A)-P113 to "RUN."
	BOP	VERIFY the following: -EHC pressure on PI-M2-*80B(A) 1500 to 1700 psig -No abnormal noise or vibration
	BOP	WHEN on-coming pump has been running for 3 minutes, AND EHC pump operation is stable THEN PLACE the off-going *A(B)-P113 Control switch to "STOP" AND ALLOW to spring return to "AUTO".
	BOP	Direct EO to return PDI-031-*01B to service
	BOP	VERIFY "EHC System Standby Pump Running" AND "EHC System Standby Pump Not In Auto" alarms clear on *05 MAIN TURB.

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>2</u>	Event No.: <u>2</u>
Event Description: <u>Pull control rods per GP-2 in support of plant startup</u>			
Time	Position	Applicant's Actions or Behavior	
	SRO	Direct RO to continue rod pulls	
	RO	Continue Rod Pulls, Step #23, rod 10-11 at 00 and going to position 12	

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>2</u>	Event No.: <u>3</u>
Event Description: <u>APRM Fails Inoperable</u>			
Time	Position	Applicant's Actions or Behavior	
	RO	Recognize #1 APRM INOP	
	RO	Reference appropriate ARCs: <ul style="list-style-type: none"> • 108 REACTOR B-3, APRM Upscale Trip / Inop • 108 REACTOR F-3, Rod Out Block 	
	RO	Dispatch personnel to investigate	
	SRO	Direct RO to Bypass APRM # 1	
	RO	Bypass APRM # 1	
	SRO	Reference T.S. 3.3.6, and 3.3.7.5 Determine required number of APRMs remain operable	

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>2</u>	Event No.: <u>4</u>
Event Description: : <u>Loss of Div III DC</u>			
Time	Position	Applicant's Actions or Behavior	
	RO	Report Q/L/P	
	SRO RO BOP	Acknowledge Div III DC related alarms, and diagnose cause is Loss of Div II DC	
	SRO	Enter E-1FC, Loss Of Division III Safeguard 125 VDC Bus 1FC	
	BOP	Reference appropriate ARCs: <ul style="list-style-type: none"> • 004 VENT B-3, REAC ENCL LOW DELTA P/ LOSS OF POWER/ INOP • 121 D13 G-2, 1PPC1/1PPC3 125V VDC DIST PANELS UNDERVOLTAGE • 121 D13 G3, 1PPC2 125V DC DIST PANEL UNDERVOLTAGE 	
	BOP	Manually INITIATE Main Control Room Chlorine Isolation in accordance with S78.8.A, Manual Initiations Of Control Room Radition Or Chlorine/Toxic Chemical Isolation.	
	SRO	REFER TO GP-8, Primary and Secondary Containment Isolation Verification and Reset (Green Reset AND RESET MSIV Isolation Logic, as required.	
	BOP	Dispatch personnel to Investigate loss of power	
	BOP	Identify Loss of RWCU	
	BOP	Contact Chemistry to perform compensatory sampling of Reactor coolant conductivity	
	SRO	Identify The following can not be started OR tripped from MCR:	

Op-Test No. ILT09-1Scenario No. 2Event No.: 4Event Description: : Loss of Div III DC

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> • 0A MCR Chiller • 1A D/W Chiller • 1A CRD • 1C RHR • 1C Core Spray Pp
	SRO	Refer to Tech Specs. Identifies following affected LCOs: <ul style="list-style-type: none"> • 3.3.2 Table 3.3.2-1 • 3.3.3.c • 3.5.1.a • 3.5.1.b • 3.8.3.1 • TRM 3.4.4

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>2</u>	Event No.: <u>5</u>
Event Description: <u>Recirc Pump 1A, and 1B RPT Breaker Trip</u>			
Time	Position	Applicant's Actions or Behavior	
	RO	Report Q/L/P	
	RO BOP	Recognize trip of 1A and 1B Recirc Pumps	
	SRO	Enter OT-112	
	SRO RO BOP	Recognize Scram is required due to trip of both Recirc Pumps trip.	
	RO	Place Mode Switch in SHUTDOWN	
	RO	Insert SRM's and IRM's	
	SRO	Enter T-101	

Op-Test No. ILT09-1Scenario No. 2Event No.: 6Event Description: ATWS

Time	Position	Applicant's Actions or Behavior
	RO	Recognize rods failed to insert (B RPS) with scram valves closed
	RO	Manually initiate RRCS
	RO	Recognize ARI failure
	SRO	Implement TAR
	SRO	Direct T-213
	SRO	Direct T-215
	SRO	Direct T-216
	BOP	Inhibit Auto ADS
	RO	Recognize SLC failure to inject to RPV
	RO	Secure SLC Pumps
	SRO	Direct T-212
	SRO	Direct T-221
	SRO	Enter T-117
	BOP RO	Perform T-270 in the MCR
	BOP	Direct T-270 in AER
	RO	Lower RPV level to < -50" <i>How?</i>
	RO	Maintain RPV level above TAF

Op-Test No. ILT09-1Scenario No. 2Event No.: 6Event Description: ATWS

Time	Position	Applicant's Actions or Behavior
	SRO	Enter T-102 on High Suppression Pool temperature
	BOP	Place RHR in Suppression Pool Cooling
	RO	Recognize T-215 successful and all rods in
	SRO	Exit T-117 and Re-Enter T-101 Level Control Leg
	SRO	Direct Restoration of Reactor level to 12.5" to 54"
	RO	Restore Level to Normal Band
	SRO	Direct Controlled Cooldown
	BOP	Commence Controlled Cooldown

Op-Test No. ILT09-1Scenario No. 2Event No.: 7Event Description: Rod Drive Control System Failure

Time	Position	Applicant's Actions or Behavior
	RO	Recognize inability to drive rods
	RO	Reference ARC: 108 REACTOR, E-4 RDCS Inoperative
	RO	Recognize failure of RDCS
	RO	Dispatch operator to reset RDCS
	RO	Recognize reset of RDCS and continue rod insertion

Op-Test No. ILT09-1Scenario No. 2Event No.: 8Event Description: Turbine Bypass valves fail

Time	Position	Applicant's Actions or Behavior
	SRO RO BOP	Recognize EHC not controlling pressure
	SRO	Direct BOP to control Reactor pressure with SRVs
	BOP	Stabilize Reactor pressure with SRV's
	RO	Control Feedwater injection to maintain level <-50"
<p>TERMINATE THE SCENARIO ALL THE FOLLOWING ARE MET:</p> <ul style="list-style-type: none"> ■ All control rods are inserted ■ Reactor water level is stabilized. 		

PREBRIEF INSTRUCTIONS

Reactor Power is 19%, Unit 2 100% power

Turnover:

- Unit 1 is in OPCON 1, Reactor Power is approximately 19%
- GP-2, Normal Plant Startup is in progress and complete through step 3.4.25.
- Rod Move Sheet sequence step #22, Group 5 is complete, Step #23 is in progress, with rod 10-11 at 00 and going to position 12
- GP-2, App. 3, Startup of the Main Turbine is in progress and complete through step 3.3.7
- All MCR annunciators in alarm are understood and expected due to present plant condition.
- "1B" RFP is in AUTO through the 108B
- Both recirc pumps are operating at 28% speed
- "1A" and "1B" Condensate pumps are in service
- "1B" and "1C" Circ water pumps are in service
- RWCU is in service with "1A" pump and both F/Ds
- "1B" DW Chiller in service
- All ECCS are operable
- All available Deep Bed Demins are in service
- 4 Condensate Filter Demins are in service

Inoperable/Out of Service Equipment and ETR

- 1A EHC pump needs to be removed from service before Startup continues

Planned Evolutions:

- Swap EHC pumps from 1A to 1B per S31.6.C, Swapping operating EHC Pumps, prior to continuing control rod withdrawal.
- Continue with GP-2, and GP-2, App. 3 activities in support of plant startup.
- Regulatory Action Log has been reviewed and no equipment is known to be INOP which would affect continuing the startup.

SCENARIO SUMMARY

Event 1: Shift orders are to open Outboard MSIV HV-41-1F028A

Objective: Evaluate the crew's ability to open Outboard MSIV HV-41-1F028A

Event 2: Once HV-41-1F028A is open the crew is expected to raise power to 100% to perform turbine valve testing. The RO will raise reactor power using recirc flow.

Objective: Evaluate the crew's ability to raise reactor power

Event 3: Shortly after the crew assumes responsibility, the 1B Reactor Recirc Pump shaft shears.

Objective: Evaluate the crew's ability to diagnose the Recirc Pump shaft shear and take action to shutdown the pump and stabilize power outside of the exclusion region IAW OT-112, Recirculation Pump Trip.

Event 4: After the crew responds to Recirculation Pump Trip and T.S. is referenced, the "1A" TECW pump will trip. The crew is expected to enter ON-117, and start the "1B" TECW pump.

Objective: Evaluate the crew's ability to mitigate the loss of TECW including monitoring temperatures, and restoring TECW.

Event 5: After the 1B TECW pump is started, the "1A" RWCU pump suction will clog resulting in low flow condition coupled with hi vibrations, resulting in the need to trip the pump.

Objective Evaluate the crew's ability to recognize low flow and track vibration levels on the RWCU pump, identify that a pump trip should have occurred and trip the pump, contact chemistry to perform compensatory sampling and reference T.R.M 3.4.4.

Event 6: Once the "1A" RWCU pump has been tripped, an unisolable steam leak will occur in the HPCI Room which will eventually result in the need to perform a T-103 shutdown, and 2 areas exceeding MSO and a T-112 Emergency Blowdown. Complicating the event will be a failure of RPS to Scram the Reactor, requiring use of ARI.

Objective: Evaluate the crew's response to take actions per T-103, Secondary Containment Control, due to the elevated room temperatures, T-101 RPV Control, and T-112 Emergency Blowdown.

Event 7: Once the crew attempts to perform a T-103 shutdown, a failure of RPS to Scram the Reactor will occur.

Objective: Evaluate the crew's response to a failure of RPS to Scram the Reactor, and take actions to scram using ARI. Additionally, the crew will have to take manual control of Feedwater, as Scram profile will not activate due to the failure of RPS.

Event 8: During the Scram the "A" RFP Steam Supply Valve will fail to operate on HP steam (when the Main Turbine is tripped). This malfunction will result in the crew having to control RPV level without Startup Level Control.

Objective: Evaluate the crew's response to take actions for controlling level without the use of Startup Level Control.

Event 9: During the blowdown the "E" SRV will fail closed requiring the crew to open non-ADS SRV.

Objective: Evaluate the crew's response to take actions for successful completion of T-112 Emergency Blowdown

Termination Point: The scenario may be terminated when 5 SRVs are opened, and reactor water level is stabilized.

CRITICAL TASKS**1. T-103.1 Direct performance of T-290**

Standard: Direct performance of T-290 to operations personnel located outside the control room.

SAT / UNSAT**2. T-103.2 Manually scram the reactor**

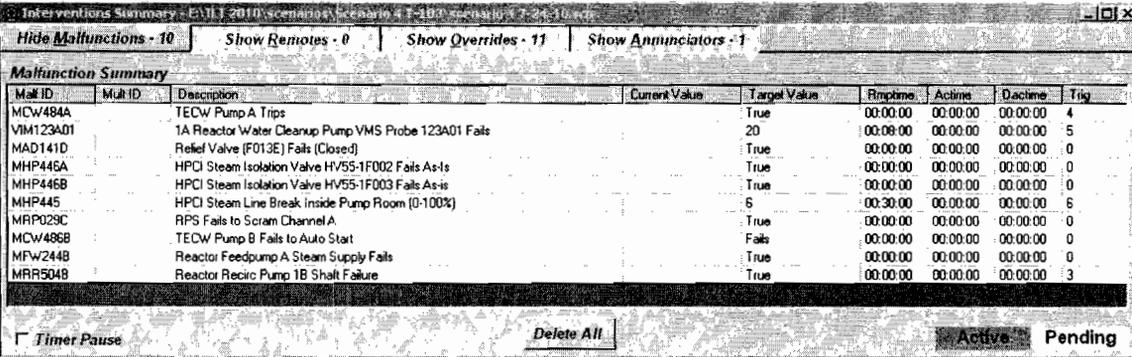
Standard: After it is determined that one are in Table SCC-2 has exceeded max safe op value, manually scram the reactor

SAT / UNSAT**3. T-103.3 Perform Emergency Blowdown per T-112**

Standard: After it is determined that two areas in Table SCC-2 have exceeded Max Safe Operating values and a primary system is still discharging into secondary containment, open 5 ADS valves.

SAT / UNSAT

INITIAL SIMULATOR SETUP

✓	ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION
	<ul style="list-style-type: none"> ■ Ensure materials for applicants: <ul style="list-style-type: none"> - REMA to support: - Withdrawal of Control Rod 30-31, and direction to increase power to 100% - ST-6-107-730-1, Control Rod Coupling Check
	<ul style="list-style-type: none"> ■ Reset simulator to Scenario IC or IC-17 and perform the following: <ul style="list-style-type: none"> - Lower power to 75% using Recirc, and INSERT control rod 30-31 to 00 - Ensure the following RCIC valves are closed with INFO Tags: <ul style="list-style-type: none"> RCIC Outboard Steam Supply Valve HV49-1F008 (close with key) RCIC Steam Line Warm-up Bypass Valve HV49-1F076 RCIC Turbine Steam Valve HV49-1F045 RCIC Turbine Trip/Throttle Valve HV49-112 RCIC Turbine Exhaust Valve HV49-1F060 (close with key) - Hang info tag on HV49-1F060 - Place RCIC Flow Controller M/A Station in MANUAL and close -Close the Inboard MSIV HV-41-1F022A
	<ul style="list-style-type: none"> ■ Ensure the following malfunctions are loaded:  <ul style="list-style-type: none"> ■ Ensure the following remote functions are loaded: <p style="margin-left: 40px;">N/A</p>

✓	<p>ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION</p>																																																																																																																					
	<ul style="list-style-type: none"> ■ Ensure the following overrides are loaded: <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="font-size: small;">Interventions Summary - E:\ILT 2010\scenarios\Scenario 4 T-103\scenario 4 8-12-10.scn</p> <p style="font-size: x-small;"> Show Malfunctions - 10 Show Remotes - 0 Hide Overrides - 10 Show Annunciators - 1 </p> <p style="font-size: x-small;">Override Summary</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>TagID</th> <th>Description</th> <th>Position / Target</th> <th>Actual Value</th> <th>Override Value</th> <th>Brplime</th> <th>Actime</th> <th>Deactime</th> <th>Trig</th> </tr> </thead> <tbody> <tr><td>HS49-1F008</td><td>HV49-1F008, RCIC Strm Line Isolation Valve Ind Lamps</td><td></td><td></td><td>ALLOFF</td><td></td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>HS49-1F076</td><td>HV49-1F076, RCIC Steam Warmup Bypass Vlv Ind Lamps</td><td></td><td></td><td>ALLOFF</td><td></td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>HS50-1F045</td><td>HV50-1F045, RCIC Turbine Steam Supply Vlv Ind Lamps</td><td></td><td></td><td>ALLOFF</td><td></td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>HV50-112-TRII</td><td>HV50-112, RCIC Turbine Trip Valve Ind Lamps</td><td></td><td></td><td>ALLOFF</td><td></td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>HV50-112-THI</td><td>HV50-112, RCIC Turbine Throttle Valve Ind Lamps</td><td></td><td></td><td>ALLOFF</td><td></td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>RCIC-GOV</td><td>RCIC Governor Valve Ind Lamps</td><td></td><td></td><td>ALLOFF</td><td></td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>HS49-1F060</td><td>HV50-1F060, RCIC Turbine Exhaust Valve Ind Lamps</td><td></td><td></td><td>ALLOFF</td><td></td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>FI44-1R609</td><td>RWCU System Inlet Flow Indication</td><td></td><td></td><td>50</td><td>00:03:00</td><td>00:00:00</td><td>00:00:00</td><td>5</td></tr> <tr><td>FI45-1R605A</td><td>RWCU 1A Filter / Demin Flow Indication</td><td></td><td></td><td>17.5</td><td>00:03:00</td><td>00:00:00</td><td>00:00:00</td><td>5</td></tr> <tr><td>FI45-1R605B</td><td>RWCU 1B Filter / Demin Flow Indication</td><td></td><td></td><td>15</td><td>00:03:00</td><td>00:00:00</td><td>00:00:00</td><td>5</td></tr> </tbody> </table> <p style="font-size: x-small; margin-top: 5px;"> <input type="checkbox"/> Timer Pause Delete All Active Pending </p> </div> <ul style="list-style-type: none"> ■ Ensure the following Annuciators are loaded <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="font-size: small;">Interventions Summary - E:\ILT 2010\scenarios\Scenario 4 T-103\scenario 4 7-24-10.scn</p> <p style="font-size: x-small;"> Show Malfunctions - 10 Show Remotes - 0 Show Overrides - 11 Hide Annunciators - 1 </p> <p style="font-size: x-small;">Annuciator Summary</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Window</th> <th>Description</th> <th>Tagname</th> <th>Override Type</th> <th>OVal</th> <th>AVa</th> <th>Actime</th> <th>Deactime</th> <th>Trig</th> </tr> </thead> <tbody> <tr> <td>H1</td> <td>RWCU Pump Suction Lo Flow</td> <td>112 CLEAN UP H1</td> <td>ON</td> <td></td> <td></td> <td>00:02:30</td> <td>00:00:00</td> <td>5</td> </tr> </tbody> </table> <p style="font-size: x-small; margin-top: 5px;"> <input type="checkbox"/> Timer Pause Delete All Active Pending </p> </div> <ul style="list-style-type: none"> ■ Ensure the following triggers are built: N/A (all trigger a manual) <ul style="list-style-type: none"> ■ Take out of FREEZE and ensure the following: Reactor Power is 75% <ul style="list-style-type: none"> ■ Reset any annunciators that should not be present 	TagID	Description	Position / Target	Actual Value	Override Value	Brplime	Actime	Deactime	Trig	HS49-1F008	HV49-1F008, RCIC Strm Line Isolation Valve Ind Lamps			ALLOFF		00:00:00	00:00:00	0	HS49-1F076	HV49-1F076, RCIC Steam Warmup Bypass Vlv Ind Lamps			ALLOFF		00:00:00	00:00:00	0	HS50-1F045	HV50-1F045, RCIC Turbine Steam Supply Vlv Ind Lamps			ALLOFF		00:00:00	00:00:00	0	HV50-112-TRII	HV50-112, RCIC Turbine Trip Valve Ind Lamps			ALLOFF		00:00:00	00:00:00	0	HV50-112-THI	HV50-112, RCIC Turbine Throttle Valve Ind Lamps			ALLOFF		00:00:00	00:00:00	0	RCIC-GOV	RCIC Governor Valve Ind Lamps			ALLOFF		00:00:00	00:00:00	0	HS49-1F060	HV50-1F060, RCIC Turbine Exhaust Valve Ind Lamps			ALLOFF		00:00:00	00:00:00	0	FI44-1R609	RWCU System Inlet Flow Indication			50	00:03:00	00:00:00	00:00:00	5	FI45-1R605A	RWCU 1A Filter / Demin Flow Indication			17.5	00:03:00	00:00:00	00:00:00	5	FI45-1R605B	RWCU 1B Filter / Demin Flow Indication			15	00:03:00	00:00:00	00:00:00	5	Window	Description	Tagname	Override Type	OVal	AVa	Actime	Deactime	Trig	H1	RWCU Pump Suction Lo Flow	112 CLEAN UP H1	ON			00:02:30	00:00:00	5
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INSTRUCTIONS FOR SIMULATOR OPERATOR**EVENT 1 Open Outboard MSIV HV-41-1F028A**

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 2: Raise Reactor power to 100%

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 3: 1B Reactor Recirc Pump Shaft Shear

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate trigger 3
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 4: 1A TECW Pump Trip

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate trigger 4
	<ul style="list-style-type: none"> ■ 3 minutes, Report: <ul style="list-style-type: none"> – The molded-case breaker for the “1A” TECW Pump has tripped. There is no apparent cause for the “1B” TECW Pump failure to auto start. Electrical maintenance has been called on both issues.
	<ul style="list-style-type: none"> ■ 1B TECW Pump Start preparations, 3 minutes, Report: <ul style="list-style-type: none"> -“1B” TECW pump is ready for start
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 5: RWCU pump low flow and vibration

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate trigger 5
	<ul style="list-style-type: none"> ■ When RWCU pump is tripped, DELETE: <ul style="list-style-type: none"> • MALF VIM123A01 • Override on RWCU flow indication • ANN 112, H1
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 6: Unisolable Steam Leak in the HPCI Room

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate Trigger 6
	<ul style="list-style-type: none"> ■ Fire Alarm, when dispatched, Report: -This is the Fire Brigade Leader and I am responding to the fire alarm code."
	INSTRUCTOR NOTE: Use OCOEE IS display for all temperature and steam flooding damper panel reports.
	<ul style="list-style-type: none"> ■ 1BC208 RE HVAC TROUBLE, 5 minutes, Report: <ul style="list-style-type: none"> - HPCI room temperature indications is _____ °F and both unit coolers are running Note: Must be above 120°F and no higher than 160°F (top of scale).
	<ul style="list-style-type: none"> ■ T-290, 6 minutes, Report: <ul style="list-style-type: none"> -Give T-290 readings as requested from OCOEE T-103 Temperature values from instructor terminal. -Subsequent reports will be per the instructions of the CRS.
	<ul style="list-style-type: none"> ■ Fire Brigade, 6 minutes, But after T-290 call out, Report: <ul style="list-style-type: none"> - The HPCI room door is hot and it sounds like there is a steam leak in the room.
	<ul style="list-style-type: none"> ■ 10C234 Stm Flood Damper Panel, 5 minutes, Report: <ul style="list-style-type: none"> - Steam Flooding dampers on 10C234 indicate closed.
	<ul style="list-style-type: none"> ■ HPCI Isolation Valves, 10 minutes, Report: <ul style="list-style-type: none"> - We are unable to close the valves from the MCC breakers. Electrical maintenance has been contacted for troubleshooting.
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate

EVENT 7: RPS Failure**"A" RFP Steam Supply Valve Fails**

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	■ Respond to request for assistance as appropriate

EVENT 8: "A" RFP Steam Supply Valve Fails

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	■ Respond to request for assistance as appropriate

EVENT 9: "E" SRV fails closed

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	■ Respond to request for assistance as appropriate

Op-Test No.: 1 Scenario No.: 4 Event No.: 1Event Description: Open Outboard MSIV HV-41-1F028A

22A?

Time	Position	Applicant's Actions or Behavior
	BOP	INFORM HP that the valves listed in step 4.3.2 will be operated AND another steam flow path is being established.
	BOP	ENSURE alignment of the following Main Steam System valves at panel 10C601: <ul style="list-style-type: none"> HV-C-41-1F020, OPEN HV-41-142, OPEN HV-41-143, OPEN
	BOP	ALIGN the following Main Steam System valves to drain condensate from upstream AND downstream piping around outboard MSIV at panel 10C601: <ul style="list-style-type: none"> HV-41-1F016, OPEN HV-41-1F019, OPEN HV-41-1F021, OPEN
	BOP	OPEN HV-01-*04, "Main Steam Line Startup Drain" (STARTUP DRAIN), at panel 10C653. NOTE: Evaluator may prompt operator that: Ten minutes have passed
	RO	DEPRESS white "Single" pushbutton on LIC M1 *R600, "Reactor Level Controller" (MASTER, LV), at panel 10C603 to place DFWLC I Single-Element Control
	RO	VERIFY white "Single" pushbutton is lit on LIC M1 *R600, "Reactor Level Controller" (MASTER, LV), at panel *0C603
	BOP	Mark steps associated with MSIV Test Mode N/A
	BOP	OPEN HV-41-1F022A, "Inboard MSIV," at panel 10C601.

Op-Test No.: 1 Scenario No.: 4 Event No.: 1Event Description: Open Outboard MSIV HV-41-1F028A

Time	Position	Applicant's Actions or Behavior
	BOP	ALIGN THE FOLLOWING MAIN STEAM SYSTEM DRAIN VALVES, AT PANEL 10C601: <ul style="list-style-type: none"> • HV-41-*F016, closed • HV-41-*F019, closed • HV-41-*F021, closed
	BOP	CLOSE HV-01-104, "Main Steam Line Startup Drain" (STARTUP DRAIN), at panel 10C653.
	BOP	DEPRESS white "Three" pushbutton on LIC M1 *R600, "Reactor Level Controller" (MASTER, LV), at panel 10C603 to return DFWLC to Three-Element Control
	BOP	VERIFY white "Three" pushbutton is lit on LIC M1 *R600, "Reactor Level Controller" (MASTER, LV), at panel *0C603.

Op-Test No.: <u> 1 </u> Scenario No.: <u> 4 </u>		Event No.: <u> 2 </u>
Event Description: <u>Raise power to 100%</u>		
Time	Position	Applicant's Actions or Behavior
	SRO	Direct Power to raise power to 100% IAW REMA: <ul style="list-style-type: none"> • Withdrawal Control Rod 30-31 • Raise power to 100%
<p>Evaluator NOTE:</p> <p>IF RBM Upscale Alarm is received: 108 Reactor D-3, RBM UPSCALEINOPERATIVE</p> <p>Report the following:</p> <ul style="list-style-type: none"> • Reactor Engineering directs taking Rod Select Key to "NO ROD SELECTED" to reset RBM 		
	RO	Withdrawal Control Rod 30-31, and perform Coupling Check
	BOP	Inform PSD and Reactor Engineering of planned load increase to 100% power. Obtain RE support for Rx power ascension to desired power level.
	SRO	REQUEST a P-1 edit AND VERIFY the following for the applicable Recirc loop operation configuration.
	SRO BOP RO	COMPARE Core Megawatts Thermal (CMWT), Generator Mwe, AND Main Turbine first stage pressure to ensure values provide consistent indications of Rx power.
	RO	MAINTAIN Recirc Pump *A(B)P201 speed \leq 1650 rpm].
	SRO BOP RO	LIMIT subsequent rises in Rx power to a maximum increment of 50 MWe AND MAINTAIN FRP < 0.95 for two Recirc loop operation.

Op-Test No.: <u> 1 </u> Scenario No.: <u> 4 </u>		Event No.: <u> 3 </u>
Event Description: <u>Reactor Recirc Pump 1B Shaft Shear</u>		
Time	Position	Applicant's Actions or Behavior
	RO	Report Q/L/P, Observe power drop
	RO	Observe RPV level swell
	SRO	Enter OT-110 and OT-104
	BOP	Observe Loop B jet pump flow decrease to zero and then increase on reverse flow. 1B RRP indicated speed will increase to 100% and then return to the initial speed value.
	BOP	Determine that RRP 1B is not pumping.
	SRO	Directs shutdown of 1B RRP.
	BOP	TRIP M-G Set Drive Motor breaker.
	SRO	Enter OT-112, Recirculation Pump Trip
	BOP	CLOSE HV-043-*F031B, "B Recirc Pump Disch Vlv" (DISCHARGE OR HV-43-*F023B, "B Recirc Pump Suction Vlv" (SUCTION), for tripped Recirc Pump.
	SRO	Per OT-112, Recirculation Pump Trip: Identify correct Power/Flow Map for given plant conditions. (ATTACHMENT 1 ,All Feedwater Heaters In Service), and determine operating in the restricted region.
	SRO	Direct RO to drive Rod ^S to exit RESTRICTED REGION of Power/Flow Map ^A
	RO	Drive Rod ^S to exit RESTRICTED REGION of Power/Flow Map ^A
	SRO	Reference T.S. 3.4.1.1
	BOP	After 5 minutes has elapsed OPEN HV-043-*F031), "B Recirc Pump Disch Vlv" (DISCHARGE B) OR HV-43-*F023B, "B Recirc Pump Suction Vlv" (SUCTION B), for tripped Recirc Pump.
	BOP	Dispatch personnel to INVESTIGATE cause of Recirc Pump trip.

Op-Test No. <u>ILT09-1</u>			Scenario No. <u>4</u>			Event No.: <u>4</u>		
Event Description: <u>1A TECW Pump Trip</u>								
Time	Position	Applicant's Actions or Behavior						
	BOP	Recognize trip of 1A TECW pump						
	BOP	Reference appropriate ARCs: <ul style="list-style-type: none"> • 118 G-1, 1A Turb Encl Cooling Water Pump Ovid Trip • 118 G-3, Turb Encl Cooling Water Htx Out Lo Press • 118 A/B/C-1, * Air Compressor Trouble • 118 A/B/C-3, * Air Compressor Aftercooler Hi Temp 						
	SRO	Enter ON-117						
	BOP	Dispatch Personnel to monitor Air Compressor temperatures						
	BOP	Recognize Failure of 1B TECW pump to auto start						
	BOP	Start 1B TECW pump						
	BOP	After starting 1B TECW pump, follow up with S14.6.A Placing Alternate TECW Pump in Service						
	BOP	Dispatch personnel to investigate Trip of 1A TECW pump						
	BOP	Dispatch personnel to investigate failure of 1B TECW pump to auto start						

Op-Test No. ILT09-1Scenario No. 4Event No.: 5Event Description: RWCU pump low flow and vibration

Time	Position	Applicant's Actions or Behavior
	BOP	Reference appropriate ARC's <ul style="list-style-type: none"> • 107 C3, VIBRATION ALARM ALERT • 107 I3, VIBRATION ALARM DANGER • 112 H1, RWCU PUMP SUCTION LO FLOW • 112 G1, RWCU DISCHARGE HI/LO PRESS
	BOP	Recognize "1A" RWCU pump Low Flow should have resulted in a pump trip
	BOP	Trip "1A" RWCU pump
	SRO	Direct shutdown of RWCU
	BOP	Notify Chemistry to conduct alternate sampling of coolant activity
	SRO	Reference T.R.M. 3.4.4

Op-Test No. ILT09-1Scenario No. 4Event No.: 6Event Description: : Unisolable Steam Leak in the HPCI Room

Time	Position	Applicant's Actions or Behavior
	BOP	Enter SE-8 and dispatch Fire Brigade Leader
	BOP	Reference appropriate ARC's 004 A3 B Reac Encl HVAC PNL 1BC208 Trouble 117 A1 HPCI OUT of Service 107 G5 Div 2 Steam Leak Det Sys Hi Temp / Trouble
	SRO	Enter T-103
	SRO	Direct use of PAMS, FZ and EQ PMS only
	SRO	Direct performance of T-290
	BOP	Perform T-291
	BOP	Evacuate personnel from affected areas per SE-8, or SE-24
	BOP	Investigate 1BC208 Trouble alarm
	BOP	Inform Fire Brigade of possible steam leak in HPCI Room
	BOP	Attempt to isolate HPCI per T-250
	BOP	Dispatch Personnel to attempt to isolate HPCI isolation valves remotely from the MCC
	SRO	Recognize HPCI temperature cannot be maintained below MSO
	SRO RO BOP	Perform T-103 Shutdown
	BOP	Transfer House Loads

Op-Test No. ILT09-1Scenario No. 4Event No.: 6 , 7, 8, 9Event Description: : Unisolable Steam Leak in the HPCI Room

Time	Position	Applicant's Actions or Behavior
	BPO	Runback Recirc to minimum
	RO	Scram the Reactor
	RO	Place mode switch in SHUTDOWN * 6
	RO	Recognize Failure of "A" RPS (see event 6 7)
	RO	Recognize Scram Profile and automatic transfer to Startup Level control will not occur
	RO	Recognize Failure of A RFP and control Level Manually using RFPs and Condensate
	SRO	Implement TAR
	SRO	Enter and execute T-101
	RO	Insert SRMs/IRMs
	RO	Ensure Turbine Trip/Generator Lockout
	RO BOP	Reduce RPV pressure within allowable C/D rate
	BPO	Investigate 10C234 Steam Flooding Damper Alarm
	SRO	Re-enter T-103 as required
	SRO	Re-direct T-290 and T-291 as required
	SRO	Recognize 2 nd Area (309 room) temperature at MNO and track to MSO
	SRO	Direct T-112 Blowdown when MSO Temperature is exceeded in two areas
	BOP	Open 5 ADS Valves

Insert event # 9 action

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>4</u>	Event No.: <u>6</u> ^{7,8,9}
Event Description: : <u>Unisolable Steam Leak in the HPCI Room</u>			
Time	Position	Applicant's Actions or Behavior	
Op-Test No. <u>ILT09-1</u>		Scenario No. <u>4</u>	Event No.: <u>7</u>
Event Description <u>RPS Failure</u>			
Time	Position	Applicant's Actions or Behavior	
	RO	Recognize Failure of "A" RPS	
	RO	Initiate RRCS	
	RO	Recognize ARI was successful	

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>4</u>	Event No.: <u>8</u>
Event Description: <u>"A" RFP Steam Supply Valve Fails</u>			
Time	Position	Applicant's Actions or Behavior	
	RO	Recognize failure of "A" RFP HP Steam Supply Valve to open	
	RO	Take manual control of "B" or "C" RFP to control Level	

Op-Test No. ILT09-1Scenario No. 4Event No.: 9Event Description: "E" SRV fails closed

Time	Position	Applicant's Actions or Behavior
	BOP	Recognize failure of "E" SRV to open, and report failure to CRS
	SRO	Direct BOP to open a non-ADS SRV
	BOP	Open a non-ADS SRV

TERMINATE THE SCENARIO WHEN ALL THE FOLLOWING ARE MET:

- 5 SRVs are opened
- AND
- Reactor Water Level is stabilized.

Handwritten notes and signatures:

- A large bracket on the right side of the table, spanning the three rows, with a checkmark and the word "Above" written next to it.
- Handwritten initials "AC" and "HT" in the bottom right corner of the table area.

PREBRIEF INSTRUCTIONS

Initial Conditions:

Unit 1 at 79% power. Unit 2 is at 100% power.

Turnover:

Inoperable/Out of Service Equipment and ETR

- Inboard MSIV HV-41-1F022A inadvertently closed due to an Electrical Fault
 - Repairs complete on HV-41-1F022A

- RCIC is Out of Service for repairs to the RCIC Trip Throttle Valve, HV-50-112.
 - Repairs are expected to take 24 hours

Planned Evolutions:

- Open the MSIV HV-41-1F022A per S41.3.B
- Raise power to 100% power per GP-5, Attachment 1. The RE is not in the control room.

SCENARIO SUMMARY

- Event 1: The crew is directed to perform a quick start of HPCI per S55.1.D
- Objective: Evaluate the crew's ability to start HPCI and place in Full Flow test
- Event 2: When HPCI is in Full Flow test , it will experience a flow controller failure.
- Objective: Evaluate the crew's ability to secure HPIC due to a malfunction and place it in a safe configuration. In addition, Tech Spec 's should be referenced in order to determine the applicable LCO.
- Event 3: Once Tech Specs have been referenced and the appropriate action determined for HPCI, an isolation of the 1C FW Heater string results in Feedwater temperature excursion and power rise..
- Objective: Evaluate the crew's response to the feedwater heater string isolation and implementation of OT-104.
- Event 4: When actions for the abnormal event are complete and power is being reduced, Excess Flow check valve fails resulting in an inadvertent Div 1 LOCA Signal.
- Objective: Determine the crew's ability to diagnose and respond to an inadvertent LOCA signal. Complicating the event will be a failure of D11 EDG to auto start.
- Event 5: When actions for LOCA signal are complete, an unisolable leak will occur in RWCU Regen Heat Exchanger Room.
- Objective: To determine the crews ability to take appropriate actions per T-103 and SE-8. Track and trend RWCU room temperatures and attempt to isolate the leak and perform a T-103 Rx Shutdown.

Event 6: When actions for T-103 are complete and the Rx has been S/D and stabilized, a leak will develop in the Drywell progressing to a 3% LOCA. Complicating the event will be a failure of the A RHR pump and B RHR spray valves.

Objective: To determine the crew's ability to take appropriate actions per OT-101, T-101, and T-102. Track Containment parameters and perform an Emergency Blowdown per T-112 due to PSP.

Event 7: After the shutdown the, "C" RHR pump and "B" Core Spray pump will fail to auto start.

Objective: To determine the crews ability to respond to a failure of Emergency Core Cooling System pumps to start during a LOCA, and take action to manually start the pumps.

Event 8: When the LOCA has occurred, HV-51-1F021A Drywell Spray Valve fails closed and "1B" RHR pump will trip.

Objective: To determine the crew's ability to take appropriate actions to spray the drywell with RHRSW.

Termination Point: The scenario may be terminated when a T-103, Rx Shutdown has been accomplished, An Emergency Blowdown is complete, and Containment Spray is in service.

CRITICAL TASKS**1. T-103.2 Manually scram the reactor.**

Standard: After it is determined that one area in Table SCC-2 has exceeded max safe op value, manually scram the reactor.

SAT/UNSAT**2. T-102.2 Perform emergency blowdown per T-112.**

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

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

INITIAL SIMULATOR SETUP

✓	ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION																																																																																																																																							
	<ul style="list-style-type: none"> ■ Ensure materials for applicants: <ul style="list-style-type: none"> - Provide crew with working copy of S49.1.D 																																																																																																																																							
	<ul style="list-style-type: none"> ■ Reset simulator to Scenario IC or and perform the following: <ul style="list-style-type: none"> - 100% Power - Place "1A" RHR is Suppression Pool Cooling AND <ul style="list-style-type: none"> - Load scenario OR Perform the following: 																																																																																																																																							
	<ul style="list-style-type: none"> ■ Ensure the following malfunctions are loaded: <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p style="font-size: small; margin: 0;">Interventions Summary - E:\ILT 2010\scenarios\Scenario 5 F-103 and T-102\scenario 5 8-1-10.scn</p> <p style="font-size: x-small; margin: 0;">Hide Malfunctions - 14 Show Remotes - 0 Show Overrides - 0 Show Annunciators - 0</p> <p style="font-size: x-small; margin: 0;">Malfunction Summary</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Mal ID</th> <th>Mal ID</th> <th>Description</th> <th>Current Value</th> <th>Target Value</th> <th>Runtime</th> <th>Active</th> <th>Deactive</th> <th>Trig</th> </tr> </thead> <tbody> <tr><td>MHP4488</td><td></td><td>HPCI Speed / Flow Controller FIC55-1R600 Fails Low</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>2</td></tr> <tr><td>MCU575</td><td></td><td>RWCU Pipe Leak In Regen HX Room 503</td><td></td><td>2</td><td>00:30:00</td><td>00:00:00</td><td>00:00:00</td><td>5</td></tr> <tr><td>MCU195A</td><td></td><td>RWCU Isolation Valve HV44-1F001 Fails As-is</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MCU195B</td><td></td><td>RWCU Isolation Valve HV44-1F004 Fails As-is</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MCU195C</td><td></td><td>RWCU Isolation Valve HV44-1F040 Fails As-is</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MRR440A</td><td></td><td>Recirculation Loop A Rupture</td><td></td><td>1</td><td>00:10:00</td><td>00:00:00</td><td>00:00:00</td><td>6</td></tr> <tr><td>MFH564A</td><td></td><td>Feedwater Heater 12A Level Sensing Line Fails High</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>3</td></tr> <tr><td>MVI231A</td><td></td><td>Instrument Line Break Downstream of XV42-1F045A</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>4</td></tr> <tr><td>MVG420A</td><td></td><td>Diesel Gen D11 Fails to Auto Start</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MRH172C</td><td></td><td>RHR Pump 1C Fails to Auto Start</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MCS193B</td><td></td><td>Core Spray Pump 1B Fails to Auto Start</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MRH171B</td><td></td><td>RHR Pump 1B Trips</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MRH528C</td><td></td><td>RHR Containment Spray Valve HV51-1F021A Fails As-Is</td><td></td><td>True</td><td>00:00:00</td><td>00:00:00</td><td>00:00:00</td><td>0</td></tr> <tr><td>MMS067</td><td></td><td>Steam Leak in Drywell (0-5000 gpm)</td><td></td><td>2000</td><td>00:10:00</td><td>00:05:00</td><td>00:00:00</td><td>6</td></tr> </tbody> </table> <p style="font-size: x-small; margin: 0;">Timer Pause Delete All Active Pending</p> </div> <ul style="list-style-type: none"> ■ Ensure the following remote functions are loaded: <p style="margin-left: 20px;">N/A</p> ■ Ensure the following overrides are loaded: <p style="margin-left: 20px;">N/A</p> 	Mal ID	Mal ID	Description	Current Value	Target Value	Runtime	Active	Deactive	Trig	MHP4488		HPCI Speed / Flow Controller FIC55-1R600 Fails Low		True	00:00:00	00:00:00	00:00:00	2	MCU575		RWCU Pipe Leak In Regen HX Room 503		2	00:30:00	00:00:00	00:00:00	5	MCU195A		RWCU Isolation Valve HV44-1F001 Fails As-is		True	00:00:00	00:00:00	00:00:00	0	MCU195B		RWCU Isolation Valve HV44-1F004 Fails As-is		True	00:00:00	00:00:00	00:00:00	0	MCU195C		RWCU Isolation Valve HV44-1F040 Fails As-is		True	00:00:00	00:00:00	00:00:00	0	MRR440A		Recirculation Loop A Rupture		1	00:10:00	00:00:00	00:00:00	6	MFH564A		Feedwater Heater 12A Level Sensing Line Fails High		True	00:00:00	00:00:00	00:00:00	3	MVI231A		Instrument Line Break Downstream of XV42-1F045A		True	00:00:00	00:00:00	00:00:00	4	MVG420A		Diesel Gen D11 Fails to Auto Start		True	00:00:00	00:00:00	00:00:00	0	MRH172C		RHR Pump 1C Fails to Auto Start		True	00:00:00	00:00:00	00:00:00	0	MCS193B		Core Spray Pump 1B Fails to Auto Start		True	00:00:00	00:00:00	00:00:00	0	MRH171B		RHR Pump 1B Trips		True	00:00:00	00:00:00	00:00:00	0	MRH528C		RHR Containment Spray Valve HV51-1F021A Fails As-Is		True	00:00:00	00:00:00	00:00:00	0	MMS067		Steam Leak in Drywell (0-5000 gpm)		2000	00:10:00	00:05:00	00:00:00	6
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✓ **ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION**

■ Ensure the following triggers are built:

Event Trigger Builder / Viewer

Favorites Triggers

Trigger #	Trigger Text
1	
2	
3	
4	
5	
6	ZRPS1SDN
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	

Operators:

Arithmetic:

- * Multiplication
- / Division
- + Addition
- Subtraction

Relational:

- > Greater than
- >= Greater Than or equal
- < Less than
- <= Less than or equal
- == Equal to
- != Not equal to

Logical:

- && And
- || Or
- ! Not

Other:

- (Open Paren
-) Close Paren

Trigger Now Clear Clear All Accept Exit

■ Reset any annunciators that should not be present

INSTRUCTIONS FOR SIMULATOR OPERATOR

EVENT 1: Start HPCI using Manual Quick Start Method

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 2: HPCI Flow Controller

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate Trigger 2.
	<ul style="list-style-type: none"> ■ After 5 minutes, Report: <ul style="list-style-type: none"> – I&C will bring a TRT to MCR for approval to troubleshoot the controller
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 3: 2A Feedwater Heater Isolation

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate Trigger 2.
	<ul style="list-style-type: none"> ■ If requested: <ul style="list-style-type: none"> – "I am getting a brief from HP before I can enter the condenser bay."
	<ul style="list-style-type: none"> ■ If requested, 15 minutes after last report: <ul style="list-style-type: none"> – "Actual level appears low, request I&C investigate"
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 4: Div 1 LOCA Signal

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate Trigger 3.
	<ul style="list-style-type: none"> ■ 10C218 Panel, 5 minutes Report: <ul style="list-style-type: none"> - XV42-1F045A indicates closed
	When requested to reset Div I Shunt trips, After 5 Minutes Toggle: <ul style="list-style-type: none"> • RED107, Div I shunt trip to RESET • RED108, Div I shunt trip to RESET Then Report: -Div I Shunt trips have been reset
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate..

EVENT 5: Leak in RWCU Regen HX Room

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate Trigger 4
	<ul style="list-style-type: none"> ■ T-290 5 minutes, Report: <ul style="list-style-type: none"> -Give T-290 readings as requested from OCOEE T-103 Temperature values from instructor terminal
	<ul style="list-style-type: none"> ■ Fire Brigade, 6 minutes after T-290 call out Report: <ul style="list-style-type: none"> - There is no evidence of fire in the Reactor Enclosure. It's extremely hot and humid and the sound of blowing steam can be heard on Rx 283' elevation.
	<ul style="list-style-type: none"> ■ Isolate RWCU leak from outside MCR, If directed, 4 minutes after Reactor Scram: <ul style="list-style-type: none"> -Remove MCU195A and verify valve closed Then Report: <ul style="list-style-type: none"> - RWCU isolation valve HV-44-1F001 has been closed from the MCC.
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 6: LOCA via "1A" Recirc

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Activate Trigger 5
	<ul style="list-style-type: none"> ■ SE-10 Floor Actions, 10 minutes: <ul style="list-style-type: none"> -Load All SE-10 Floor Actions with ,Time Delays Scenario -Report the status of individual resets as requested or when all resets are timed out report "All SE-10 Floor Actions are complete."
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 7: "C" RHR pump and "B" Core Spay pump fail to start automatically

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

EVENT 8: Failure of B RHR pump and "A" RHR drywell Spray valve

✓	MALFUNCTION / REMOTE FUNCTION / REPORT
	<ul style="list-style-type: none"> ■ HV-15-1F021A Drywell Spray Valve, 8 minutes, Report : <ul style="list-style-type: none"> - HV55-1F021A (Drywell Spray Valve) valve would not operate from the MCC when attempted.
	<ul style="list-style-type: none"> ■ When Requested to close 051-1F048, WAIT 4 MINUTES, but only AFTER BLOWDOWN, Report: <ul style="list-style-type: none"> - 051-1F048 is closed
	<ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate.

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>5</u>	Event No.: <u>1</u>
Event Description: <u>Start HPCI using Manual Quick Start Method</u>			
Time	Position	Applicant's Actions or Behavior	
	SRO	Give permission to start HPCI	
	BOP	Obtain a copy of S55.1.D HPCI SYSTEM FULL FLOW FUNCTIONAL TEST	
	BOP	ENSURE the following valves aligned as indicated(CLOSED): HV-55-1F071 HV-55-1F008 HV-55-1F011 HV -49-1F022	
	BOP	OPEN HV-55-F011, CONDENSATE RETURN	
	BOP	START 10P216, "Barometric Condenser Vacuum Pump" (VACUUM PUMP).	
	BOP	MONITOR Suppression Pool temperature per ST-6-060-390-1 , Suppression Pool Temperature Check. Que Candidate: -Another operator is monitoring Suppression Pool temperature	
	BOP	INFORM HP of changing radiological conditions due to HPCI system start.	
MANUAL QUICK START			
	BOP	ENSURE FC 55 *R600, "HPCI Pump Discharge Flow Controller" (FL), set to 5,600 gpm in "AUTO."	

Op-Test No. ILT09-1Scenario No. 5Event No.: 1Event Description: Start HPCI using Manual Quick Start Method

Time	Position	Applicant's Actions or Behavior
	BOP	Simultaneously OPEN HV-55-1F001, "HPCI Steam Supply" AND START *OP213, "Auxiliary Oil Pump" (AUX OIL PUMP).
	BOP	WHEN SI 56 *61, "Turbine Speed" (S), starts to go up, THEN Immediately THROTTLE open HV 55 *F008, "HPCI Test Loop Shutoff" (TEST ISOL), until desired flow is obtained, while maintaining turbine speed greater than 2,200 rpm.
	BOP	VERIFY FV-56-112 "Turbine Stop Valve" OPEN
	BOP	VERIFY FV-56-111 "Turbine Control Valve" OPEN
	BOP	WHEN FV-56-112 , "Turbine Stop Valve" opens, THEN VERIFY HV-56-F059, "HPCI Lube Oil Cooling Water Valve," opens.

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>5</u>	Event No.: <u>2</u>
Event Description: <u>HPCI Flow Controller</u>			
Time	Position	Applicant's Actions or Behavior	
	RO	Report Q / L / P	
	BOP	Reference appropriate ARC: <ul style="list-style-type: none"> • 107 REACTOR I-2, Vibration Alarm Alert • 107 REACTOR I-3, Vibration Alarm Danger 	
	BOP	Recognize HPCI Controller Failed Low	
	BOP	Take HPCI Flow Controller to MANUAL and raise HPCI Turbine Speed to > 2200 rpm <u>AND/OR</u> Trip HPCI	
	BOP	Dispatch personnel to investigate HPCI	
	SRO	Reference Tech Spec 3.5.1	

Op-Test No. <u>ILT09-1</u>			Scenario No. <u>5</u>			Event No.: <u>3</u>		
Event Description: <u>FW Heater Isolation</u>								
Time	Position	Applicant's Actions or Behavior						
	RO	Report Q / L / P						
	BOP	Reference ARC: <ul style="list-style-type: none"> • 102-G4 1A & 2A FW Heater Isolation 						
	BOP	Recognize isolation of "A" FW Heater String in progress						
	BOP	Attempt Alarm reset per ARC Action						
	RO	Recognize Rx Power Rise						
	SRO	Enter OT-104						
	RO	Restore power to below pre-transient levels						
	SRO	Verify plant operating in a valid region of power/flow map / FW Operating region per attachment 1						
	RO	Demand control rod position report						
	BOP	Verify FW inlet temperature						
	RO	Reduce power to <85% per the RMSI						
	BOP	Investigate cause of FW heater isolation						

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>5</u>	Event No.: <u>4</u>
Event Description: <u>Inadvertent Div 1 LOCA signal</u>			
Time	Position	Applicant's Actions or Behavior	
	RO	Report Q/L/P	
	SRO BOP RO	Recognize Inadvertent Div 1 LOCA signal	
	BOP	Reference appropriate ARCs <ul style="list-style-type: none"> • 112 E5, EXCESS FLOW CHECK VALVE OPERATED PANEL C218 • 110 B3, ADS HIGH DRYWELL BYPASS TIMER INITIATED 	
	BOP	Dispatch EO to 10C218 Panel	
	BOP	Execute SE-10 for Div I only	
	BOP	Recognize and report RCIC running and injecting	
	BOP	Secure RCIC Injection	
	BOP	Recognize that the <u>D11 D/G</u> did not <u>AUTO start</u> and <u>manually start</u>	
	BOP	Recognize SJAE 1 st stage air valves going closed and reopen	
	BOP	Track Main Condenser Vacuum	
	SRO	If vacuum drops, enter OT-116	
	BOP	Secure "1A" CS pump	
	BOP	Secure "1A" RHR pump or Restore to Suppression Pool Cooling	
	BOP	Inhibit Div 1 Auto ADS	

Op-Test No. <u>ILT09-1</u>		Scenario No. <u>5</u>	Event No.: <u>4</u>
Event Description: <u>Inadvertent Div 1 LOCA signal</u>			
Time	Position	Applicant's Actions or Behavior	
	BOP	Call out for SE-10 Div 1 floor actions	
	BOP	Verify ESW pump running on diesel start	
	BOP	Restore Drywell Cooling	
	SRO	Reference TS: <ul style="list-style-type: none"> • 3.3.3 - Div 1 ADS INOP • 3.5.1 ECCS • 3.6.3 - XV42-1F045A actuation / Bypass of PCIVs • 3.8.1.1 - D11 failed to Auto start 	
	BOP	Contact Work Week Manager for troubleshooting and support	

Op-Test No. ILT09-1Scenario No. 5Event No.: 5Event Description: Leak in RWCU Regen HX Room

Time	Position	Applicant's Actions or Behavior
	RO	Report Q/L/P
	RO	Reference ARCs <ul style="list-style-type: none"> • 107 F5, DIV 1 Steam Leak DET SYS HI Temp/Trouble • 107 I5, DIV 4 Steam Leak DET SYS HI Temp/Trouble
	SRO	Enter SE-8 on Fire alarms
	BOP	Dispatch Fire Brigade
	BOP	Evacuate RE per SE-24
	SRO	Enter and execute T-103 on Div I and Div IV Steam Leak Detection Alarms
	SRO	Direct crew to use PAMS/ FZ /EQ PMS only
	SRO	Direct T-290
	SRO	Direct and attempt to isolate RWCU per T-250
	BOP	Recognize and report failure of RWCU isolation valves
	BOP	Direct personnel Outside MCR to close RWCU isolation valves
	SRO	Direct T-103 Rx Shutdown
	BOP	Transfer House Loads
	BOP	Runback Recirc to Minimum.
	RO	Manually Scram At 60% core flow
	RO	Mode Switch to S/D

Op-Test No. ILT09-1Scenario No. 5Event No.: 5Event Description: Leak in RWCU Regen HX Room

Time	Position	Applicant's Actions or Behavior
	SRO	Enter T-101 on <+12.5"
	RO	Verify all rods in
	BOP	Trip the MT and ensure generator lockout
	RO	Stabilize and maintain RPV level 12.5" and 54"
	SRO	Implement TAR
	SRO	Reduce RPV pressure w/o exceeding C/D rate limit
	BOP	Recognize and report RWCU is isolated

Time	Position	Applicant's Actions or Behavior
Op-Test No. <u>ILT09-1</u> Scenario No. <u>5</u> Event No.: <u>6</u>		
Event Description: <u>LOCA via "1A" Recirc</u>		
	RO BOP	Recognize, report and track rising DW pressure
	BOP	Perform OT-101 Immediate Operator Actions: -Determine Drywell cooling is maximized. -Determine Containment Inerting is not in progress
	SRO	Enter and direct follow-up actions of OT-101
	SRO	Enter T-102 when Drywell pressure exceeds 1.68 psig.
	SRO	Re-enter T-101 > 1.68#
	BOP	Take Action to control HPCI on Drywell Pressure 1.68# start
	BOP	Place a Loop of RHR in suppression pool spray per T-225
	BOP	Start RHRSW to support SP Spray
	BOP	Bypass and restore Drywell cooling
	SRO	Re-enter T-102 when Drywell temperature exceeds 145 deg.
	SRO	Enter T-112 when safe side of T-102 curve PC/P-3 cannot be maintained.
	BOP	Open all 5 ADS valves. ✓
	BOP	Perform SE-10 when the LOCA signal occurs.
	BOP	Direct SE-10 actions to personnel outside MCR
	BOP RO	Prevent injection not needed for core cooling

Op-Test No. <u>ILT09-1</u>	Scenario No. <u>5</u>	Event No.: <u>7</u>
Event Description: "C" RHR pump and "B" Core Spay pump will fail to auto start. <i>No 12 no before ED</i>		
Time	Position	Applicant's Actions or Behavior
	BOP	Recognize that the "1B" CS Pump did not AUTO start and manually start
	BOP	Recognize that the "1C" RHR Pump did not AUTO start and manually start.

Op-Test No. <u>ILT09-1</u>	Scenario No. <u>5</u>	Event No.: <u>8</u>
Event Description: <i>Direct Drywell Sprays</i> Failure of B RHR pump and "A" RHR drywell Spray valves <i>None up before ED</i>		
Time	Position	Applicant's Actions or Behavior
	SRO	Direct Drywell Spray
	BOP	Recognize HV-51-1F021A Drywell Spray Valve fails to open
	BOP	Recognize "1B" RHR Pump Trip
	SRO	DIRECT Drywell Spray using RHRSW
INITIATING DRYWELL SPRAY USING RHR SERVICE WATER		
	BOP	ENSURE 1BP202, "RHR Pump" not running.
	BOP	PLACE RHR Service Water Loop B OR D in service
	BOP	Dispatch personnel to close 051-1F048

Op-Test No. ILT09-1Scenario No. 5Event No.: 8Event Description: Failure of B RHR pump and "A" RHR drywell Spray valves

Time	Position	Applicant's Actions or Behavior
	BOP	OPEN the following RHR Service Water/RHR Emergency Crosstie Valves at 10C601 <ul style="list-style-type: none"> • HV 51 1F073, "RHR Service Water Crosstie" • HV 51 1F075, "RHR Service Water Crosstie"
	N/A	Simultaneously PERFORM the following to maintain RHR Service Water discharge pressure 75 to 120 psig as indicated on PI-12-001B-1 "Pump B/D Disch" (Px), at 00C667 (Main Control Room):
	RO	Throttle Fully CLOSED HV-51-1F068B, "1B RHR Htx SW Outlet Vlv" (1B) at 00C667 (Main Control Room).
	BOP	Throttle Fully OPEN HV 51 1F016B, "1B RHR Cntmt Spray Line Outboard PCIV" (OUTBOARD) to initiate spray AND MAXIMIZE flowrate as indicated on FI 51 1R603B, FL.

TERMINATE THE SCENARIO WHEN ALL THE FOLLOWING ARE MET:**RPV Pressure < 300 PSIG****RPV water level is restored to normal band****Drywell Spray is in service using RHRSW**

PREBRIEF INSTRUCTIONS

Unit 1 Reactor Power is 100%, Unit 2 100% power

Inoperable/Out of Service Equipment and ETRs

- None

Planned Evolutions:

- Maintain 100% power

Place HPCI in Full Flow Test, using the Manual Quick Start Method per S55.1.D for oil sampling.

- Completion of oil sampling is expected to take 15 minutes.
- HPCI will be shutdown when sampling is complete
- 1A RHR is in Suppression Pool cooling to support HPCI operation