

**Job Performance Measure**  
**Perform CPS 9000.05 Suppression Pool Temperature Log**

JPM Number: JPM477

Revision Number: 00

Date: 10/03/18

Developed By: Tony Jennings 10/03/18  
Instructor Date

Validated By: Aaron Marr 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 9000.05 Rev: 27a  
Procedure 9000.05D001 Rev: 27a  
Procedure 9000.05D002 Rev: 26
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	10/03/18	This is a new RO Administrative JPM.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an RO admin JPM, no simulator setup is required.

## INITIAL CONDITIONS

Rx power is 95%.

Suppression Pool level is 19.3 feet and stable.

The shift is currently performing CPS 9054.01C002 RCIC (1E51-C001) High Pressure Operability Checks.

You are an Extra Reactor Operator (RO).

## INITIATING CUE

You have been directed by the Senior Reactor Operator (SRO) to start CPS 9000.05 Suppression Pool Temperature Log.

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

.....

### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and the following: <ul style="list-style-type: none"> <li>• CPS 9000.05 Suppression Pool Temperature Log</li> <li>• CPS 9000.05D001 Suppression Pool Temperature Log Data Sheet</li> <li>• CPS 9000.05D002 Accident Monitoring Suppression Pool Temperature Log Data Sheet</li> <li>• Attachment 2 – Suppression Pool Temperature Recorder 1TR-CM017</li> <li>• Attachment 3 – Suppression Pool Temperature Recorder 1TR-CM018</li> <li>• Attachment 4 – Suppression Pool Temperature Recorders 1TR-CM334/CM335</li> <li>• Calculator</li> </ul> Examiner's Note – Attachment 1 SP Temp Log Data Sheet Key should be referenced during this JPM.				
*1	Completes prerequisites.	<b>D001 5.1-5.3</b> <ul style="list-style-type: none"> <li>• <b>Examinee completes D001 per the key.</b></li> </ul> <i>Examiner's Note – Critical part of this step is the selection of the data sheet (D001) <u>and</u> selection of the correct recording interval (≤5 minutes).</i> <i>Examiner's Note – Prerequisite steps may be performed in any order.</i>	_____	_____	_____
*2	Records time and temperatures.	<b>D001 8.1</b> <b>Examinee records data:</b> <ul style="list-style-type: none"> <li>• <b>Time readings taken</b></li> <li>• <b>1TR-CM017, points 1 through 8</b></li> <li>• <b>1TR-CM018, points 1 through 8 <u>or</u> 1TR-CM018, point 9</b></li> </ul>	_____	_____	_____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	Calculates average suppression pool temperature	<b>D001 8.1.4</b> <ul style="list-style-type: none"> <li>Examinee records 92.2°F.</li> </ul> <i>Evaluator's Note – Required because 1TR-CM017 point 1 is &gt;95°F.</i>	—	—	—
4	Calculates time average suppression pool temperature is >95°F.	D001 8.2 <ul style="list-style-type: none"> <li>Examinee records “N/A” in 8.2.1 and 8.2.2.</li> </ul>	—	—	—
*5	Verifies average suppression pool temperature is within the appropriate ITS limit listed in 5.3.	<b>D001 8.3</b> <ul style="list-style-type: none"> <li>Examinee records “Y” and initials.</li> </ul>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
 .....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Perform CPS 9000.05 Suppression Pool Temperature LogJPM Number: JPM477 Revision Number: 00Task Number and Title: 900005.01, Suppression Pool Temperature Log.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.1.18	3.6	3.8

Suggested Testing Environment: ClassroomAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s):

- CPS 9000.05 Suppression Pool Temperature Log, Rev. 27a
- CPS 9000.05D001 Suppression Pool Temperature Log Data Sheet, Rev. 27a
- CPS 9000.05D002 Accident Monitoring Suppression Pool Temperature Log Data Sheet, Rev. 26

**Actual Testing Environment:** ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 15 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_



### Attachment 1 – Suppression Pool Temperature Log Data Sheet KEY

#### SUPPRESSION POOL TEMPERATURE LOG DATA SHEET

Initial

5.1 ☐ Pg N/A Continued from Pg N/A. Date/Time: N/A / N/A  
☒ SMngt informed of log start. Date/Time: XX/XX/XXXX/ XX:XX

N/A  
**Init**

5.2 Data sheet applicability verification

☒ Suppression Pool level  $\geq$  18'6": OK - use D001.  
☐ Suppression Pool level < 18'6": **STOP** - use D002.

**Init**  
N/A

5.3 Log Interval/Limit Determination [Reflects 9.1 Operability values]

	Reason for Log	Recording Interval	Temp Limit	Initial
<input checked="" type="checkbox"/>	During testing which adds heat to the Suppression Pool.	$\leq$ 5 minutes	$\leq$ 103.7°F	<b>Init</b>
<input type="checkbox"/>	When Suppression Pool temperature is $>$ 95°F.	$\leq$ 1 hour	$\leq$ 108.7°F	<u>N/A</u>
<input type="checkbox"/>	Following placement of the Mode Switch in shutdown position with suppression pool average water temperature $>$ 108.7°F.	$\leq$ 30 minutes	$\leq$ 118.7°F	<u>N/A</u>

8.1 Recorder Values

1.	Time	<u>XX:XX</u>									
2.	ITR-CM017										
	Point 1	<u>95.36</u>									
	Point 2	<u>95.28</u>									
	Point 3	<u>91.78</u>									
	Point 4	<u>90.87</u>									
	Point 5	<u>90.57</u>									
	Point 6	<u>90.87</u>									
	Point 7	<u>91.78</u>									
	Point 8	<u>95.28</u>									
3.	ITR-CM018										
	Point 1	<u>94.3</u>									
	Point 2	<u>92.5</u>									
	Point 3	<u>91.3</u>									
	Point 4	<u>90.6</u>									
	Point 5	<u>90.6</u>									
	Point 6	<u>91.3</u>									
	Point 7	<u>92.5</u>									
	Point 8	<u>94.3</u>									
①	Averaging Display	<u>92.2</u>									
4.	High or Avg Temp	<u>92.2</u>									

**Either method is acceptable.**

8.2 Average Temperature [N/A if 8.1.4 is  $\leq$  95°]

1.	Time Avg Temp $>$ 95°	<u>N/A</u>									
2.	Rx Pwr %	<u>N/A</u>									

8.3 ITS Temperature Limit Verification [If 'No', refer to ITS LCO 3.6.2.1.]


Temp within 5.3 limits? Y or N / Init.	<u>Y / Init</u>	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>
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8.5 ☐ Continued on next sheet: Page \_\_\_\_\_  
☐ SMngt notified of completion. Date: \_\_\_\_\_ Time: \_\_\_\_\_

**Attachment 2 – Suppression Pool Temperature Recorder 1TR-CM017**

SUPPRESSION  
POOL WTR TEMP  
1TR-CM017

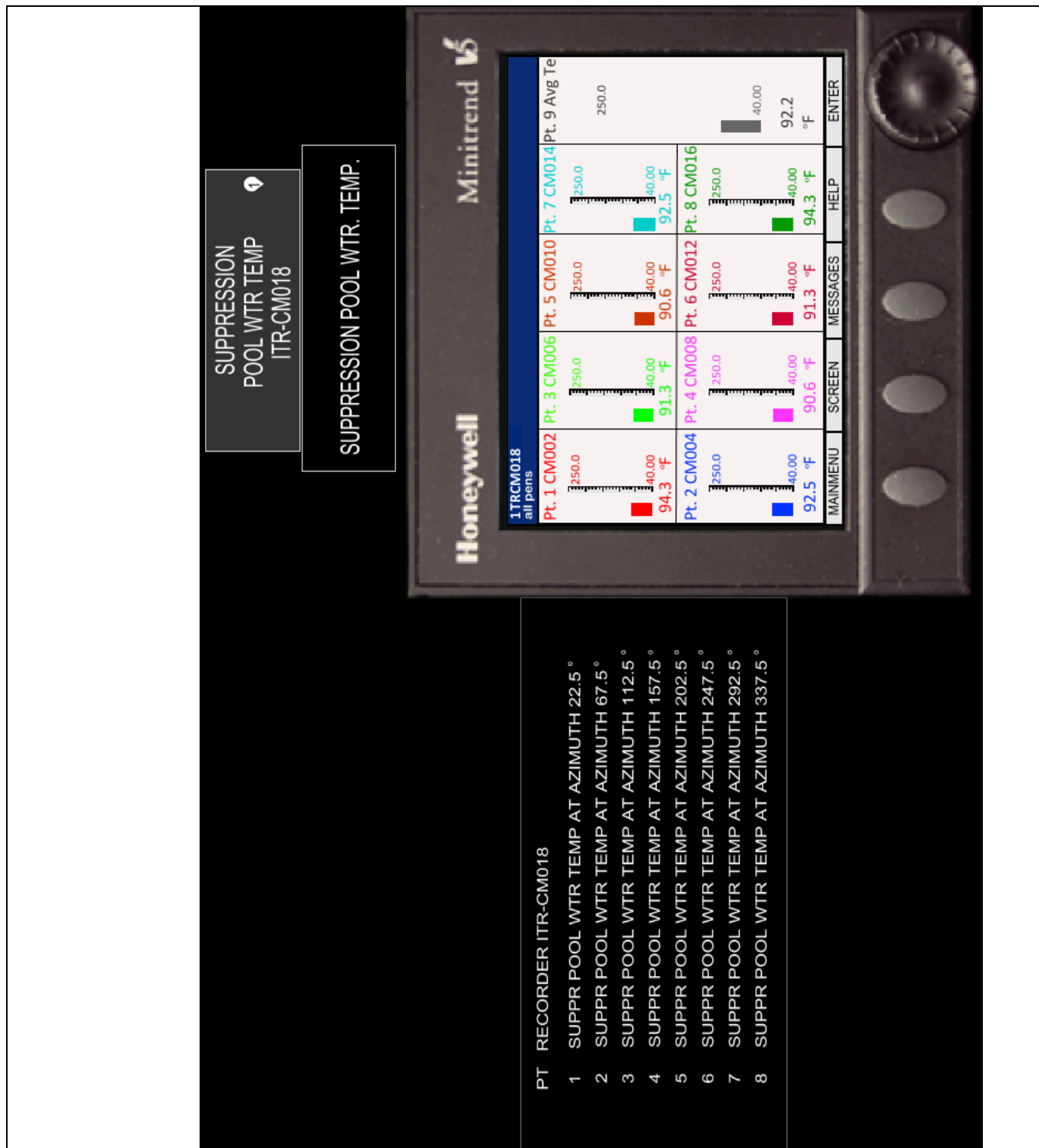
SUPPRESSION POOL WTR. TEMP.



PT RECORDER ITR-CM017

1	SUPPR POOL WTR TEMP AT AZIMUTH 0°
2	SUPPR POOL WTR TEMP AT AZIMUTH 45°
3	SUPPR POOL WTR TEMP AT AZIMUTH 90°
4	SUPPR POOL WTR TEMP AT AZIMUTH 135°
5	SUPPR POOL WTR TEMP AT AZIMUTH 180°
6	SUPPR POOL WTR TEMP AT AZIMUTH 225°
7	SUPPR POOL WTR TEMP AT AZIMUTH 270°
8	SUPPR POOL WTR TEMP AT AZIMUTH 315°

**Attachment 3 – Suppression Pool Temperature Recorder 1TR-CM018**



**Attachment 4 – Suppression Pool Temperature Recorders 1TR-CM334/CM335**



### **INITIAL CONDITIONS**

Rx power is 95%.

Suppression Pool level is 19.3 feet and stable.

The shift is currently performing CPS 9054.01C002 RCIC (1E51-C001) High Pressure Operability Checks.

You are an Extra Reactor Operator (RO).

### **INITIATING CUE**

You have been directed by the Senior Reactor Operator (SRO) to start CPS 9000.05 Suppression Pool Temperature Log.

**Job Performance Measure**  
**Evaluate License Maintenance Requirements**

JPM Number: JPM484

Revision Number: 01

Date: 10/02/18

Developed By: Tony Jennings 10/02/18  
Instructor Date

Validated By: Tim Windingland 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure OP-AA-105-102 Rev: 14  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	8/25/16	New JPM.
01	10/02/18	Update JPM format and procedure revisions.



### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an RO admin JPM, no simulator setup is required.

### **INITIAL CONDITIONS**

You are a Reactor Operator with an active NRC license.

Today is 6/23/19.

You are currently assigned to relieve the “A” RO on 7/2/19.

#### **During the current quarter (2<sup>nd</sup> quarter of 2019) you worked the following:**

- Three complete 12-hour day shift watches as the “A” RO on April 12<sup>th</sup>, 13<sup>th</sup>, and 14<sup>th</sup>.
- Two 8-hour swing shift watches as the “B” RO on April 23<sup>rd</sup> and 24<sup>th</sup>.
- Split 8-hour day shifts working 4 hours as the “B” RO and the remaining 4 hours as a clearance writer on April 1<sup>st</sup>, 2<sup>nd</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup>, 22<sup>nd</sup>, 27<sup>th</sup>, 29<sup>th</sup>, and 30<sup>th</sup>.
- Split 12-hour midnight shifts, working six hours as the “A” RO and the other six hours as a clearance writer during the outage on May 10<sup>th</sup> and 11<sup>th</sup>.
- The remaining days in the 2<sup>nd</sup> quarter of 2019 were spent as a clearance writer (Monday through Friday).

All shifts covered were entered in the Narrative log.

### **INITIATING CUE**

You are to document your shift coverage for the 2<sup>nd</sup> quarter of 2019 on OP-AA-105-102 Attachment 1 Active License Tracking Log, and determine your ability to assume shift for 7/2/19.

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

SRRS: 3D.100; There are no retention requirements for this section

.....

**Information For Evaluator's Use:**

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and copies of the following: <ul style="list-style-type: none"> <li>OP-AA-105-102 NRC Active License Maintenance</li> <li>OP-AA-105-102 Attachment 1 Active License Tracking Log (blank)</li> </ul>				
<b>*1</b>	Records shift coverage from 2 <sup>nd</sup> quarter of 2019.	<b>OP-AA-105-102 Attachment 1</b> <b>Examinee completes Attachment 1 for each valid watch stood per the key.</b>	—	—	—
<b>*2</b>	Reviews requirements to maintain an active license.	<b>OP-AA-105-102</b> <b>Examinee determines that he/she does NOT have the minimum number of hours required to maintain their license in an active status past 6/30/19.</b>	—	—	—
Cue	Question 1 - Ask the candidate if he/she can stand watch on 7/2/19. Question 2 (if necessary) – “What must you do (as a minimum) to stand watch on 7/2/19”?				
<b>*3</b>	Determines the requirements to maintain their license active past 6/30/19.	<b>OP-AA-105-102</b> <b>Examinee determines that a <u>minimum of one more complete eight hour or twelve hour watch is needed to maintain their license active past 6/30/19.</u></b>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Evaluate License Maintenance Requirements**JPM Number:** JPM484**Revision Number:** 01**Task Number and Title:** LP85801.2.1.4 Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no solo" operation, maintenance of active license status, 10CFR55, etc.**K/A Number and Importance:**

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.1.4	3.3	3.8

**Suggested Testing Environment:** Classroom**Alternate Path:** ☐ Yes ☒ No **SRO Only:** ☐ Yes ☒ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- OP-AA-105-102 NRC ACTIVE LICENSE MAINTENANCE Rev. 14

**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 ☐ NoThe 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:** \_\_\_\_\_

### Attachment 1 – OP-AA-105-102 Attachment 1 KEY

#### Attachment 1 Active License Tracking Log Page 1 of 1

Employee Number: 012345 (example)

SHIFT COVERAGE FOR THE 2nd (1<sup>ST</sup>, 2<sup>ND</sup>, 3<sup>RD</sup>, 4<sup>TH</sup>) CALENDAR QUARTER OF 2019 (YEAR)

Examinee's Name

ACTIVE

 INACTIVE

Name of License Holder  
(Print)

License Status At Start of  
Quarter (Circle one)

#### RECORD OF 8 /12 HOUR SHIFTS WORKED DURING QUARTER

Enter the date the shift ended, the shift, the shift length, the Unit, position covered, circle Y or N for logged in the SM log and signature. If working an 8 hour or 8 / 12 hour shift, enter a "1" for midnight shift, "2" for the day shift, or a "3" for the afternoon shift (only enter shifts at least 8 hours length for which turnovers were conducted). Seven shifts at least 8 hours in length are required per quarter. If working a straight 12 hour shift, enter a "N" for night shift or a "D" for day shift (only enter shifts at least 12 hours in length for which turnovers were conducted). Five 12 hour shifts are required per quarter. The quarterly shift watch requirement may be completed with a combination of complete 8 and 12 hour shifts (in a position required by the plant's Technical Specifications) (enter appropriate shift designator), and watches shall not be truncated when the minimum quarterly requirement (56 hours) is satisfied. (NUREG 1021, Revision 10)

	DATE	SHIFT	LENGTH	UNIT	POSITION (circle one)			SM LOG	SIGNATURE OF LICENSE HOLDER
ONE	4/12/19	D (or L)	12	1	FHS	SM	US	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">RO</div> Logged Y / N	Examinee Signature
TWO	4/13/19	D (or L)	12	1	FHS	SM	US	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">RO</div> Logged Y / N	Examinee Signature
THREE	4/14/19	D (or L)	12	1	FHS	SM	US	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">RO</div> Logged Y / N	Examinee Signature
FOUR	4/23/19	3	8	1	FHS	SM	US	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">RO</div> Logged Y / N	Examinee Signature
FIVE	4/24/19	3	8	1	FHS	SM	US	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">RO</div> Logged Y / N	Examinee Signature
SIX*					FHS	SM	US	RO Logged Y / N	
SEVEN*					FHS	SM	US	RO Logged Y / N	

The 6<sup>th</sup> and 7<sup>th</sup> shifts are not required if a straight 12 hour schedule is being worked.

SM= Shift Manager  
US= Unit Supervisor  
RO= Unit RO or Assistant RO  
FHS= SRO (for fuel handling only)  
Logged- Verified in SM log for correct  
Position (If no, provide additional  
Documentation to verify)

\_\_\_\_\_  
Operations Support Manager      Date

SRRS:3D.106

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

## **INITIAL CONDITIONS**

You are a Reactor Operator with an active NRC license.

Today is 6/23/19.

You are currently assigned to relieve the “A” RO on 7/2/19.

### **During the current quarter (2<sup>nd</sup> quarter of 2019) you worked the following:**

- Three complete 12-hour day shift watches as the “A” RO on April 12<sup>th</sup>, 13<sup>th</sup>, and 14<sup>th</sup>.
- Two 8-hour swing shift watches as the “B” RO on April 23<sup>rd</sup> and 24<sup>th</sup>.
- Split 8-hour day shifts working 4 hours as the “B” RO and the remaining 4 hours as a clearance writer on April 1<sup>st</sup>, 2<sup>nd</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup>, 22<sup>nd</sup>, 27<sup>th</sup>, 29<sup>th</sup>, and 30<sup>th</sup>.
- Split 12-hour midnight shifts, working six hours as the “A” RO and the other six hours as a clearance writer during the outage on May 10<sup>th</sup> and 11<sup>th</sup>.
- The remaining days in the 2<sup>nd</sup> quarter of 2019 were spent as a clearance writer (Monday through Friday).

All shifts covered were entered in the Narrative log.

## **INITIATING CUE**

You are to document your shift coverage for the 2<sup>nd</sup> quarter of 2019 on OP-AA-105-102 Attachment 1 Active License Tracking Log, and determine your ability to assume shift for 7/2/19.

**Job Performance Measure**  
**Print Reading**

JPM Number: JPM233

Revision Number: 01

Date: 10/31/18

Developed By: Bill Kiser 10/31/18  
Instructor Date

Validated By: Tim Windingland 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date



## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure E02-1CW99-001 Rev: AC  
Procedure E02-1CW99-011 Rev: T  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
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_____ SME / Instructor	_____ Date
_____ SME / Instructor	_____ Date
_____ SME / Instructor	_____ Date

**Revision Record (Summary)**

Revision	Date	Description
00	7/22/08	New JPM.
01	10/31/18	Updated to new JPM template.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an RO admin JPM, no simulator setup is required.
2. Administer this JPM in a location that allows access to reference prints – hard copy or Electronic Document Management System (EDMS).

### INITIAL CONDITIONS

A plant startup was in progress when the “A” Circulating Water (CW) normal tripping power was lost. The “A” CW Pump tripped from an alternate tripping circuit. Electrical Maintenance suspects the loss of normal tripping power was due to a blown fuse.

### INITIATING CUE

Using the applicable electrical prints, determine:

1. the normal tripping power fuse size (amperage) and
2. the electrical bus(es) that supply the A CW Pump alternate tripping circuit.

Prove your results using the electrical prints.

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

.....

#### Information For Evaluator’s Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

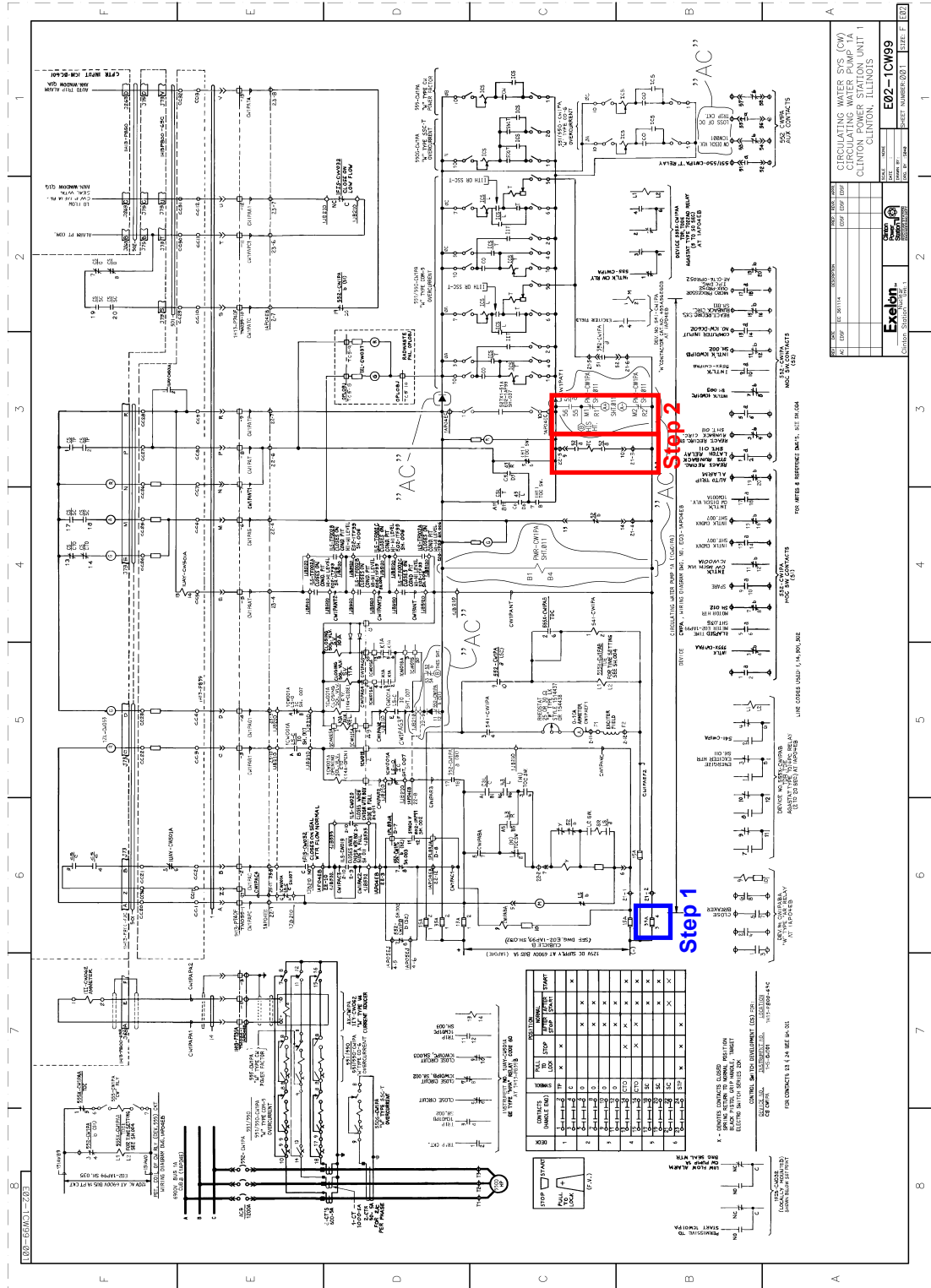
.....

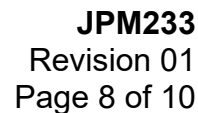
JPM Start Time: \_\_\_\_\_

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Note	Steps may be performed in any order.				
*1	Candidate references E02-1CW99 Sheet 001.	<b>E02-1CW99 Sheet 001</b> <b>Determines the normal tripping power fuse size is 35A (Amps).</b> <i>Evaluator Note – The 35 A fuse at B-6 is tied to the bottom of the trip coil (TC) at B-3 (See Attachment 1).</i>	_____	_____	_____
2	Candidate references E02-1CW99 Sheet 001.	E02-1CW99 Sheet 001 Determines the alternate tripping circuit is on E02-1CW99 Sheet 011. <i>Evaluator Note – At B-3, the circuit leg directly to the right and in parallel with the trip coil (TC) has inputs A+ and A- with “SHT 011” in between (See Attachment 1).</i>	_____	_____	_____
*3	Candidate references E02-1CW99 Sheet 011.	<b>E02-1CW99 Sheet 011</b> <b>Determines CB MCC C (0AP22E) supplies the alternate tripping circuit.</b> <i>Evaluator Note – The Alt Tripping Power Supply PS-CW1PA (F-4) is supplied by 120V AC CB MCC C (0AP22E) CKT #19 (See Attachment 2).</i>	_____	_____	_____
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_

**Attachment 1 – E02-1CW99 Sheet 001**



[illegible]

SRRS: 3D.100; There are no retention requirements for this section

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Print ReadingJPM Number: JPM233Revision Number: 01Task Number and Title: (0.13L) Read Mechanical and Electrical Prints.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.2.41	3.5	3.9

Suggested Testing Environment: Simulator/ClassroomAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s):

- E02-1CW99-001 CIRCULATING WATER SYS (CW) CIRCULATING WATER PUMP 1A, Rev. AC
- E02-1CW99-011 CIRCULATING WATER SYS (CW) REACTOR RECIRC. RUNBACK INITIATION & LATCHING RELAY, Rev. T

**Actual Testing Environment:** ☐ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 15 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_



### **INITIAL CONDITIONS**

A plant startup was in progress when the “A” Circulating Water (CW) normal tripping power was lost. The “A” CW Pump tripped from an alternate tripping circuit. Electrical Maintenance suspects the loss of normal tripping power was due to a blown fuse.

### **INITIATING CUE**

Using the applicable electrical prints, determine:

1. the normal tripping power fuse size (amperage) and
2. the electrical bus(es) that supply the A CW Pump alternate tripping circuit.

Prove your results using the electrical prints.

**Job Performance Measure**  
**Perform a High Radiation Area Entry**

JPM Number: JPM478

Revision Number: 00

Date: 10/31/18

Developed By: Tony Jennings 10/31/18  
Instructor Date

Validated By: Tim Windingland 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure NISP-RP-004 Rev: 1  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	10/31/18	This is a new RO Administrative JPM.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an RO admin JPM, no simulator setup is required.

## INITIAL CONDITIONS

The plant is operating in Mode 3.

Preparations are in progress to place the preferred loop of RHR in Shutdown Cooling Mode.

You have been tasked with determining the radiological requirements necessary for an Equipment Operator to flush the RHR discharge header for the preferred loop. The required valve manipulations will be performed in the vicinity of the RHR A/B To Feedwater S/D Cooling Rtrn Vlv (1E12-F053A/B).

During the flush, the MCR will be monitoring conductivity on 1E12-R006 using a remote camera; Equipment Operator support will not be required for conductivity monitoring.

## INITIATING CUE

Review the attached survey maps and determine the highest general area dose rate and contamination levels that can be encountered when aligning the system to flush the RHR Discharge Header.

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

.....

### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the Cue Sheet and Attachments 1-4.				
*1	Determines highest dose rate and contamination levels in the 'B' RHR Heat Exchanger Room.	<b>Attachment 3 Survey Map</b> <b>Examinee identifies the intended locations on the map and determines:</b> <ul style="list-style-type: none"> <li>the highest dose rate is 260 mrem/hr.</li> <li>the highest contamination level is 40,000 dpm/100cm<sup>2</sup>.</li> </ul>	_____	_____	_____
Cue	If a reference is requested, provide the examinee with a copy of NISP-RP-004 Radiological Posting and Labeling.  Ask the examinee to determine the posting requirements for the chosen RHR Heat Exchanger Room.				
*2	Determines posting requirements for the 'B' RHR Heat Exchanger Room.	<b>NISP-RP-004 page 9</b> <b>Examinee determines that:</b> <ul style="list-style-type: none"> <li>a dose rate <math>\geq 80</math> &amp; <math>&lt; 800</math> mrem/hour @ 30 cm requires the room to be posted as a High Radiation Area (HRA)</li> <li>a contamination level <math>\geq 1,000</math> &amp; <math>&lt; 100,000</math> dpm/100cm<sup>2</sup> requires the room to be posted as a Contamination Area (CA)</li> </ul>	_____	_____	_____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Ask the examinee to determine the RWP requirements for the Equipment Operator supporting flushing activities.				
*3	Determines the RWP requirements for entering the 'B' RHR Heat Exchanger room.	<b>Attachment 4 RWP 10017885</b> <b>Examinee identifies the following minimum requirements:</b> <ul style="list-style-type: none"> <li>• DLR and Electronic Dosimeter</li> <li>• A specific HRA/LHRA briefing</li> <li>• A full set of protective clothing must be worn consisting of coveralls, hardhat cover, cotton liners, 1 pair rubber gloves, rubber shoe covers and booties</li> </ul>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
.....



**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Perform a High Radiation Area EntryJPM Number: JPM513 Revision Number: 00Task Number and Title: 995555.01, Complete in-plant radiological practices for a High Radiation Zone.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.3.7	3.5	3.6

Suggested Testing Environment: ClassroomAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s):

- NISP-RP-004 Rev. 1

**Actual Testing Environment:** ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 20 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_

**Attachment 1 – Procedure****Flushing RHR 'A' discharge header**

1. (Local) Open 1E12-F063A, RHR A Pump Disch Hdr Flush Wtr Supp. AB 762' East HX Rm east wall. (Normally locked shut)
2. Throttle open 1E12-F070, RHR Disch To Radwaste Hdr Isol Valve, AB 737' B HX Rm west wall. (Normally locked shut)
3. (MCR) Flush until conductivity is <10 umho as indicated on 1E12-R006 (meter on 1H22-P021 in RHR B Pump Rm) or by sample.
  - a. Shut 1E12-F048A, RHR A Hx Bypass Valve.
4. Flush until conductivity is <10 umho as indicated on 1E12-R006 (meter on 1H22-P021 in RHR B Pump Rm) or by sample.
  - a. Shut 1E12-F070.
5. (Local) Lock shut 1E12-F063A, RHR B Pump Disch Hdr Flush Wtr Supp.
6. Open 1E12-F048A, RHR A Hx Bypass Valve.

**Flushing RHR 'B' discharge header**

1. (Local) Open 1E12-F063B, RHR B Pump Disch Hdr Flush Wtr Supp. AB 762' West HX Rm. (Normally locked shut)
2. Throttle open 1E12-F040, RHR B To Radwaste Second Isol Valve.
3. Flush until conductivity is <10 umho as indicated on 1E12-R006 (meter on 1H22-P021 in RHR B Pump Rm) or by sample.
  - a. Shut 1E12-F040.
4. (Local) Lock shut 1E12-F063B, RHR B Pump Disch Hdr Flush Wtr Supp.

**Attachment 2 – Survey Map AB1-762-RHR ‘A’**



RADIOLOGICAL SURVEY MAP

Page 1 of 1

Survey #: 2019-XXXXXX

MAP: AB1-762-RHR A AREA: Aux. Building 762' RHR Heat Exchanger 'A' (A4-04)  
TEMPLATE: HX DESCRIPTION:

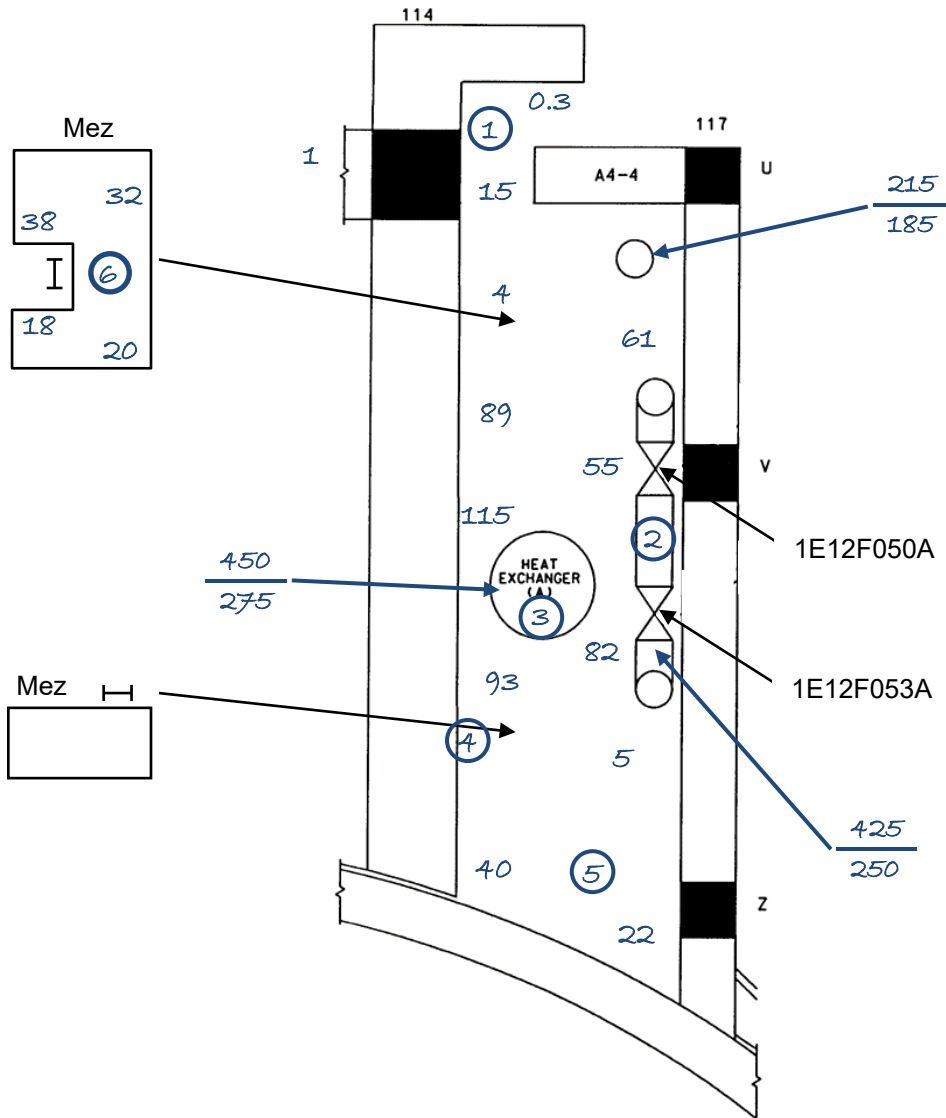
Date: XX-XX-19	Time: XXXX	Type: S/D Cooling	Rx Pwr (%): 0%
Inst. Type	Powerlabs SerNo	Cal Due	Exposure (mRem): 4.7
Ludlum M-177	23456	XX-XX-20	
RD-20	34567	XX-XX-20	

RWP: CL-I-19-XXXXX	Print Name	Signature	EID#
RPT: A. Rptech /	A. Rptech	/	XXXXXX
RPS: N/A /	N/A	/	N/A
RPS: R.Psup / R.Psup	Date: XX-XX-19		

Contamination Results:			No	Location	dpm/100cm <sup>2</sup>	No	Location	dpm/100cm <sup>2</sup>	No	Location	dpm/100cm <sup>2</sup>
No	Location	dpm/100cm <sup>2</sup>	2	Pipe O/S	9K	4	wall	<1K	6	mezz	<1K
1	floor	2K	3	HX	1K	5	floor	1K			

NOTES: All Dose Rates in mR/hr unless noted. XX/XX = Contact/30 cm

-x-x-x=Radiological Boundary  
T = Transfer Area



**Attachment 3 – Survey Map AB1-762-RHR ‘B’**



RADIOLOGICAL SURVEY MAP

Page 1 of

1

Survey #:

2019-XXXXXX

MAP  
TEMPLATE:

AB1-762-RHR B  
HX

AREA  
DESCRIPTION:

Aux. Building 762' RHR Heat Exchanger 'B' (A4-02)

Date: XX-XX-19 Time: XXXX

Type: S/D Cooling Rx Pwr (%): 0%

Inst. Type Powerlabs SerNo Cal Due

RWP: CL-I-19-XXXXX Exposure (mRem): 4.7

Ludlum M-177	23456	XX-XX-20
RO-20	34567	XX-XX-20

Print Name Signature EID#

RPT: A. Rptech / A. Rptech / XXXXXXX

RPT: N/A / N/A / N/A

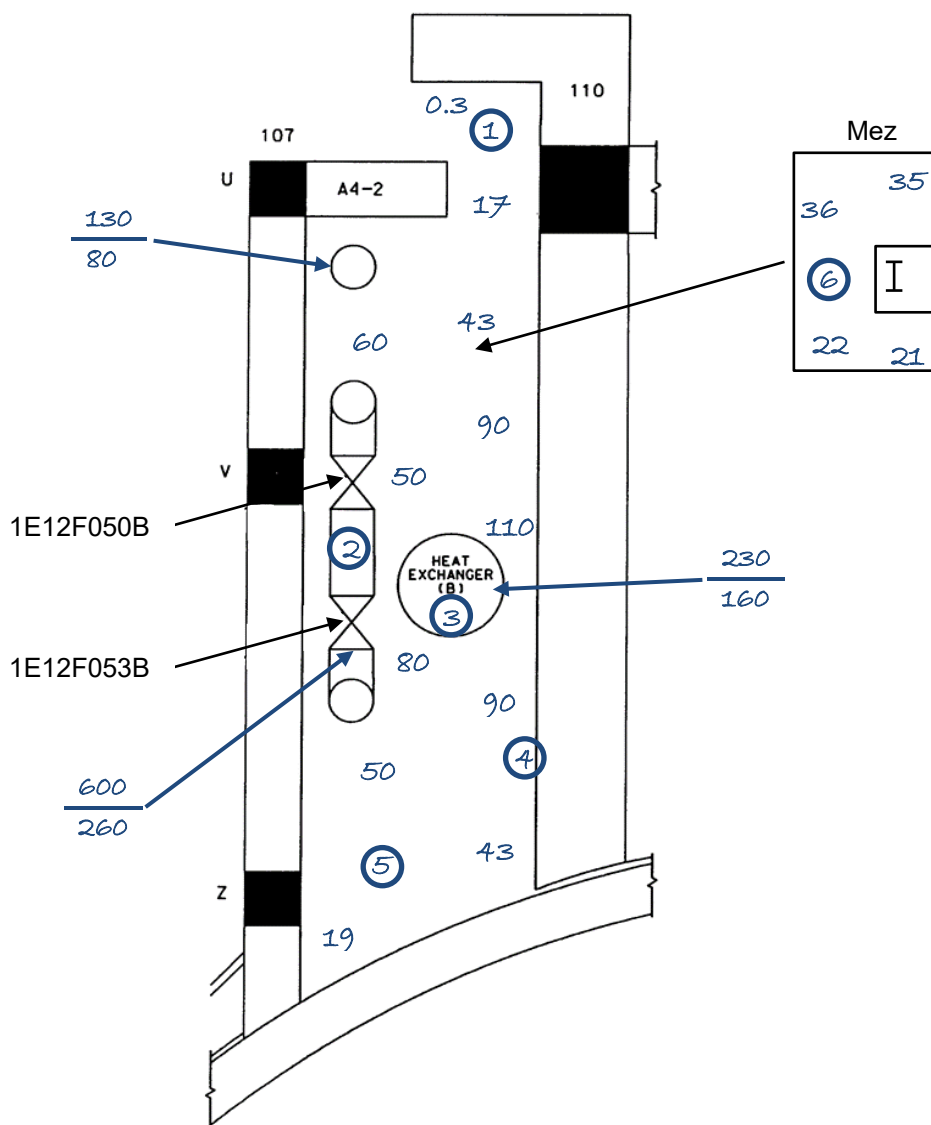
RPSS: R.Psup / R.Psup Date: XX-XX-19

**Contamination Results:**

No	Location	dpm/100cm <sup>2</sup>	No	Location	dpm/100cm <sup>2</sup>	No	Location	dpm/100cm <sup>2</sup>
1	floor	2K	2	Pipe O/S	40K	4	wall	<1K
			3	HX	1K	5	floor	1K
						6	mezz	<1K

NOTES: All Dose Rates in mR/hr unless noted. XX/XX = Contact/30 cm

-x-x-x- = Radiological Boundary  
T = Transfer Area



## Attachment 4 – RWP 10017885 (page 1)

### Clinton Power Station

Radiation Work Permit

RWP#: 10017885

Rev: 0

Worker Information

RWP Description: Operations Support For Placing RHR in SDC

Unit:	Building:	Elevation:	Location:
1	All	All	Various
Equipment:	Various		

<b>RWP Dose</b> Approval: 100 mrem ED Dose Alarm: 80 mrem Dose Rate Alarm: 1000 mrem/hr
--

### **Exposure Monitoring Requirements**

DLR and Electronic Dosimeter

Teledosimetry may be used in lieu of standard ED.

ED setpoints may be raised IAW RP-AA-403 based upon current survey data in the work location.

### **Respiratory Protection Required**

Radiation Protection shall evaluate for engineering control and respiratory protection per RP-AA-401

### **Special Instructions**

This RWP allows High Radiation and Locked High Radiation Area access: A specific HRA/LHRA briefing is required to enter.

Electronic Dosimeters should be checked at approximately 15 minute intervals or more often in higher radiation areas.

Radiation Worker Pocket Data Sheet "Trip Ticket" will be used by each individual for each entry.

Verify with RP that your work area has been surveyed AND that the ED dose rate alarm and dose alarm set points are adequate. If dose rates and/or contamination levels and/or dosimetry placement (when applicable) are not known for current plant status, an RPT may survey the area prior to start of work.

Contact RP prior to accessing areas above 7 ft.

Stop Work Limits:

1. GA dose rates  $\geq$  1000 mr/hr
2. GA contamination levels  $\geq$  200k dpm/100cm<sup>2</sup>
3. Airborne radioactivity  $\geq$  0.3 DAC

### **Protective Clothing Requirements**

Protective Clothing ( $\leq$  100,000 dpm/100 cm<sup>2</sup>)

Coveralls, Hardhat cover, cotton liners, 1 pair rubber gloves, rubber shoe covers and booties

Protective Clothing ( $<$  10,000 dpm/100 cm<sup>2</sup>)  
RP APPROVAL REQUIRED

Modesty garments, rubber shoe covers and booties, cotton liners, 1 pair rubber gloves, hardhat cover.

Company modesty garments shall be worn under PC's.

Protective Clothing ( $>$  100,000 dpm/100 cm<sup>2</sup>)

PCs consists of:

Full hood, hard hat cover, coveralls, shoe covers, shoe rubbers, glove liners, 1 pair rubber gloves. Additional protective clothing (e.g. paper suit, nylon, rubber) may be prescribed based upon contamination form (i.e. wet, dry or greasy material) or extended activities in contaminated areas ( $>$ 100,000 dpm/100cm<sup>2</sup>)

Company modesty garments shall be worn under PC's

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

**Attachment 4 – RWP 10017885 (page 2)****Clinton Power Station**

Radiation Work Permit

Radiation Protection Information

RWP#: 10017885      Rev: **0****Survey Frequency Requirements:****Radiation :**      **R****Contamination:** **R****Airborne:**      **R****Shielding Recommended:**

- ☒ None  
Temporary  
Permanent

**Pre-Job Briefing Notes:****RPT Coverage / Comments:**

- ☐ Initial  
☒ Intermittent  
☐ Continuous

Continuous RP for LHRA entry

**Attachment 4 – RWP 10017885 (page 3)****Clinton Power Station**

Radiation Work Permit

*Continuation Sheet*RWP#: 10017885      Rev: **0**

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**Continuation Sheet**

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When using remote communication devices (Telex, PCS phone) items should be inside PC's or secured in a pouch.  
Teledosimetry should be secured inside pocket unless directed by Radiation Protection

## **INITIAL CONDITIONS**

The plant is operating in Mode 3.

Preparations are in progress to place the preferred loop of RHR in Shutdown Cooling Mode.

You have been tasked with determining the radiological requirements necessary for an Equipment Operator to flush the RHR discharge header for the preferred loop. The required valve manipulations will be performed in the vicinity of the RHR A/B To Feedwater S/D Cooling Rtrn Vlv (1E12-F053A/B).

During the flush, the MCR will be monitoring conductivity on 1E12-R006 using a remote camera; Equipment Operator support will not be required for conductivity monitoring.

## **INITIATING CUE**

Review the attached survey maps and determine the highest general area dose rate and contamination levels that can be encountered when aligning the system to flush the RHR Discharge Header.



## CLINTON POWER STATION

### Job Performance Measure

Evaluation of Work Hours IAW 10CFR26

JPM Number: JPM483

Revision Number: 00

Date: 8/24/16

<b>Developed By:</b>	<u>T. Jennings</u> Instructor	<u>8/24/16</u> Date
<b>Validated By:</b>	<u>Mat Baker</u> SME or Instructor	<u>4/30/19</u> Date
<b>Reviewed By:</b>	<u>Pat Bulpitt</u> Operations Representative	<u>6/3/19</u> Date
<b>Approved By:</b>	<u>Tony Jennings</u> Training Department	<u>6/3/19</u> Date

**Clinton Power Station  
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 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 cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the procedure(s) referenced by this JPM reflects the current revision:  
     Procedure LS-AA-119 Rev: 12  
     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

**Clinton Power Station  
Job Performance Measure (JPM)**

**Revision Record (Summary)**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
00	8/24/16	New JPM.

**Clinton Power Station  
Job Performance Measure (JPM)**

**READ TO THE OPERATOR**

I will explain the initial conditions, which step(s) to simulate or discuss, and provide the initiating cues. When you complete the task successfully, the objective of this Job Performance Measure will be satisfied.

**TASK STANDARDS:**

- Examinee determines that LS-AA-119 work hour limits will be exceeded and reports findings to the Shift Manager.

**TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:**

- None

**PROCEDURAL/REFERENCES:**

- LS-AA-119 Rev. 12 Fatigue Management and Work Hour Limits

**EVALUATOR INSTRUCTIONS:**

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- Provide the examinee with a copy of the Initial Conditions and Initiating Cue page (back page of the JPM) when providing the initiating cue.
- Provide the examinee with the following items when requested:
  - LS-AA-119 Fatigue Management and Work Hour Limits

**Clinton Power Station  
Job Performance Measure (JPM)**

**INITIAL CONDITIONS:**

The plant is in Mode 1.

**INITIATING CUE:****CAUTION**

- All pre-job briefings are completed.

You are a Shift Supervisor on an operating crew.

Review the proposed work schedule for the upcoming six weeks and determine if the requirements of LS-AA-119 Fatigue Management and Work Hour Limits will be met if implemented as written and report results to the Shift Manager.

	SUN	MON	TUE	WED	THU	FRI	SAT
Week 1	X	D	D	D	X	X	X
Week 2	X	X	X	D	D	D	D
Week 3	D	R	D	X	X	N	N
Week 4	N	N	X	R	R	R	X
Week 5	X	X	N	N	N	X	X
Week 6	X	T	T	T	T	T	N

X = Day Off

D = 12 Hour Day

N = 12 Hour Night (Starts at 1900 on previous day)

R = 8 Hour Relief Shift

T = 8 Hour Training Day

**START TIME:** \_\_\_\_\_

**Clinton Power Station  
Job Performance Measure (JPM)**

**PERFORMANCE INFORMATION**

Critical steps are denoted with an asterisk (\*) to the left of the step number and appear in BOLDDED letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the comments section of the JPM.

**PERFORMANCE STEPS**

**LS-AA-119 Fatigue Management and Work Hour Limits**

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
1	Determines 10 CFR 26 Work Hour Limits.	Locates and reviews LS-AA-119 section 5.1.1 10CFR26 Work Hour Limits.	—	—	—
2	Reviews Week 1 of the proposed schedule.	5.1.1 Determines that the scheduled hours will <u>not</u> violate 10CFR26 work hour limits.	—	—	—
3	Reviews Week 2 of the proposed schedule.	5.1.1 Determines that the scheduled hours will <u>not</u> violate 10CFR26 work hour limits.	—	—	—
4	Reviews Week 3 of the proposed schedule.	<b>*5.1.1</b> <b>Determines that the scheduled 80 hours from Week 2 Wednesday to Week 3 on Tuesday <u>will</u> violate 10CFR26 work hour limit of 72 hours in a 7-day period.</b> <i>Evaluator Cue – When reported, acknowledge the report and cue the examinee to complete the schedule review.</i>	—	—	—
5	Reviews Week 4 of the proposed schedule.	5.1.1 Determines that the scheduled hours will <u>not</u> violate 10CFR26 work hour limits.	—	—	—
6	Reviews Week 5 of the proposed schedule.	5.1.1 Determines that the scheduled hours will <u>not</u> violate 10CFR26 work hour limits.	—	—	—

**Clinton Power Station  
Job Performance Measure (JPM)**

<b><u>STEP</u></b>	<b><u>ELEMENT</u></b>	<b><u>STANDARD</u></b>	<b>SAT</b>	<b>UNSAT</b>	<b>Comment Number</b>
7	Reviews Week 6 of the proposed schedule.	<p><b>*5.1.1</b></p> <p><b>Determines that the scheduled hours <u>will</u> violate the following 10CFR26 work hour limits:</b></p> <ul style="list-style-type: none"> <li>• <b>16 in 24 (0700 on Friday until 0700 on Saturday = 20 hours in a 24 hour period), or</b></li> <li>• <b>26 in 48 (0700 on Thursday until 0700 on Saturday = 28 hours in a 48 hour period), or</b></li> <li>• <b>10 hour break between successive work periods (the transition from training on Friday to night shift on Saturday is 4 hours)</b></li> </ul> <p><i>Evaluator Note – the 10 hour break requirement drives the violation of the 16 in 24 and 26 in 48 hour requirements, so stating a violation of any one of the three limits above constitutes satisfactory performance of the step.</i></p> <p><i>Evaluator Cue – When reported, acknowledge the report and cue the examinee that the JPM is complete.</i></p>	—	—	—

**TERMINATING CUES:**

Candidate completes review of the proposed work schedule and reports identified issues to the Shift Manager.

**STOP TIME:** \_\_\_\_\_

**Clinton Power Station**  
**Job Performance Measure (JPM)**

Operator's Name: \_\_\_\_\_

Job Title:      ☐ EO      ☐ RO      ☐ SRO      ☐ STA      ☐ SRO CertJPM Title:      Evaluation of Work Hours IAW 10CFR26JPM Number:   JPM483      Revision Number:   00Task Number and Title:   999999.25 Prepare a Minimum Shift Complement Form

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.1.5		3.9
Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.			

**Suggested Testing Environment:**    Classroom**Actual Testing Environment:**    ☐ Simulator      ☐ Plant      ☐ Control Room
**Testing Method:**    ☐ Simulate      **Alternate Path:**    ☐ Yes      ☒ No  
                                  ☒ Perform      **SRO Only:**      ☒ Yes      ☐ No
**Time Critical:**    ☐ Yes      ☒ No**Estimated Time to Complete:**   15 minutes      Actual Time Used:   \_\_\_\_\_ minutes

References:      LS-AA-119, Rev. 12, Fatigue Management and Work Hour Limits

**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: \_\_\_\_\_



**Clinton Power Station  
Job Performance Measure (JPM)**

**INITIAL CONDITIONS:**

The plant is in Mode 1.

**INITIATING CUE:**

**CAUTION**

- All pre-job briefings are completed.

You are a Shift Supervisor on an operating crew.

Review the proposed work schedule for the upcoming six weeks and determine if the requirements of LS-AA-119 Fatigue Management and Work Hour Limits will be met if implemented as written and report results to the Shift Manager.

	SUN	MON	TUE	WED	THU	FRI	SAT
Week 1	X	D	D	D	X	X	X
Week 2	X	X	X	D	D	D	D
Week 3	D	R	D	X	X	N	N
Week 4	N	N	X	R	R	R	X
Week 5	X	X	N	N	N	X	X
Week 6	X	T	T	T	T	T	N

X = Day Off

D = 12 Hour Day

N = 12 Hour Night (Starts at 1900 on previous day)

R = 8 Hour Relief Shift

T = 8 Hour Training Day

**Job Performance Measure**  
**Verify Conditions are met to Enter Mode 2**

JPM Number: JPM113

Revision Number: 01

Date: 10/01/18

Developed By: Tony Jennings 10/01/18  
Instructor Date

Validated By: Aaron Marr 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 3001.01 Rev: 28e  
Procedure 3001.01C001 Rev: 19a  
Procedure 3001.01C002 Rev: 17c
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	2/25/09	Converted from old JPM.
01	10/01/18	Update JPM format and procedure revisions.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an SRO admin JPM, no simulator setup is required.

## **INITIAL CONDITIONS**

You have taken the shift as the CRS in Mode 4.

## **INITIATING CUE**

Review the attached, partially completed procedures (CPS 3001.01 Preparation For Startup & Approach to Critical, CPS 3001.01C001 Preparation for Startup Checklist and CPS 3001.01C002 Mode 2 Checklist) and identify all remaining actions required prior to entering Mode 2.

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

.....

### **Information For Evaluator's Use:**

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and marked up copies of the following: <ul style="list-style-type: none"> <li>• CPS 3001.01 Preparation For Startup &amp; Approach to Critical</li> <li>• CPS 3001.01C001 Preparation for Startup Checklist</li> <li>• CPS 3001.01C002 Mode 2 Checklist</li> </ul>				
Note	The examinee may perform the following review steps in any order.				
1	Evaluates RCIC operability.	3001.01C001 9.9 Operator identifies step has not been completed. Operator reports that RCIC Inoperability does <u>not</u> impact plant startup (entering Mode 2).  <i>Evaluator Cue – If asked, the RPV pressure is 0 psig.</i>  <i>Evaluator Note – Per ITS 3.5.3 RCIC System, RCIC is not required to be operable until reactor steam dome pressure is &gt; 150 psig.</i>  <i>Evaluator Note – The candidate may N/A step 9.9 of CPS 3001.01C001.</i>	_____	_____	_____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*2	Evaluates all divisions of RHR.	<b>3001.01 8.1.6 / 3001.01 C002 3.5.1, 3.5.3, 3.6.1.7 &amp; 3.6.2.3</b>  <b>Operator identifies and reports that all divisions of RHR must be placed in Standby to enter Mode 2.</b>  <i>Evaluator Note – RHR systems NOT in standby does not satisfy LCOs for ECCS and Containment Spray per:</i>  <i>ITS 3.5.1 ECCS – Operating</i> <i>ITS 3.6.1.7 RHR Containment Spray System</i> <i>ITS 3.6.2.3 RHR Suppression Pool Cooling</i>  <i>Evaluator Note – Examinee may state that RHR needs to be secured from Shutdown Cooling.</i>	—	—	—
*3	Evaluates RHR B MOV Test Prep switch.	<b>3001.01 Appendix B / 3001.01C002 2.5.2</b>  <b>Operator identifies and reports that RHR B Test Prep Switch must be in NORMAL to enter Mode 2.</b>  <i>Evaluator Note – RHR B MOV Test Prep switch NOT in Normal does not satisfy ORM 2.5.2 Motor Operated Valves Thermal Overload Protection.</i>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
.....



**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Verify Conditions are met to Enter Mode 2JPM Number: JPM113Revision Number: 01Task Number and Title: 300101.01 Complete Control Room actions to perform preparation for startup and approach to critical.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.1.23	4.3	4.4

Suggested Testing Environment: ClassroomAlternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No

Reference(s):

- CPS 3001.01 Preparation for Startup & Approach to Critical, Rev. 28e
- CPS 3001.01C001 Preparation for Startup Checklist, Rev. 19a
- CPS 3001.01C002 Mode 2 Checklist, Rev. 17c

**Actual Testing Environment:** ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 20 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_

### **INITIAL CONDITIONS**

You have taken the shift as the CRS in Mode 4.

### **INITIATING CUE**

Review the attached, partially completed procedures (CPS 3001.01 Preparation For Startup & Approach to Critical, CPS 3001.01C001 Preparation for Startup Checklist and CPS 3001.01C002 Mode 2 Checklist) and identify all remaining actions required prior to entering Mode 2.

## Job Performance Measure

### **Review a Completed Control Rod / Position Indication Operability Surveillance and Identify Discrepancies**

JPM Number: JPM114

Revision Number: 01

Date: 10/01/18

Developed By: Tony Jennings 10/01/18  
Instructor Date

Validated By: Aaron Marr 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 9011.01 Rev: 31  
Procedure 4007.02 Rev: 13c  
Procedure 2203.01 Rev: 7b
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	2/25/09	Converted from old JPM.
01	10/01/18	Update JPM format and procedure revisions.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an SRO admin JPM, no simulator setup is required.

## **INITIAL CONDITIONS**

You are the CRS.

The plant is operating at 90% power.

The A RO has completed CPS 9011.01 Control Rod/Position Indication Operability surveillance for all fully and partially withdrawn control rods.

## **INITIATING CUE**

Review the completed surveillance for approval. Report when task is complete.

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

.....

### **Information For Evaluator's Use:**

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and the following: <ul style="list-style-type: none"> <li>Marked up copy of CPS 9011.01 Control Rod/Position Indication Operability</li> <li>Attachment 1 – 3D Case, Initial</li> <li>Attachment 2 – 3D Case, Final</li> </ul>				
<b>*1</b>	Reviews completed CPS 9011.01.	<b>9011.01 8.5.2</b> <b>Reviews the initial and final Control Rod Position printouts to verify proper rod positions. Examinee identifies that rod 36-29 is at position 6 instead of position 4.</b> <i>Evaluator Note – An unexpected or unscheduled change in rod position is a symptom/entry to CPS 4007.02 Inadvertent Rod Movement.</i>	_____	_____	_____
Cue	When requested, provide the examinee a copy of CPS 4007.02 Inadvertent Rod Movement.				
<b>*2</b>	Enters CPS 4007.02.	<b>4007.02 1.0 Symptoms</b> <b>Examinee determines that plant conditions require entry into CPS 4007.02.</b> <i>Evaluator Cue – If examinee requests an additional 3D case, inform him/her that the “Final” 3D case is current.</i> <i>Evaluator Cue – If asked, report all radiation levels as “normal”.</i> <i>Evaluator Cue – If asked, the Shift Manager is reviewing the CPS Emergency Plan Annex.</i> <i>Evaluator Cue – If asked, the “Rod Drift” annunciator is not lit.</i>	_____	_____	_____



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*2</b> (cont.)		<i>Evaluator Cue – If examinee asks the Reactor Engineer (RE) for a recommendation, ask him/her for a recommendation.</i>			
Cue	When requested, provide the examinee a copy of CPS 2203.01 Return Of Out Of Sequence Rods.				
<b>*3</b>	Takes recovery actions per CPS 2203.01.	<b>Directs the RO to return Control Rod 36-29 back to position 04.</b>  <i>Evaluator Cue – RO reports Rod 36-29 has been repositioned from position 06 to position 04.</i>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
.....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Review a Completed Control Rod / Position Indication Operability Surveillance and Identify Discrepancies**JPM Number:** JPM114**Revision Number:** 01**Task Number and Title:** 999999.19 Review the results of surveillance tests.**K/A Number and Importance:**

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.1.12	3.7	4.1

**Suggested Testing Environment:** Classroom**Alternate Path:** ☐ Yes ☒ No **SRO Only:** ☒ Yes ☐ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- CPS 9011.01 Control Rod/Position Indication Operability, Rev. 31
- CPS 4007.02 Inadvertent Rod Movement, Rev. 13c
- CPS 2203.01 Return Of Out Of Sequence Rods, Rev. 7b

**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 ☐ NoThe 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:** \_\_\_\_\_

**Attachment 1 – INITIAL 3D Case (Page 1)**

FOR TRAINING USE ONLY				CLINTON CYCLE 18		SEQUENCE NO 23		PAGE 1
CORE PARAMETERS			3D MONICORE		today-2xxx xx:xx CALCULATED			
POWER	MWT	3125	PERIODIC LOG		today-2xxx xx:xx PRINTED			
POWER	MWE	1062			CASE ID FMLD1950708205855			
FLOW	MLB/HR	75.844	CALC RESULTS		RESTART FMLD1950708195845			
FPAPDR		0.824			LPRM SHAPE - FULL CORE			
SUBC	BTU/LB	23.49	Keff	1.0000				
PR	PSIa	1027.9	XE WORTH %	-2.52	LOAD LINE SUMMARY			
CORE	MWD/sT	20850.8	XE/RATED	1.00	CORE POWER	89.9%		
CYCLE	MWD/sT	8741.6			CORE FLOW	89.8%		
MCPR		1.268			LOAD LINE	96.0%		

```
CORRECTION FACTOR:  MFLCPR= 1.000  MFLPD= 1.000  MAPRAT= 0.999
OPTION:  ARTS        2 LOOPS ON    MANUAL FLOW  MCPRLIM= 1.240
```

MOST LIMITING LOCATIONS (NON-SYMMETRIC)							
MFLCPR	LOC	MFLPD	LOC	MAPRAT	LOC	PCRAT	LOC
0.978	37-28	0.912	17-22-18	0.821	7-28- 5	0.798	41-28-16
0.976	39-26	0.912	7-28- 5	0.817	15-30-16	0.798	19-28-16
0.975	41-28	0.912	41-28-16	0.817	11-22-13	0.797	7-28- 5
0.973	11-28	0.902	19-28-16	0.816	19-26-16	0.791	39-22-20
0.940	13-32	0.896	15-38-18	0.813	19-30-15	0.782	9-22-13
0.939	9-26	0.895	21-26-16	0.803	7-26-12	0.779	11-20-13
0.937	11-20	0.893	17-26-16	0.802	9-36-13	0.779	17-26-16
0.930	39-22	0.889	9-22-13	0.798	11-30-11	0.777	11-28-15
0.927	7-28	0.889	11-20-13	0.796	9-26- 5	0.776	13-32-16
0.923	9-22	0.888	13-32-16	0.795	39-22-20	0.774	47-26-12

SEQ.	A-2	C=MFLCPR	D=MFLPD	M=MAPRAT	P=PCRAT	*=MULTIPLE	CORE AVE	AXIAL								
							NOTCH	REL PW	LOC							
53							00	0.238	25							
49							02	0.446	24							
L							04	0.804	23							
45							06	0.963	22							
							08	1.056	21							
41				P			10	1.158	20							
L							12	1.191	19							
37		18	C4		18		14	1.163	18							
							16	1.182	17							
33							18	1.220	16							
L							20	1.215	15							
29		4			4		22	1.187	14							
							24	1.212	13							
25							26	1.207	12							
L							28	1.181	11							
21		18	4		18		30	1.170	10							
							32	1.166	09							
17			D				34	1.131	08							
L							36	1.085	07							
13							38	1.072	06							
							40	1.050	05							
09							42	0.998	04							
L				M			44	0.920	03							
05	L	L	L	L	L	L	46	0.749	02							
	04	08	12	16	20	24	28	32	36	40	44	48	52	48	0.237	01

CORE AVERAGE RADIAL POWER DISTRIBUTION							
RING #	1	2	3	4	5	6	7
REL PW	0.890	1.084	1.113	1.102	1.155	1.145	0.727

SRRS: 3D.100; There are no retention requirements for this section

**Attachment 1 – INITIAL 3D Case (Page 2)**

FOR TRAINING USE ONLY						PAGE 2
CLINTON CYCLE 18						SEQUENCE NO 23
INSTRUMENT READINGS/STATUS						today-2xxx xx:xx CALCULATED
CALIBRATED LPRM READINGS						today-2xxx xx:xx PRINTED
47D	40.1	49.8	55.7	45.9	30.2	CASE ID FMLD1950708205855
C	57.0	59.8	60.3	64.5	43.0	LPRM SHAPE - FULL CORE
B	61.2	63.6	60.9	69.2	41.9	
A	51.1	54.9	49.5	63.0	27.7	# OF TIPS REJECTED: 1
39D	35.4	51.3	58.4	61.1	57.5	FAILED SENSORS:
C	55.8	62.7	60.3	59.6	66.5	LPRM ( 2 SIGNAL FAILED)
B	60.0	65.2	60.7	57.0	66.7	615A 3815D
A	52.7	61.1	50.4	44.4	54.7	LPRM ( 0 PANACEA REJECTED)
31D	39.9	51.6	55.8	56.0C	55.7	OTHER SENSORS ( 0 TOTAL)
C	63.7	71.1	68.3	63.1	72.6P	SUB RODS
B	69.6	71.2	66.7	59.2	72.9	NONE
A	67.6M	69.0	61.1	45.4	71.1	T = TIP RUN RECOMMENDED
23D	40.0	54.3	58.1	57.9	59.5	C = MFLCPR LOCATION
C	62.2	67.3D	63.7	59.2	66.8	M = MAPRAT LOCATION
B	67.1	67.1	61.4	56.9	66.6	D = MFLPD LOCATION
A	66.5	58.6	48.7	44.2	55.6	P = PCRAT LOCATION
15D	28.5	46.2	55.5	57.2	0.0	* = MULTIPLE LIMIT
C	42.4	63.6	62.8	59.1	65.4	
B	43.2	68.6	61.9	57.4	67.6	
A	0.0	61.7	49.9	44.3	64.3	
07D	29.1	39.3	40.7	36.6		
C	41.4	58.6	56.6	54.5		
B	42.3	64.8	61.8	58.3		
A	31.2	57.2	55.6	48.4		
06	14	22	30	38	46	

**CORE SUMMARY**

CORE POWER	89.9%	CALC SUB FLOW	91.3%	DP MEAS PSI	15.52
CORE FLOW	89.8%	OPER SUB FLOW	-1.2%	DP CALC PSI	20.52
LOAD LINE	100.0%	FLOW BASIS	MEAS	FEEDWTR FLOW MLB/HR	13.5

**APRM CALIBRATION**

	A	B	C	D
READING	100.4	100.6	100.2	100.2
AGAF	0.994	0.992	0.997	0.997

**TIP RUNS RECOMMENDED**

STRINGS:	NONE
DRIVE FLOW	MLB/HR
FEEDWTR TEMP	DEG.F

### Attachment 2 – FINAL 3D Case (Page 1)

FOR TRAINING USE ONLY

PAGE 1

			CLINTON CYCLE 18	SEQUENCE NO 23	
CORE PARAMETERS			3D MONICORE	today-2xxx xx:xx	CALCULATED
POWER	MWT	3125	PERIODIC LOG	today-2xxx xx:xx	PRINTED
POWER	MWE	1062		CASE ID	FMLD1950708205855
FLOW	MLB/HR	75.844	CALC RESULTS	RESTART	FMLD1950708195845
FPAPDR		0.824		LPRM SHAPE - FULL CORE	
SUBC	BTU/LB	23.49	Keff	1.0000	
PR	PSIa	1027.9	XE WORTH %	-2.52	LOAD LINE SUMMARY
CORE	MWD/sT	20850.8	XE/RATED	1.00	CORE POWER
CYCLE	MWD/sT	8741.6			89.9%
MCPR		1.268		CORE FLOW	89.8%
				LOAD LINE	96.0%

CORRECTION FACTOR: MFLCPR= 1.000 MFLPD= 1.000 MAPRAT= 0.999  
OPTION: ARTS DUAL LOOP MANUAL FLOW MCPRLIM= 1.240

#### MOST LIMITING LOCATIONS (NON-SYMMETRIC)

MFLCPR	LOC	MFLPD	LOC	MAPRAT	LOC	PCRAT	LOC
0.978	37-28	0.912	17-22-18	0.821	7-28- 5	0.798	41-28-16
0.976	39-26	0.912	7-28- 5	0.817	15-30-16	0.798	19-28-16
0.975	41-28	0.912	41-28-16	0.817	11-22-13	0.797	7-28- 5
0.973	11-28	0.902	19-28-16	0.816	19-26-16	0.791	39-22-20
0.940	13-32	0.896	15-38-18	0.813	19-30-15	0.782	9-22-13
0.939	9-26	0.895	21-26-16	0.803	7-26-12	0.779	11-20-13
0.937	11-20	0.893	17-26-16	0.802	9-36-13	0.779	17-26-16
0.930	39-22	0.889	9-22-13	0.798	11-30-11	0.777	11-28-15
0.927	7-28	0.889	11-20-13	0.796	9-26- 5	0.776	13-32-16
0.923	9-22	0.888	13-32-16	0.795	39-22-20	0.774	47-26-12

SEQ. A-2 C=MFLCPR D=MFLPD M=MAPRAT P=PCRAT \*=MULTIPLE CORE AVE AXIAL  
53 NOTCH REL PW LOC

					00	0.238	25
49					02	0.446	24
L					04	0.804	23
45					06	0.963	22
					08	1.056	21
41			P		10	1.158	20
L					12	1.191	19
37		18	C4	18	14	1.163	18
					16	1.182	17
33					18	1.220	16
L					20	1.215	15
29		4		6	22	1.187	14
					24	1.212	13
25					26	1.207	12
L					28	1.181	11
21		18	4	18	30	1.170	10
					32	1.166	09
17			D		34	1.131	08
L					36	1.085	07
13					38	1.072	06
					40	1.050	05
09					42	0.998	04
L				M	44	0.920	03
05	L	L	L	L	46	0.749	02
	04	08	12	16	48	0.237	01
	20	24	28	32			
	36	40	44	48			
	52						

#### CORE AVERAGE RADIAL POWER DISTRIBUTION

RING #	1	2	3	4	5	6	7
REL PW	0.890	1.084	1.113	1.102	1.155	1.145	0.727

SRRS: 3D.100; There are no retention requirements for this section

**Attachment 2 – FINAL 3D Case (Page 2)**

FOR TRAINING USE ONLY						PAGE 2
CLINTON CYCLE 18	INSTRUMENT READINGS/STATUS					SEQUENCE NO 23
	CALIBRATED LPRM READINGS					today-2xxx xx:xx CALCULATED
						today-2xxx xx:xx PRINTED
47D	40.1	49.8	55.7	45.9	30.2	CASE ID FMLD1950708205855
C	57.0	59.8	60.3	64.5	43.0	LPRM SHAPE - FULL CORE
B	61.2	63.6	60.9	69.2	41.9	
A	51.1	54.9	49.5	63.0	27.7	# OF TIPS REJECTED: 1
39D	35.4	51.3	58.4	61.1	57.5	46.0
C	55.8	62.7	60.3	59.6	66.5	67.9
B	60.0	65.2	60.7	57.0	66.7	70.2
A	52.7	61.1	50.4	44.4	54.7	63.8
31D	39.9	51.6	55.8	56.0C	55.7	48.5
C	63.7	71.1	68.3	63.1	72.6P	70.4
B	69.6	71.2	66.7	59.2	72.9	73.4
A	67.6M	69.0	61.1	45.4	71.1	71.8
23D	40.0	54.3	58.1	57.9	59.5	48.0
C	62.2	67.3D	63.7	59.2	66.8	69.0
B	67.1	67.1	61.4	56.9	66.6	71.1
A	66.5	58.6	48.7	44.2	55.6	66.1
15D	28.5	46.2	55.5	57.2	0.0	39.4
C	42.4	63.6	62.8	59.1	65.4	59.1
B	43.2	68.6	61.9	57.4	67.6	62.2
A	0.0	61.7	49.9	44.3	64.3	50.4
07D	29.1	39.3	40.7	36.6		
C	41.4	58.6	56.6	54.5		
B	42.3	64.8	61.8	58.3		
A	31.2	57.2	55.6	48.4		
	06	14	22	30	38	46

CORE SUMMARY						
CORE POWER	89.9%	CALC SUB FLOW	91.3%	DP MEAS PSI		15.52
CORE FLOW	89.8%	OPER SUB FLOW	-1.2%	DP CALC PSI		20.52
LOAD LINE	100.0%	FLOW BASIS	MEAS	FEEDWTR FLOW MLB/HR		13.5

APRM CALIBRATION				
	A	B	C	D
READING	100.4	100.6	100.2	100.2
AGAF	0.994	0.992	0.997	0.997

TIP RUNS RECOMMENDED	
STRINGS:	NONE
DRIVE FLOW	MLB/HR
FEEDWTR TEMP	DEG.F

### **INITIAL CONDITIONS**

You are the CRS.

The plant is operating at 90% power.

The A RO has completed CPS 9011.01 Control Rod/Position Indication Operability surveillance for all fully and partially withdrawn control rods.

### **INITIATING CUE**

Review the completed surveillance for approval. Report when task is complete.

**Job Performance Measure**  
**Authorize an Emergency Dose for a Life Saving Operation**

JPM Number: JPM450

Revision Number: 03

Date: 10/01/18

Developed By: Tony Jennings 10/01/18  
Instructor Date

Validated By: Matt Baker 4/30/19  
SME or Instructor Date

Reviewed By: Patt Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date



## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure EP-AA-113 Rev: 13  
Procedure EP-AA-113-F-02 Rev: B  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	8/8/14	New JPM.
01	7/16/15	Updated procedure references.
02	6/22/16	Updated procedure references
03	10/01/18	Update JPM format and procedure revisions.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an SRO admin JPM, no simulator setup is required.

### **INITIAL CONDITIONS**

An emergency life saving operation must be performed. The operation will take approximately 15 minutes in a 200 Rem/hr field. A volunteer, age 45, comes for your approval to perform the life saving operation.

### **INITIATING CUE**

As the Acting Station Emergency Director, take the actions needed to authorize the life saving operation.

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

.....

#### **Information For Evaluator's Use:**

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and copies of the following: <ul style="list-style-type: none"> <li>• EP-AA-113 Personnel Protective Actions</li> <li>• Partially filled out EP-AA-113-F-02 Authorization for Emergency Exposure</li> </ul>				
*1	Determines which TEDE limit may be exceeded.	<b>EP-AA-113 Attachment 1</b> <b>Reviews EP-AA-113 Attachment 1 Emergency Worker Exposure Limits and Associated Risks. Determines that the volunteer may receive &gt; 25 REM TEDE to perform a life saving operation.</b> <i>Evaluator Note – The candidate should check the block for “25 Rem TEDE (Authorized to receive greater than 25 Rem TEDE)” on EP-AA-113-F-02.</i>	—	—	—
2	Recognizes volunteer has not signed form for briefing.	Determines volunteer has not been briefed. <i>Evaluator Cue – I was told that you would perform the brief.</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*3</b>	Briefs volunteer IAW 4.3.2.	<b>EP-AA-113 Attachment 1</b> <b>Examinee briefs the following with the volunteer:</b> <ul style="list-style-type: none"> <li>• 50 rad will result in 2% of population affected by prodromal effects.</li> <li>• Risk of premature death (deaths per 1000 persons exposed) 5.3%</li> <li>• Average years of life lost if premature death occurs: 15 (years)</li> </ul>	—	—	—
	Obtain volunteer acknowledgement IAW 4.3.3.	<b>Examinee obtains signature of volunteer acknowledging briefing.</b>	—	—	—
<b>*4</b>	Obtains Radiation Protection (RP) Management Review Signature.	<b>EP-AA-113-F-02</b> <b>Form is signed by a Radiation Protection Manager.</b> <i>Evaluator Cue – When requested by candidate; sign, date and put current time as RP Manager.</i>	—	—	—
<b>*5</b>	Authorizes exposure.	<b>EP-AA-113-F-02</b> <b>Candidate signs as the Station Emergency Director for approval.</b>	—	—	—
<b>CUE</b>	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Authorize Emergency Dose for a Life Saving OperationJPM Number: JPM450 Revision Number: 03Task Number and Title: 997777.03 Emergency Plan Activities performed by an SRO.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.3.4	3.2	3.7

Suggested Testing Environment: ClassroomAlternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No

Reference(s):

- EP-AA-113 Personnel Protective Actions, Rev. 13
- EP-AA-113-F-02 Authorization for Emergency Exposure, Rev. B

**Actual Testing Environment:** ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 10 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_

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EP-AA-113-F-02

Revision B

Page 1 of 1

**AUTHORIZATION FOR EMERGENCY EXPOSURE**Name: Joe Nuke Date / Time: Today NowEmployee ID Number: 123456 Current Annual Exposure: 20 mRem

Reason For Request:

Life saving operation**REQUESTING AUTHORIZATION TO EXCEED:**

- ☐ 5 Rem TEDE (Authorized to receive greater than 5 Rem TEDE but less than 10 Rem TEDE)
- ☐ 10 Rem TEDE (Authorized to receive greater than 10 Rem TEDE but less than 25 Rem TEDE)
- ☐ 25 Rem TEDE (Authorized to receive greater than 25 Rem TEDE)

\_\_\_\_\_  
\* Emergency Worker Signature\_\_\_\_\_  
Date / Time

- \* Emergency Worker Exposure Limits and Associated Risks (EP-AA-113 Attachment 1) have been reviewed and the potential health affects are understood.

\_\_\_\_\_  
Rad. Protection Management (Review)\_\_\_\_\_  
Date / Time\_\_\_\_\_  
# Station Emergency Director (Authorization)\_\_\_\_\_  
Date / Time

- # The Shift Manager (Shift Emergency Director) may approve prior to transferring Command and Control to the Station Emergency Director.



### **INITIAL CONDITIONS**

An emergency life saving operation must be performed. The operation will take approximately 15 minutes in a 200 Rem/hr field. A volunteer, age 45, comes for your approval to perform the life saving operation.

### **INITIATING CUE**

As the Acting Station Emergency Director, take the actions needed to authorize the life saving operation.

**Job Performance Measure**  
**EAL Determination with NARS**

JPM Number: JPM018

Revision Number: 06

Date: 10/01/18

Developed By: Tony Jennings 10/01/18  
Instructor Date

Validated By: Matt Baker 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure OP-CL-108-101-1003-F-05 Rev: 7  
Procedure EP-AA-1003 Addendum 3 Rev: 2  
Procedure EP-AA-112-100-F-01 Rev: Z  
Procedure EP-AA-112-F-09 Rev: F  
Procedure EP-MW-114-100 Rev: 18  
Procedure EP-MW-114-100-F-01 Rev: J  
Procedure CPS 5067.03 Rev: 32c
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
00	07/23/09	New JPM.
01	6/4/12	Updated format and EAL changes.
02	8/5/14	Updated format and procedure references
03	6/22/15	Updated format and procedure references
04	6/21/16	Minor changes and EAL change.
05	09/21/17	Minor editorial change
06	10/01/18	Update JPM format and procedure revisions.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an SRO admin JPM, no simulator setup is required.

### INITIAL CONDITIONS

Refueling operations are in progress.

- Division 1 AC and DC Bus outages are in progress.
- The Division 2 Battery Charger just tripped and the voltage on the Division 2 DC bus has lowered to 105 VDC.

A RO reports – Hi-Hi Level Drywell Sump Equip/Floor Drain Annunciator (5067-3L).

### INITIATING CUE

**This JPM is time critical.**

You are to determine the appropriate Emergency Classification for these plant conditions and complete the NARS form. Activation of the ERO will be performed by the ERO Communicator.

Submit NARS Form to ERO Communicator when completed.

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

.....

#### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

- \* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and copies of the following: <ul style="list-style-type: none"> <li>• Shift Emergency Director binder</li> <li>• EP-AA-1003 Addendum 3 EALs/Bases</li> <li>• EP-MW-114-100-F-01 Nuclear Accident Reporting System (NARS) Form</li> <li>• CPS 5067-3L Hi-Hi Level Drywell Sump Equip/Flr Drn ARP</li> </ul>				
*1	Examinee evaluates EP-AA-1003 Addendum 3 to determine if EALs have been exceeded.	<p><b>Examinee reviews EP-AA-1003 Addendum 3 Cold Matrix EALs and determines that the CU3 (Loss of vital DC power for 15 minutes or longer) has been exceeded.</b></p> <p><i>Evaluator Cue: If asked, provide the following indications:</i></p> <ul style="list-style-type: none"> <li>• No change in RPV level</li> <li>• DW Equipment Drain Sump Pump – red light OFF, green light ON</li> <li>• DW Floor Drain Sump Pump – red light ON, green light OFF</li> <li>• Computer Point RE-BC402 (DW EQUIP DRN SUMP LVL) = 0.0 NOT HI-HI</li> <li>• Computer Point RF-BC402 (DW FLOOR DRN SUMP LVL) = 1.0 HI-HI</li> </ul> <p><i>Evaluator Cue: If asked, report that there are soot marks around the Div 2 Battery Charger output breaker but no fire.</i></p>	_____	_____	_____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>*1</b> (cont.)		<p><i>Evaluator Note: A 15-minute clock to declare the EAL starts as soon as the initiating cue is read and acknowledged via 3-part communication by the examinee. Record the time of the declaration below. The time declared must be no more than 15 minutes from the JPM Start Time.</i></p> <p><i>Record JPM Start Time _____</i></p> <p><i>Record Time EAL declared _____</i></p> <p><i>NOT longer than 15 minutes between the time EAL declared and JPM start time:</i></p> <p><i>YES / NO</i></p>			
<b>*2</b>	Examinee initiates required State/ Local notifications within 15 minutes of the event classification.	<p>EP-AA-112-100-F-01 Step 1.1.G</p> <p><b>Examinee records the following information on EP-MW-114-100-F-01, Nuclear Accident Reporting System (NARS) Form:</b></p> <p>4.2.1. UTILITY MESSAGE NO: 1</p> <p>4.2.2. STATE MESSAGE NO: N/A</p> <p>4.2.3. Block 1: (B) Drill/Exercise</p> <p><b>*4.2.4. Block 2: (C) Clinton</b></p> <p><b>*4.2.5. Block 3: (A) Unusual Event</b></p> <p><b>*4.2.6. Block 4:</b></p> <ul style="list-style-type: none"> <li>• <b>Time: Classification time</b></li> <li>• <b>Date: Today's date</b></li> <li>• <b>EAL #: CU3</b></li> </ul> <p>4.2.7. Accident Terminated</p> <ul style="list-style-type: none"> <li>• Time: N/A</li> <li>• Date: N/A</li> </ul>	_____	_____	_____



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*2 (cont.)		<p><b>*4.2.8. Block 5: (A) None</b>            4.2.9. Block 6: (A) Not Applicable  <b>*4.2.10.3. Block 7: 89 degrees (or value from PPDS)</b>  <b>*4.2.10.4. Block 8:</b></p> <ul style="list-style-type: none"> <li>(A) METERS/SEC: N/A</li> <li>(B) MILES/HR: 12 (or value from PPDS)</li> </ul> <p><b>*4.2.11. Block 9: (A) None</b>            4.2.12. Block 10:</p> <ul style="list-style-type: none"> <li>Additional information: None</li> </ul> <p>4.2.14. Approval Block</p> <ul style="list-style-type: none"> <li>Approval signature complete</li> <li>Verified with: N/A</li> </ul> <p><i>Evaluator Cue: If asked, provide the following indications:</i></p> <ul style="list-style-type: none"> <li>Block 5: No upward trend on PPDS Total Noble Gas Release Rate.</li> <li>Block 7: 89 degrees</li> <li>Block 8: 12 mph</li> <li>A verifier is NOT available.</li> </ul> <p><i>Evaluator Note: A 13 minute clock to provide the NARS form for transmittal starts as soon as the EAL declaration has been made. Record the time of the declaration below.</i></p> <p><i>Record Time EAL Declared _____            (from page 7)</i></p>			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*2 (cont.)		<p><i>Record Time NARS form provided to the State Communicator for transmittal (step 4.2.14 signed by candidate) _____</i></p> <p><i>Verify <u>NOT</u> longer than 13 minutes has elapsed between the time EAL Declared and NARS form provided to the State Communicator for transmittal:</i></p> <p>YES / NO</p>			
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
.....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: EAL Determination with NARSJPM Number: JPM018Revision Number: 06Task Number and Title: 999999.24 Preparation of notification form.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.4.30	2.7	4.1

Suggested Testing Environment: ClassroomAlternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☒ Yes ☐ No

Reference(s):

- OP-CL-108-101-1003-F-05 Shift Manager (SED) – EAL Guide, Rev 7
- EP-AA-1003 Addendum 3 Radiological Emergency Action Levels for Clinton Station, Rev. 2
- EP-AA-112-100-F-01 Shift Emergency Director Checklist, Rev. Y
- EP-AA-112-F-09 Emergency Public Address Announcements, Rev. F
- EP-MW-114-100 Midwest Region Offsite Notifications, Rev. 16
- EP-MW-114-100-F-01 Nuclear Accident Reporting System (NARS) Form, Rev. H
- CPS 5067.03 Alarm Panel Annunciators – Row 3, Rev 32c (Page 11 of 11 ONLY)

**Actual Testing Environment:** ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 20 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_

### **INITIAL CONDITIONS**

Refueling operations are in progress.

- Division 1 AC and DC Bus outages are in progress.
- The Division 2 Battery Charger just tripped and the voltage on the Division 2 DC bus has lowered to 105 VDC.

A RO reports – Hi-Hi Level Drywell Sump Equip/Floor Drain Annunciator (5067-3L).

### **INITIATING CUE**

**This JPM is time critical.**

You are to determine the appropriate Emergency Classification for these plant conditions and complete the NARS form. Activation of the ERO will be performed by the ERO Communicator.

Submit NARS Form to ERO Communicator when completed.

## Job Performance Measure

### **Manual Transfer of Distribution Panel Loads (NSPS Solenoid / RPS) from ALTERNATE POWER to INVERTER**

JPM Number: JPM026

Revision Number: 05

Date: 10/04/18

Developed By: Tony Jennings 10/04/18  
Instructor Date

Validated By: Matt Baker 5/1/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure CPS 3509.01 Rev: 22b  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	06/11/07	New JPM.
01	08/31/10	Updated Format. Updated Procedure Revision Number.
02	02/18/11	Updated Procedure Revision Number and K/A.
03	06/23/15	Updated Format. Updated Procedure Revision Number.
04	9/29/17	Added cue for status of the Inverter and Bypass lights
05	10/04/18	Update JPM format and procedure revisions.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an in-plant JPM, no simulator setup is required.



## INITIAL CONDITIONS

- Plant is in Mode 1.
- RPS Solenoid Inverter “A” has just been restored from a short maintenance period.
- The RPS Solenoid Inverter “A” has been energized per Section 8.3.6 steps 1 and 2. It is now desired to transfer the Dist. Panel loads back to the inverter per step 8.3.4.
- MSIV solenoid currents have been verified normal (solenoids are reset).
- The A and B solenoids for each Control Rod have been verified energized.

## INITIATING CUE

You are directed to manually Transfer Distribution Panel loads for RPS Solenoid Bus “A” FROM Alternate Power TO the Inverter per 3509.01, section 8.3.4.

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

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### Information For Evaluator’s Use:

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and a marked up copy of CPS 3509.01 INSTRUMENT POWER SYSTEM (IP) showing step 8.3.6 in progress (step 8.3.6.1, 8.3.6.2 complete and 8.3.6.3 circled).				
*1	Verify LOSS OF SYNC lamp not illuminated.	<p>CPS 3509.01 8.3.4.1</p> <p>At RPS Solenoid Inverter “A” verifies the loss of sync lamp is not illuminated.</p> <p><i>Evaluator Cue – If loss of sync lamp is illuminated, provide cue “Loss of sync lamp is <u>not</u> illuminated”.</i></p> <p><i>If asked, provide cue “Bypass Light is Lit and Inverter light is not Lit.”</i></p>	_____	_____	_____
2	<b>IF</b> MSIVs are open, <b>THEN</b> Verify MSIV solenoids are reset using ammeters in NSPS Panels 1H13-P661 and P662.	<p>CPS 3509.01 8.3.4.2</p> <p>Verifies MSIV Solenoids are reset.</p> <p><i>Evaluator Cue – If examinee request status of MSIV Solenoids from the B RO, report “MSIV Solenoids are reset”.</i></p> <p><i>Evaluator Note – Stated in the initial conditions all solenoids were reset.</i></p>	_____	_____	_____
3	Check A and B solenoids for each control rod to ensure they are energized prior to transferring sources (provided adequate time is available for the check).	<p>CPS 3509.01 8.3.4.3</p> <p>Ensures all control rods A and B solenoids are energized.</p> <p><i>Evaluator Note – Stated in the initial conditions all solenoids were energized.</i></p>	_____	_____	_____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*4</b>	Place TRANSFER SWITCH to INVERTER.	<b>CPS 3509.01 8.3.4.4</b> <b>At RPS Solenoid Inverter “A”, rotates Transfer Switch to INVERTER position.</b> <i>Evaluator Cue – Component is in the position you’ve described.</i>	—	—	—
5	Push and <u>then</u> release Power Monitor RESET push-button.	CPS 3509.01 8.3.4.5 At RPS Solenoid Inverter “A”, pushes then releases Power Monitor Reset push button. <i>Evaluator Cue – Component is in the position you’ve described.</i>	—	—	—
6	Verify power monitor alarms are out.	CPS 3509.01 8.3.4.6 At RPS Solenoid Inverter “A” power monitor, verifies alarms are out (Over/Under Freq and Over/Under Voltage lights). <i>Evaluator Cue – If power monitor lights are illuminated, provide cue “Over/Under Freq” and/or “Over/Under Voltage lights are <u>not</u> illuminated”.</i>	—	—	—
<b>*7</b>	Place 120 VAC OUTPUT BKR, CB-3 to ON.	<b>CPS 3509.01 8.3.4.7</b> <b>At RPS Solenoid Inverter “A”, places 120 vac Output Bkr, CB-3, to ON.</b> <i>Evaluator Cue – Component is in the position you’ve described.</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8	<b><u>IF</u></b> SMngt or NSED recommends, <b><u>THEN</u></b> At 1C71-S005A(B), NSPS Sol Pwr Bypass Regul Xfmr: Place AC INPUT (POWER) Bkr to OFF (down).	CPS 3509.01 8.3.4.8  Leaves the Bypass Regul Transformer energized and in standby <u>or</u> asks the MCR for direction on what status to leave the Bypass Regul Transformer in.  <i>Evaluator Cue – If requested, as the MCR direct the operator to leave the Bypass Regul Transformer energized and in standby. <b><u>DO NOT</u></b> turn the AC Input Bkr to OFF.</i>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
.....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Manual Transfer of Distribution Panel Loads (NSPS Solenoid/RPS) from  
ALTERNATE POWER to INVERTER**JPM Number:** JPM026**Revision Number:** 05**Task Number and Title:** 350901.23, Manual Transfer of Distribution Panel Loads (NSPS  
Solenoid) from Alternate Power to the Inverter for the RPS UPS.**K/A Number and Importance:**

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.1.30	4.4	4.0

**Suggested Testing Environment:** Classroom**Alternate Path:** ☐ Yes ☒ No **SRO Only:** ☐ Yes ☒ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- CPS 3509.01 Instrument Power System (IP), Rev. 22b

**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:** \_\_\_\_\_

### **INITIAL CONDITIONS**

- Plant is in Mode 1.
- RPS Solenoid Inverter “A” has just been restored from a short maintenance period.
- The RPS Solenoid Inverter “A” has been energized per Section 8.3.6 steps 1 and 2. It is now desired to transfer the Dist. Panel loads back to the inverter per step 8.3.4.
- MSIV solenoid currents have been verified normal (solenoids are reset).
- The A and B solenoids for each Control Rod have been verified energized.

### **INITIATING CUE**

You are directed to manually Transfer Distribution Panel loads for RPS Solenoid Bus “A” FROM Alternate Power TO the Inverter per 3509.01, section 8.3.4.

**Job Performance Measure**  
**Defeating HPCS Level 8 Isolation**

JPM Number: JPM228

Revision Number: 03

Date: 10/04/18

Developed By: Tony Jennings 10/04/18  
Instructor Date

Validated By: Matt Baker 5/1/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure CPS 4410.00C002 Rev: 4b  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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



**Revision Record (Summary)**

Revision	Date	Description
00	06/19/2007	Updated numbering convention. Old JPM number: 44100003LSN01.
01	4/4/11	Add instructions on where to provide initiating cue. Updated page 2 of JPM.
02	6/22/16	Updated procedure references.
03	10/04/18	Update JPM format.

### **SIMULATOR SETUP INSTRUCTIONS**

1. This is an in-plant JPM, no simulator setup is required.

## **INITIAL CONDITIONS**

You are the 'Extra' Reactor Operator. Reactor water level is unknown and RPV flooding is in progress. The 'B' Reactor Operator is unable to flood the RPV using the HPCS pump due to RPV level above Level 8.

## **INITIATING CUE**

Defeat HPCS Level 8 Isolation per 4410.00C002, DEFEATING HPCS INTERLOCKS. Report to the CRS when the task is complete.

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

.....

### **Information For Evaluator's Use:**

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the <b>Cue Sheet</b> and a copy of CPS 4410.00C002 DEFEATING HPCS INTERLOCKS.				
1	Locate EOP tool bag.	CPS 4410.00C002 2.0 Examinee locates EOP tool bag. <i>Evaluator Note – Do not allow seal to be broken on EOP tool bag. Once operator locates bag associated with 4410.00C002, direct him/her to use the Training Tool bag.</i>	—	—	—
*2	At panel 1H13-P663, Bay C, Row A13, Card 15 (HPCS, B21-N673C), ATM Trip Circuit 2, turn the SET adjustment screw counterclockwise 26 full turns.	<b>CPS 4410.00C002 3.2.a)</b> <b>Inside 1H13-P663, examinee locates ATM Trip Circuit 2 at Bay C, Row A13, Card 15 (HPCS, B21-N673C).</b> <b>Examinee simulates turning the set adjustment screw 26 turns in the COUNTERCLOCKWISE direction.</b> <i>Evaluator Cue – Component is in the position as described.</i> <i>Evaluator Note – Ensure examinee adequately discuss methodology for adjusting the screw 26 full turns.</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	At panel 1H13-P664, Bay B, Row A13, Card 09 (HPCS, B21-N673D), ATM Trip Circuit 2, turn the SET adjustment screw counterclockwise 26 full turns.	<b>CPS 4410.00C002 3.2.b)</b> <b>Inside 1H13-P664, examinee locates ATM Trip Circuit 2 at Bay B, Row A13, Card 9 (HPCS, B21-N673D).</b> <b>Examinee simulates turning the set adjustment screw 26 turns in the COUNTERCLOCKWISE direction.</b> <i>Evaluator Cue – Component is in the position as described.</i> <i>Evaluator Note – Ensure examinee adequately discuss methodology for adjusting the screw 26 full turns.</i>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
.....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Defeating HPCS Level 8 IsolationJPM Number: JPM228Revision Number: 03Task Number and Title: 441000.03 Complete Actions to Defeat HPCS System Interlocks per 4410.00 when in EOP's/SAG's.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
295031	EA1.04	4.3	4.2

Suggested Testing Environment: ClassroomAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s):

- CPS 4410.00C002 Defeating HPCS Interlocks, Rev. 4b

**Actual Testing Environment:** ☐ Simulator ☐ Control Room ☐ In-Plant ☒ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 10 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_

### **INITIAL CONDITIONS**

You are the 'Extra' Reactor Operator. Reactor water level is unknown and RPV flooding is in progress. The 'B' Reactor Operator is unable to flood the RPV using the HPCS pump due to RPV level above Level 8.

### **INITIATING CUE**

Defeat HPCS Level 8 Isolation per 4410.00C002, DEFEATING HPCS INTERLOCKS. Report to the CRS when the task is complete.

Job Performance Measure  
**OPERATE A SRV FROM THE REMOTE SHUTDOWN PANEL**

JPM Number: JPM272

Revision Number: 05

Date: 10/4/18

Developed By: Tony Jennings 10/4/18  
Instructor Date

Validated By: Aaron Marr 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date



## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure CPS 4003.01 Rev: 18a  
Procedure CPS 4003.01C001 Rev: 0a  
Procedure CPS 4003.01F003 Rev: 0
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00		New JPM.
01	11/17/09	Remove "Div 1 preferred for initiating cue. Combined 2 critical steps into 1.
02	11/17/12	Updated procedure references and converted to new format.
03	7/3/13	Updated procedure references.
04	6/30/16	Updated procedure references.
05	10/4/18	Updated procedure references. Updated to new JPM template.

### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM272 per step 2)
  - a. Initialize to any shutdown IC. Stabilize RPV level with the Motor Driven Reactor Feed Pump.
  - b. Close Inboard MSIVs.
  - c. Close 1B21-F016.
  - d. Place/verify the following remote transfer switches in Emergency:
    - 1) C61-HS501
    - 2) C61-HS502
    - 3) C61-HS508
    - 4) C61-HS509
    - 5) C61-HS510
    - 6) C61-HS511
  - e. This completes the setup for this JPM.
  - f. Ensure plant is stable and then save to a different IC if JPM is being used more than once. IC-220 (pw: 59567) is saved for the ILT 18-1 NRC Exam.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-220 (PW 59567) is saved for the ILT 18-1 NRC Exam.
  - b. Turn off annunciators and horns.
  - c. No simulator lesson plan is required once the IC has been established per step 1 above.
  - d. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
  - e. Freeze the simulator.
  - f. Place book of Remote Shutdown procedures in RSP Room.

## **INITIAL CONDITIONS**

You are an extra Reactor Operator. A plant condition has occurred that is forcing the crew to evacuate the MCR and establish control at the Remote Shutdown Panel.

## **INITIATING CUE**

Lower Reactor pressure to < 700 psig using Safety/Relief Valves from the Remote Shutdown Panel per CPS No. 4003.01C001 RSP - Pressure Control. Establish a Pressure band of 500-700 psig.

Other actions of 4003.01 have been or are being performed by other personnel.

Inform the CRS when the task is complete.

.....

### **Information For Evaluator's Use:**

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the <b>Cue Sheet</b> and a copy of CPS 4003.01C001 RSP - PRESSURE CONTROL.				
*1	Verify/Place C61-S10 to EMERG [Div 1 SRV solenoid control].	<b>CPS 4003.01C001 4.1</b> <b>Examinee places C61-S10 to EMERG.</b> <i>Evaluator Note – Examinee verifies the Div 1 SRV B21C-F051G, F051D, and F051C green indicating lights are lit.</i>	—	—	—
2	Verify/Place C61-HS527 to EMERG [Div 2 SRV solenoid control].	CPS 4003.01C001 4.2 Examinee places C61- HS527 to EMERG. <i>Evaluator Note – Verifies the Div 2 SRV B21C-F051G, F051D, and F051C green indicating lights are lit.</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	Control RPV pressure and cooldown by: <ul style="list-style-type: none"> <li>Varying RCIC flow rate.</li> <li>Operating Div 1 SRV solenoid controls (Preferred) or Div 2 SRV solenoid controls.</li> </ul>	<b>CPS 4003.01C001 4.3</b>  <b>Examinee operates Div 1 SRV solenoid controls (F051G, 51D, and/or 51C) (Preferred) or Div 2 SRV solenoid controls to maintain RPV pressure 500 to 700 psig.</b>  <i>Evaluator Note – The Examinee should use Division 1 SRV solenoid controls since they are preferred per the procedure. Use of Div 2 SRV controls should be documented as a competency hit, not as a failure of a critical step.</i>  <i>Evaluator Note – Temporarily exceeding the RPV pressure band of 500-700 psig should be documented as a competency hit, not as a failure of a critical step, <u>unless</u> pressure is lowered below 450 psig (pressure correlating to 100°F cool down rate limit).</i>	—	—	—
4	Informs the Control Room Supervisor.	Informs the Control Room Supervisor that RPV pressure is being maintained 500 to 700 psig.	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
.....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Operate a SRV from the Remote Shutdown PanelJPM Number: JPM272Revision Number: 05Task Number and Title: 400301.04 - Remote Shutdown Tasks that Do Require MCR Evacuation.

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
295016	AA1.08	4.0	4.0

Suggested Testing Environment: SimulatorAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s):

- CPS 4003.01 Remote Shutdown (RS), Rev. 18a
- CPS 4003.01C001 RSP – Pressure Control, Rev. 0a
- CPS 4003.01F003 RSP – Saturated Temperature / Pressure Correlation, Rev. 0

**Actual Testing Environment:** ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 10 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe 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:** \_\_\_\_\_

### **INITIAL CONDITIONS**

You are an extra Reactor Operator. A plant condition has occurred that is forcing the crew to evacuate the MCR and establish control at the Remote Shutdown Panel.

### **INITIATING CUE**

Lower Reactor pressure to < 700 psig using Safety/Relief Valves from the Remote Shutdown Panel per CPS No. 4003.01C001 RSP - Pressure Control. Establish a Pressure band of 500-700 psig.

Other actions of 4003.01 have been or are being performed by other personnel.

Inform the CRS when the task is complete.



# Exelon Nuclear

## ILT 18-1 NRC Exam

**Scenario Number:  
NRC Exam Scenario 1**

**Revision Number: 0**

**Date: 10/17/18**

<b>Developed By:</b>	<u>Bill Kiser</u> Instructor	<u>10/17/18</u> Date
<b>Validated By:</b>	<u>Tim Windingland</u> SME or Instructor	<u>4/30/19</u> Date
<b>Reviewed By:</b>	<u>Pat Bulpitt</u> Operations Representative	<u>6/3/19</u> Date
<b>Approved By:</b>	<u>Tony Jennings</u> Training Department	<u>6/3/19</u> Date

Appendix D

Scenario Outline

Form ES-D-1

Facility: <u>Clinton Power Station</u>	Scenario No.: <u>1</u>	Operating Test No.: <u>2019-301</u>
Examiners: _____ _____	Operators: _____ _____	
<p>Initial Conditions:</p> <ul style="list-style-type: none"> <li>• Mode 2 Rx Power at 7%.</li> <li>• Weather conditions are calm and clear.</li> </ul>		
<p>Turnover:</p> <ul style="list-style-type: none"> <li>• Power ascension is in progress. CPS 3002.01 Heatup and Pressurization is complete up to and including step 8.7.2. CPS 3004.01 Turbine Startup and Generator Synchronization is completed up to and including step 5.2.</li> <li>• Transient annunciator response for Feedwater Heater alarms has been authorized.</li> <li>• Priorities for the shift are as follows: <ul style="list-style-type: none"> <li>• Complete the remaining steps of CPS 3002.01 Heatup and Pressurization, including the following milestones: <ul style="list-style-type: none"> <li>• Power ascension to 10%.</li> <li>• Transition to Mode 1.</li> </ul> </li> <li>• Perform H<sub>2</sub> Mixing System Operability IAW CPS 9068.01 Hydrogen Mixing System Operability Test (Quarterly Run) starting at step 8.1. Two extra equipment operators are briefed, staged and ready to support the evolution.</li> </ul> </li> </ul>		
<p>Critical Tasks:</p> <ul style="list-style-type: none"> <li>• [CT-1] Inserts control rods to shutdown the reactor before containment temperature reaches 185°F.</li> <li>• [CT-2] Initiates at least one train of Containment Spray (CS): <ul style="list-style-type: none"> <li>• before anticipating blowdown or entering EOP-3 Blowdown, and</li> <li>• within the OK To Spray region of Figure O Containment Spray Initiation Limit curve.</li> </ul> </li> </ul>		

Event No.	Malfunction No.	Event Type*	Event Description
1	NA	R-ATC	Raise Power with Rods to enter Mode 1
2	LS06_MALF	C-ATC	(NEW) Control Rod Reed Switch Stuck Open
3	YP_XMFTB_4901 Failed	C-ATC	(NEW) Stuck IRM F Detector
4	N/A	N-BOP	(NEW) Perform CPS 9068.01 Hydrogen Mixing System Operability Test (Div 1)
5	1HG02CA-1A=1	TS-SRO	(NEW) 1HG02CA Compressor Motor Failure (Shaft Break)
6	A05_A02_A0103_4_TVM=2 A05_A02_A0108_5_TVM=2 A05_A02_A08S10_2=ON	C-BOP TS-SRO	(NEW) E22N654C RCIC Storage Tank Level Instrument Failure
7	YP_XMFTB_3917	C-BOP	CCW Pump 1A trip
8	YACUL029=50% YP_XMFTB_4963	M-All	(NEW) RT Leak in CNMT/ATWS (ARI Successful)
9	YP_XMFTB_4947	C-BOP	Div 1 RHR Pump Fails to Auto Start

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

NEW – Not used in the last two (2) NRC exams.

Appendix D

Scenario Outline

Form ES-D-1

Scenario No.: 1

Operating Test No.: 2019-301

**Narrative Summary**

Event #	Description
<b>1. Raise Power with Rods to enter Mode 1</b>	The crew will continue the power ascension to 10% by withdrawing control rods in accordance with Step 8.7.3 of CPS 3002.01 Heatup and Pressurization.
<b>2. Control Rod Reed Switch Stuck Open</b>	Following the attempted withdrawal of the second control rod/group, a rod position reed switch fails (stuck open) in one channel of the two channel position probe. The ATC will determine which channel is inaccurate and enter substitute position data IAW CPS 3304.02 Rod Control and Information System (RC&IS) Section 8.2.4 Entering Substitute Data. Once substitute position data has been substituted for the control rod with the failed reed switch, the crew will continue the power ascension.
<b>3. Stuck IRM F Detector</b>	When the ATC operator attempts to withdraw IRM detectors IAW CPS 3306.01 Source/Intermediate Range Monitors (SRM/IRM), the IRM F detector IN light will remain illuminated. The ATC Operator will inform the SRO, review CPS 3306.01 section 8.2.1 Stuck SRM/IRM Detector and recommends attempting to free the detector by driving it in the opposite direction. This action frees the stuck detector and allows all IRM detectors to be withdrawn when attempted the second time.
<b>4. Perform CPS 9068.01 Hydrogen Mixing System Operability Test (Div 1)</b>	Once the Mode Switch has been placed in Run, the SRO will direct the BOP to perform the Div 1 H <sub>2</sub> Mixing System Operability IAW CPS 9068.01 Hydrogen Mixing System Operability Test starting at step 8.1.
<b>5. 1HG02CA Compressor Motor Failure (Shaft Break)</b>	During the conduct of CPS 9068.01 Hydrogen Mixing System Operability Test (Quarterly Run), the BOP operator will note low dP (~0 psid) reading for the Div 1 Mixing Compressor (1HG02CA) and report to the SRO. If requested, the operator in the field will report a failed shaft coupling device. The BOP operator will secure the Div 1 Mixing Compressor. The SRO will evaluate and enter Technical Specification LCO 3.6.3.3, Action A.1 requiring the restoration of Containment/Drywell Hydrogen Mixing System to OPERABLE status within 30 days.
<b>6. E22N654C RCIC Storage Tank Level Instrument Failure</b>	Annunciator RCIC STORAGE TANK LEVEL LOW (5062-3D), HPCS OUT OF SERVICE (5062-8E) and HPCS D3 ATM CAL OR GR FAIL light come in due to level instrument 1E22-N654C failing low. Based upon review of the ARP the BOP operator will recommend taking manual actions for automatic actions that did not occur – Open 1E22-F015 HPCS Suppression Pool Suction Valve and Close 1E22-F001 HPCS Storage Tank Suction Valve. The SRO will evaluate and enter Technical Specification LCO 3.3.5.1 Action A.1 Enter the condition referenced in table 3.3.5.1-1 for the channel <u>and</u> D.2.1 Place channel in trip <u>or</u> D.2.2 Align the HPCS pump suction to the suppression pool.
<b>7. CCW Pump 1A trip</b>	The following annunciators are received: 5040-1B AUTO TRIP PUMP/MOTOR, 5040-2C LOW PRESS CCW HX OUTLET HEADER and 5003-3D/3K RECIRC MTR A/B WDG CLG WTR FLOW LO. BOP will observe that CCW Pump 1A has tripped, review the ARP and start a standby CCW pump.
<b>8. RT Leak in CNMT/ATWS (ARI Successful)</b>	A leak develops between the RWCU Regenerative and Non-Regenerative Heat Exchangers. Annunciators 5000-2F RWCU HI DIFF FLOW TIMER INITIATED and 5000-5A RWCU HI RM WEST TEMP HI are received. An automatic isolation occurs but the leak continues due to isolation valve leak-by. The MCR will scram the reactor per CPS 4001.02 Automatic Isolation. When the mode switch is placed in shutdown, the reactor will fail to scram requiring entry into EOP-1 RPV Control transitioning into EOP-1A ATWS RPV Control. Control rods will be successfully inserted when ARI is manually initiated. Once shutdown criteria is met, the SRO will exit EOP-1A and re-enter EOP-1. As containment pressure/temperature continues to rise, the SRO will enter EOP-6 Primary Containment Control. The SRO will direct the BOP operator to initiate containment sprays prior to exceeding figure N, Pressure Suppression Pressure.
<b>9. Div 1 RHR Pump Fails to Auto Start</b>	The Div 1 RHR Pump fails to automatically start when DW pressure reaches 1.68 psig and will have to be manually started.

Operator Actions

Event No.(s):		1	Page	1	of	2
<b>Description:</b> <b>Raise power with rods to ~10%</b>						
<b>Initiation:</b> Upon direction of the SRO						
<b>Cues:</b> None						
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>				
<p><u>Key Parameter Response:</u> Reactor power, Rod drive parameters (flow, dP), control rod position, BPV position</p> <p><u>Expected Annunciators:</u> None</p> <p><u>Automatic Actions:</u> None</p>						
	ATC	<ul style="list-style-type: none"> <li>• Per CPS 3304.02 Rod Control and Information System (RC&amp;IS), NF-CL-721-1002 Control Rod Move Sheets, and CPS 3002.01 Heatup and Pressurization section 8.7.3:                             <ul style="list-style-type: none"> <li>• Raise reactor power to ~ 10% using control rod withdrawal when directed by SRO.</li> </ul> </li> <li>• Monitors the following items listed below:                             <ul style="list-style-type: none"> <li>• RCIS status (LPAP, HPSP, Rod Blocks)</li> <li>• Bypass Valve (BPV) position</li> <li>• Power (APRM, LPRM, Gen Load)</li> <li>• Actual plant response compared to expected response</li> </ul> </li> <li>• Monitors reactor to ensure operations remain within established bands.                             <ul style="list-style-type: none"> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> </ul> </li> <li>• Performs coupling checks for each rod withdrawn to position 48.</li> <li>• Verifies IRM/APRM overlap by verifying all operable APRMs read between 5% and 12% with all operable IRMs on scale.</li> <li>• Places Reactor Mode Switch (RMS) in RUN.</li> <li>• Verifies 5004-1G, 5004-2G, 5005-1G, and 5005-2G Div 1 (4, 2, 3) MSL A (D, B, C) CL Scram Byp / Not in Run annunciators reset.</li> </ul>				
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.                             <ul style="list-style-type: none"> <li>○ Monitors reactor to ensure operations remain within established bands.</li> </ul> </li> <li>• Shifts P678 recorders 1C51-R603A/B/C/D to APRM.</li> </ul>				
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>• Positions himself/herself in proximity of the reactor operator, typically the location from which EOP actions are directed (OP-AA-300).                             <ul style="list-style-type: none"> <li>○ Notifies Shift Manager.</li> <li>○ Conducts a brief.</li> </ul> </li> </ul>				
<b>Terminus:</b> Clearly observable plant response from change in power level.						

NOTES:

- |   |
|---|
| <ul style="list-style-type: none"> <li>• Solid bullets are required actions</li> </ul>                          |
| <ul style="list-style-type: none"> <li>○ Hollow bullets are actions that may or may not be performed</li> </ul> |

## Operator Actions

Event No.(s): 2		Page 1 of 1
Description: <b>Control Rod Reed Switch Stuck Open</b>		
Initiation: During Event 1 and following selection of control rod 04-21, release <b>Control Rod Reed Switch Failure</b> .		
Cues: Annunciator 5006-2H Rod Out Block; Data Fault light on the OCM		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response</u>: Control rod position flashes between 'FF' and current position for the affected control rod.</p> <p><u>Expected Annunciators</u>: 5006-2H Rod Out Block</p> <p><u>Automatic Actions</u>: Rod withdraw block</p>		
	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands               <ul style="list-style-type: none"> <li>Monitors control room panels and notifies the SRO of any unusual or unexpected conditions.</li> </ul> </li> <li>Reports issue to SRO.</li> </ul> <p>Per 3304.02 Rod Control And Information System (RC&amp;IS), step 8.2.2 Position Data Faults:</p> <ul style="list-style-type: none"> <li>Determines channel 2 is inaccurate, and enters substitute position data from channel 1.</li> </ul> <p>Per 3304.02 RC&amp;IS, step 8.2.4 Entering Substitute Data:</p> <ul style="list-style-type: none"> <li>Selects/verifies individual drive mode.</li> <li>Depresses the SUBST POSITION push-button.</li> <li>Verifies:               <ul style="list-style-type: none"> <li>No other gang member of the rod having the defective reed switch is presently using substitute data.</li> <li>Data from the other channel is not substitute data.</li> <li>RAW DATA is not selected.</li> </ul> </li> <li>Selects the rod with the defective reed switch.</li> <li>Ensures that the rod is at the position at which the defective reed switch exists.</li> <li>Depresses the ENT SUBST push-button located in the PATTERN CONTROL section of the OCM.</li> <li>Verifies that the data has been entered by depressing the SUBST POSITION push-button.</li> </ul> <p>All rods with substitute data are indicated.</p>
	BOP	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>Acknowledges reports from ATC/BOP.</li> <li>Directs actions listed above.</li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li> <ul style="list-style-type: none"> <li>Informs Shift Manager.</li> <li>Conducts a brief.</li> </ul> </li> <li>Directs continuing power ascension.</li> </ul>
Terminus: Substitute position data has been entered for the affected control rod.		

NOTES:

## Operator Actions

Event No.(s): 3		Page 1 of 1
Description: <b>Stuck IRM F Detector</b>		
Initiation: During Event 1 and when the ATC attempts to withdraw IRM detectors		
Cues: IRM F detector IN light will remain illuminated		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> IRM F detector fails to withdraw</p> <p><u>Expected Annunciators:</u> None</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands               <ul style="list-style-type: none"> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> </ul> </li> <li>Reports issue to the SRO.</li> <li>Per CPS 3306.01 Source/Intermediate Range Monitors (SRM/IRM), section 8.1.2 Withdrawing SRM/IRM Detectors:               <ul style="list-style-type: none"> <li>Depresses the POWER ON push-button.</li> <li>Verifies the POWER ON lamp illuminates.</li> <li>Verifies each RETRACT PERMIT lamp is illuminated.</li> <li>Depresses each IRM select pushbutton.</li> <li>Depresses the DRIVE OUT push-button.</li> <li>Verifies the DRIVE OUT &amp; DRIVING OUT lamps illuminate.</li> <li>When the IRM detectors reach the full-out position, verifies the DRIVING OUT lamp extinguishes and the DETECTORS OUT lamps are illuminated.</li> <li>Depresses the DRIVE OUT push-button.</li> <li>Verifies the DRIVE OUT &amp; DRIVING OUT lamps extinguish.</li> <li>Depresses each IRM select pushbutton.</li> <li>Verifies each IRM SELECT lamp extinguishes.</li> <li>Depresses the POWER ON push-button.</li> <li>Verifies the POWER ON lamp extinguishes.</li> </ul> </li> <li>Per 3306.01 Source/Intermediate Range Monitors (SRM/IRM), step 8.2.1 Stuck SRM/IRM Detector:               <ul style="list-style-type: none"> <li>Stabilizes reactor power</li> <li>Attempts to free the IRM F detector by depressing the Drive In PB.</li> <li>Verifies power to the IRM F detector drive motor.</li> <li>Withdraws IRM F detector by depressing the Drive Out PB.</li> <li>Resumes with the reactor startup when directed by the SRO.</li> </ul> </li> </ul>
	BOP	<ul style="list-style-type: none"> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Monitors reactor to ensure operations remain within established bands.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>Acknowledges reports from ATC/BOP.</li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards, and approved procedures.               <ul style="list-style-type: none"> <li>Informs the Shift Manager.</li> <li>Conducts a brief.</li> </ul> </li> </ul>
Terminus: IRM F detector withdrawn.		

NOTES:

## Operator Actions

<b>Event No.(s):</b> 4, 5		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> <b>Perform CPS 9068.01 Hydrogen Mixing System Operability Test (Div 1) / 1HG02CA Compressor Motor Failure (Shaft Break)</b>		
<b>Initiation:</b> Following Event 3 and upon direction of the SRO		
<b>Cues:</b> Directed by SRO		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>General Note on Requirements for "Expected Annunciator Response" – OP-AA-103-102</u></p> <p>If this evolution was pre-briefed and "Expected Alarms" were reviewed, the following expectations apply:</p> <ul style="list-style-type: none"> <li>• "Expected alarms" may be flagged</li> <li>• When the annunciator comes in the operator will announce "Expected Alarm"</li> <li>• The annunciator response procedure (ARP) need not be entered since it has already been reviewed in the pre-brief.</li> </ul> <p>If a pre-brief was not conducted the operator should perform the following:</p> <ul style="list-style-type: none"> <li>• When an annunciator comes in the ARP should be referred to.</li> <li>• The annunciator may then be identified as an "Expected Alarm", flagged, and from that point on the ARP need not be referred to.</li> </ul>		
<p><u>Key Parameter Response:</u> CGCS Compressor 1A dP</p> <p><u>Expected Annunciators:</u> None</p> <p><u>Automatic Actions:</u> 1HG009A, CGCS Cmpr 1A Suct Valve opens when compressor (1HG02CA) starts.</p>		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>• Performs Plant Announcements.</li> <li>• Dispatches an Equipment Operator to investigate.</li> <li>• Relays Equipment Operator report to the SRO.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>• Performs Plant Announcements.</li> </ul> <p>Per CPS 9068.01, Hydrogen Mixing System Operability Test, Step 8.1 Drywell and Containment Atmosphere Mixing System Startup:</p> <ul style="list-style-type: none"> <li>• On 1H13-P800, place CGCS SYS DIV 1 IN TEST switch in TEST, and observe:             <ul style="list-style-type: none"> <li>• CGCS DIV 1 MOV'S IN TEST status light energizes.</li> <li>• NOT AVAILABLE CGCS SYSTEM DIVISION 1 annunciator 5041-7A alarms, unless already in due to plant conditions.</li> </ul> </li> <li>• Starts CGCS Hydrogen Cmpr 1A, 1HG02CA, and logs the start time.</li> <li>• Verifies 1HG009A, CGCS Cmpr 1A Suct Valve opens.</li> <li>• Directs EO to verify Supply Fan, 1VR08C starts on CNMT Bldg HVAC System Panel, 1PL68JA.</li> <li>• Records CGCS Compressor 1A dP from CGCS CMPR 1A, 1HG02CA flow indicator [1PDI-1HG052B].</li> <li>• Recognizes 1HG02CA flow indication [1PDI-1HG052B] is 0 psid.</li> <li>• Dispatches an Equipment Operator to investigate.</li> <li>• Relays Equipment Operator report to the SRO.</li> <li>• Directs EO to obtain Mixing Compressor, 1HG02CA vibration data at VC1, HC1, &amp; AC1 (compressor).</li> <li>• Secures Mixing Compressor, 1HG02CA when report of shaft break is received.</li> <li>• Restores CGCS System per CPS 9068.01.</li> </ul>

<b>Event No.(s):</b> 4, 5		<b>Page</b> 2 <b>of</b> 2
<b>Description:</b> <b>Perform CPS 9068.01 Hydrogen Mixing System Operability Test (Div 1) / 1HG02CA Compressor Motor Failure (Shaft Break)</b>		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>• Evaluates and enters ORM 2.5.2 Action 3.5.2 when the CGCS SYS DIV 1 IN TEST switch is in TEST.</li> <li>• Declares Div 1 H<sub>2</sub> Mixing System INOPERABLE, evaluates and enters Technical Specification LCO 3.6.3.3 A.1.</li> <li>• Exits ORM 2.5.2 Action 3.5.2 when the CGCS SYS DIV 1 IN TEST switch is in NORMAL.                         <ul style="list-style-type: none"> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> <li>○ Contacts Maintenance to investigate.</li> </ul> </li> </ul>
<b>Terminus:</b> CGCS Hydrogen Cmpr 1A (1HG02CA) secured. ITS LCO 3.6.3.3 evaluated.		

NOTES:



## Operator Actions

Event No.(s):		6	Page		1	of	1
Description: <b>E22N654C RCIC Storage Tank Level Instrument Failure</b>							
Initiation: Following Event 5 and upon direction of the Lead Examiner, insert <b>REMOTE 1</b> .							
Cues: 5062-3D, RCIC Storage Tank Level Low, 5062-8E, HPCS Out Of Service and HPCS D3 ATM Cal Or Gr Fail light							
Time	Position	Applicant's Actions or Behavior					
Key Parameter Response: RCIC Storage Tank Level							
Expected Annunciators: 5062-3D RCIC Storage Tank Level Low and 5062-8E HPCS Out Of Service							
Automatic Actions: 1E22-F015 HPCS Suppression Pool Suction Valve OPENS, 1E22-F001 HPCS Storage Tank Suction Valve CLOSES ( <b>Both automatic actions fail to occur</b> )							
	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> </ul>					
	BOP	<ul style="list-style-type: none"> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Reports issue to the SRO.</li> <li>Refers to the ARP for 5062-3D RCIC Storage Tank Level Low.</li> <li>Determines that automatic actions to transfer High Pressure Core Spray (HPCS) suction to the suppression pool (SP) failed to occur.</li> <li>When directed, transfers HPCS suction to the SP IAW CPS 3309.01 High Pressure Core Spray (HP) section 8.1.7.1 Shifting HPCS Suction to Suppression Pool.               <ul style="list-style-type: none"> <li>Verifies shut 1E22-F010, HPCS First Test Valve To Storage Tank.</li> <li>Verifies shut 1E22-F011, HPCS Second Test Valve To Storage Tank.</li> <li>Places HPCS MOV Test Prep Switch in TEST (optional).</li> <li>Opens 1E22-F015, HPCS Suppr Pool Suction Valve.</li> <li>Verifies 1E22-F001, HPCS Storage Tank Suction Valve shuts.</li> <li>If HPCS MOV Test Prep Switch was placed in TEST, returns HPCS MOV Test Prep Switch to NORMAL.</li> </ul> </li> </ul>					
	SRO	<ul style="list-style-type: none"> <li>Acknowledges reports from ATC/BOP.</li> <li>Directs actions listed above.</li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards, and approved procedures.</li> <li>Determines that automatic actions to transfer HPCS suction to the suppression pool failed to occur.</li> <li>Evaluates and enters ITS 3.3.5.1 Emergency Core Cooling (ECCS) Instrumentation, RA A.1, D.1, D.2.1 or D.2.2 for one or more channels inoperable (Note – D.1 actions <u>not</u> required with HPCS initiation capability maintained).</li> <li>Directs BOP to transfer HPCS suction to the SP IAW CPS 3309.01 High Pressure Core Spray (HP) section 8.1.7.1 Shifting HPCS Suction to Suppression Pool.</li> <li>Contacts Maintenance to investigate failure of RCIC suction shift to SP.</li> <li>Informs the Shift Manager.</li> <li>Conducts a brief.</li> <li>If MOV Test Prep Switch (HPCS) was placed in TEST, enters ORM 2.5.2 Action 3.5.2.</li> <li>When MOV Test Prep Switch (HPCS) is taken back to NORMAL at the completion of the evolution, exits ORM 2.5.2 Action 3.5.2.</li> </ul>					
Terminus: HPCS suction shifted to the SP. ITS 3.3.5.1 evaluated.							

NOTES:

## Operator Actions

Event No.(s): 7		Page 1 of 1
Description: <b>CCW Pump 1A trip</b>		
Initiation: Following Event 6 and upon direction of the Lead Examiner, insert <b>REMOTE 2</b>		
Cues: Annunciator 5040-1B Auto Trip Pump/Motor alarm.		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> Lowering CCW System Header Pressure <u>Expected Annunciators:</u> 5040-1B Auto Trip Pump/Motor, 5003-3D RECIRC MTR A WDG CLG WTR FLOW LO, 5003-3K RECIRC MTR B WDG CLG WTR FLOW LO <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Monitors control room panels, notifies SRO of unusual/unexpected conditions.</li> <li>Reports receipt of annunciators 5003-3D and 3K RECIRC MTR A/B WDG CLG WTR FLOW LO.</li> <li>Makes plant announcement.</li> <li>Dispatches EO to investigate CCW Pump trip.</li> <li>Monitors CCW Storage Tank Level.</li> <li>Monitors RR Pump motor and seal parameters.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>Reports issue to SRO.</li> <li>Monitors control room panels, notifies SRO of unusual/unexpected conditions.</li> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Refers to ARPs.</li> </ul> <p>Per 5040-1B Auto Trip Pump/Motor alarm:</p> <ul style="list-style-type: none"> <li>Determines CCW Pump A has tripped.</li> <li>Determines CCW Pump B is running.</li> <li>Starts CCW Pump C.</li> <li>Monitors CCW Storage Tank Level.</li> <li>Dispatches EO to investigate CCW Pump trip.</li> <li>Monitors RR Pump motor and seal parameters.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>Acknowledges reports from ATC/BOP.</li> <li>Directs actions listed above.</li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>Informs Shift Manager.</li> <li>Contacts Maintenance to investigate.</li> <li>Conducts a brief.</li> </ul>
Terminus: CCW Pumps 'B' and 'C' running.		

NOTES:

## Operator Actions

Event No.(s): 8, 9		Page 1 of 2
Description: <b>RT Leak in CNMT/ATWS (ARI Successful) / Div 1 RHR Pump Fails to Auto Start</b>		
Initiation: Following Event 7 and upon direction of the Lead Examiner, insert <b>REMOTE 3</b>		
Cues: Annunciators 5000-2F RWCU HI DIFF FLOW TIMER INITIATED and 5000-5A RWCU HI RM WEST TEMP HI		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> Rising Containment temperature and pressure. <u>Expected Annunciators:</u> 5000-2F RWCU HI DIFF FLOW TIMER INITIATED and 5000-5A RWCU HI RM WEST TEMP HI <u>Automatic Actions:</u> Group 4 isolation.		
[CT-1]	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Monitors control room panels, notifies SRO of unusual/unexpected conditions.</li> <li>Reports issue to the SRO.</li> <li>Refers to ARP.</li> </ul> <p>Per 5000-5A RWCU HX Rm West Temp Hi:</p> <ul style="list-style-type: none"> <li>Verifies a complete Group 4 isolation.</li> <li>Reports Containment pressure/temperature and drywell pressure rising.</li> <li>When directed by SRO <u>or</u> when DW Pressure reaches 1.3 psig and rising, places the Mode Switch in S/D.</li> <li>Determines Shutdown Criteria <u>is not</u> met.</li> <li>Arms and depresses Manual Scram Pushbuttons and initiates ARI.</li> <li><b>[CT-1] Inserts control rods to shutdown the reactor before containment temperature reaches 185°F.</b></li> <li>Determines Shutdown Criteria <u>is</u> met.</li> <li>Carries out Scram Choreography by reporting the following:               <ul style="list-style-type: none"> <li>Mode Switch in Shutdown, Power is...</li> <li>Rod status is...</li> <li>Reactor Power is... and trend</li> <li>Reactor pressure is... and trend</li> <li>Reactor level is... and trend</li> <li>Any EOPs with entry conditions (EOP-1, 6) (EOP-6 only if DW pressure is <math>\geq 1.68</math> psig)</li> </ul> </li> <li>Secures both RR Pumps within one minute of DW pressure exceeding 1.68 psig.</li> <li>Coordinates with BOP operator to monitor and control RPV level and pressure.</li> <li>Identifies the failure of RHR 'A' Pump to auto start when drywell pressure reaches 1.68 psig and manually starts pump.</li> <li>Performs EOP actions as directed by SRO.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>Reports issue to SRO.</li> <li>Reports Containment pressure/temperature and drywell pressure rising.</li> <li>Evacuates the Containment.</li> <li>Carries out ATWS Scram Choreography by:               <ul style="list-style-type: none"> <li>Making an Announcement                   <ul style="list-style-type: none"> <li>Reactor Scram with Failure to Scram</li> <li>Motor Driven Reactor Feed Pump may start</li> <li>Evacuate the RCIC room</li> <li>Evacuate the Containment</li> </ul> </li> <li>Determines if Shutdown Criteria is met and reports it to the CRS.</li> <li>Verifies Manual Scram/ARI have been initiated</li> </ul> </li> </ul>

Event No.(s): 8, 9		Page 2 of 2
Description: <b>RT Leak in CNMT/ATWS (ARI Successful) / Div 1 RHR Pump Fails to Auto Start</b>		
Time	Position	Applicant's Actions or Behavior
[CT-2]	BOP (cont.)	<p>Per EOP-6 Primary Containment Control:</p> <ul style="list-style-type: none"> <li>○ Starts Drywell Mixers, as directed by the SRO.</li> <li>● Monitors the start of the ECCS Systems on High Drywell Pressure.</li> <li>○ Identifies the failure of RHR 'A' Pump to auto start when drywell pressure reaches 1.68 psig and manually starts pump.</li> <li>● <b>[CT-2] Initiates at least one train of Containment Spray (CS):</b> <ul style="list-style-type: none"> <li>● before anticipating blowdown <u>or</u> entering EOP-3 Blowdown, and</li> <li>● within the OK To Spray region of Figure O Containment Spray Initiation Limit curve.</li> </ul> </li> <li>● Performs EOP actions as directed by SRO.</li> </ul>
[CT-1]	SRO	<ul style="list-style-type: none"> <li>● Acknowledges reports from ATC/BOP.</li> </ul> <p>Enters and executes 4001.02 Automatic Isolation and 4001.01 Reactor Coolant Leakage:</p> <ul style="list-style-type: none"> <li>○ Directs ATC/BOP to attempt to locate the source of the leakage.</li> <li>○ Determines the leak is unisolable.</li> <li>○ Conducts MCR crew preemptive briefing on the effects of Hi DW pressure on plant systems.</li> </ul> <p>Enters CPS 4100.01 Reactor Scram:</p> <ul style="list-style-type: none"> <li>● Directs ATC to scram the reactor when leak is determined to be unisolable <u>or</u> when DW Pressure reaches 1.3 psig and rising.</li> <li>● Carries out ATWS Scram Choreography by performing an Update: <ul style="list-style-type: none"> <li>● Update</li> <li>● Entering EOP-1 and 6</li> <li>● Transitioning to EOP-1A</li> <li>● Entering the Scram Off-Normal</li> <li>● End of Update</li> </ul> </li> </ul> <p>Enters EOP-1A, ATWS RPV Control, and directs the following:</p> <ul style="list-style-type: none"> <li>● <b>[CT-1] Inserts control rods to shutdown the reactor before containment temperature reaches 185°F.</b></li> <li>● Determines Shutdown Criteria is met when ARI pushbuttons have been armed and depressed and transitions from EOP-1A back to EOP-1.</li> </ul> <p>Enters EOP-1 RPV Control, and directs the following:</p> <ul style="list-style-type: none"> <li>● Stabilize RPV pressure between 800 to 1065 psig with Bypass Valves and then expands the pressure band to 500-1065 psig.</li> <li>● Control RPV water level between Level 3 to Level 8 by using Preferred Injection Systems.</li> </ul> <p>Enters EOP-6, Primary Containment Control, and directs the following:</p> <ul style="list-style-type: none"> <li>○ Start DW Mixing Compressors.</li> <li>● <b>[CT-2] Initiates at least one train of Containment Spray (CS):</b> <ul style="list-style-type: none"> <li>● before anticipating blowdown <u>or</u> entering EOP-3 Blowdown, and</li> <li>● within the OK To Spray region of Figure O Containment Spray Initiation Limit curve.</li> </ul> </li> </ul>
<b>Terminus:</b> RPV maintained Level 3 - Level 8 and 500 - 1065 psig. Containment Spray in operation.		

NOTES:

**Simulator Operator Instructions****Initial Setup**

1. Fill out plant status and have Turnover Sheet ready for the crew.
2. Verify daily lamp test completed.
3. Simulator key count: \_\_\_\_\_ keys.
4. Reset to IC-213 (PW 59567) @ 7% Power. If this is the first reset after swapping simulator loads, reset the IC twice.
5. Load the lesson plan for this scenario.
6. Verify the following commands are active:
  - YP\_XMFTB\_4963
  - YP\_XMFTB\_4901
  - YP\_XMFTB\_4947
7. Place simulator in RUN.
8. Verify RCIC Flow Controller is set at 620 gpm.
9. Verify the AR/PR server is running and stabilize AR/PR.
10. Verify Rod Drive pressure is in the expected range of 235-265 psid.
11. Provide pull sheets: **Step 20** is current - **Gang 5A** is at **Position 12**.
12. Make sure Sequence A is selected.
13. Make sure Individual Drive Mode is selected on the OCM.
14. Make sure a stop watch is available (if requested).
15. Make sure the FP bell toggle switch on the OG panel (is in the up position).
16. Procedures that are expected to be used during this scenario are:
  - CPS 3304.02 ROD CONTROL AND INFORMATION SYSTEM (RC AND IS)
  - CPS 3306.01 SOURCE INTERMEDIATE RANGE MONITORS SRM IRM
  - CPS 3309.01 HIGH PRESSURE CORE SPRAY (HPCS)
  - CPS 4001.01 REACTOR COOLANT LEAKAGE
  - CPS 4001.02 AUTOMATIC ISOLATION
  - CPS 4001.02C001 AUTOMATIC ISOLATION CHECKLIST
  - CPS 4100.01 REACTOR SCRAM
  - CPS 4401.01 EOP-1 RPV CONTROL
  - CPS 4402.01 EOP-6 PRIMARY CONTAINMENT CONTROL
  - CPS 4404.01 EOP-1A ATWS RPV CONTROL
  - CPS 5000.02 ALARM PANEL 5000 ANNUNCIATORS - ROW 2
  - CPS 5000.05 ALARM PANEL 5000 ANNUNCIATORS - ROW 5
  - CPS 5004.01 ALARM PANEL 5004 ANNUNCIATORS - ROW 1
  - CPS 5004.02 ALARM PANEL 5004 ANNUNCIATORS - ROW 2
  - CPS 5005.01 ALARM PANEL 5005 ANNUNCIATORS - ROW 1
  - CPS 5005.02 ALARM PANEL 5005 ANNUNCIATORS - ROW 2
  - CPS 5006.02 ALARM PANEL 5006 ANNUNCIATORS - ROW 2
  - CPS 5040.01 ALARM PANEL 5040 ANNUNCIATORS - ROW 1
  - CPS 5062.03 ALARM PANEL 5062 ANNUNCIATORS - ROW 3
  - CPS 5062.08 ALARM PANEL 5062 ANNUNCIATORS - ROW 8
  - ITS 3.3 INSTRUMENTATION (LCO 3.3.5.1)
  - ITS 3.6 CONTAINMENT SYSTEMS (LCO 3.6.3.3)

- ORM 2.5 ELECTRICAL POWER SYSTEMS (ORM 2.5.2)
17. Hang OOS tags on: None
  18. Identify T/S issues associated with OOS and turnover: None
  19. Operating Equipment: None
  20. Marked up copies:
    - CPS 3002.01 HEATUP AND PRESSURIZATION
    - CPS 9068.01 HYDROGEN MIXING SYSTEM OPERABILITY TEST
    - CPS 9068.01D001 HYDROGEN MIXING SYSTEM OPERABILITY TEST DATA SHEET
  21. Verify simulator conditions match the turnover.

**Event Triggers and Role Play****Event #**

1. **Raise power with rods to ~10% (Bring up OD-7 in booth)**
  - a. Event Trigger – None.
  - b. Role play
    - (1) If RE and/or Rod Verifier are requested – report to the MCR as the RE and/or Rod Verifier.
    - (2) If Plant Manager and Ops Department Head approval to enter Mode 1 requested (CPS 3002.01 step 8.7.4.1) – notify CRS that approval to enter Mode 1 has been granted.
    - (3) If NRC SRI notified of impending change to Mode 1 (CPS 3002.01 step 8.7.4.1.1) – acknowledge the notification.
    - (4) WEC (if requested to verify CPS 3002.01C002 Mode 1 Checklist status) (CPS 3002.01 step 8.7.4.2) – notify CRS that 3002.01C002 is complete and supports transition to Mode 1.
    - (5) Chemistry (if requested to verify chemistry requirements for Reactor Water and Condensate System for Mode 1 are within specifications) (CPS 3002.01 step 8.7.4.3) – report, “Chemistry requirements for Reactor Water and Condensate System for Mode 1 are within specifications”.
    - (6) Chemistry (when directed to perform CPS 3002.01 step 8.7.8 to perform reactor coolant and HVAC stack samples), acknowledge the report.
2. **Control Rod Reed Switch Stuck Open**
  - a. Event Trigger – During Event 1 and following selection of control rod 04-21, **Release Control Rod Reed Switch Failure.** and verify the following command(s):
    - (1) **LS06\_MALF.** (RC&IS FAILURE OF SINGLE OPEN REED SWITCH - CH 2).
  - b. Role play - None
3. **Stuck IRM F Detector (Bring up IRM/APRM Overlap Display in booth)**
  - a. Event Trigger – During Event 1 and when the ATC attempts to withdraw IRM detectors (verify YP\_XMFTB\_4901 is deleted when the Drive In / Driving In pushbutton is depressed).
  - b. Role play
    - (1) Maintenance (if requested): respond “Dispatching personnel to investigate.”
4. **Perform CPS 9068.01 Hydrogen Mixing System Operability Test (Div 1)**
  - a. Event Trigger – None
  - b. Role play
    - (1) EO (when requested) Report, “Supply Fan 1VR08C running” (Ref: CPS 9068.01, step 8.1.4).
    - (2) Booth (if requested) Report, “Containment pressure is indicating +0.1 psig on ATMs E12-N662A-D”.
5. **1HG02CA Compressor Motor Failure (Shaft Break)**
  - a. Event Trigger - CGCS Hydrogen Cmpr 1A (HG02CA) control switch to START and verify the following command(s):
    - (1) **1HG02CA-1A = Shaft Break.** (1HG02CA Compressor Motor Failure)
  - b. Role play
    - (1) EO (when directed to investigate): report “The ‘A’ Hydrogen mixing compressor shaft is sheared.”
    - (2) Maintenance (if requested): respond “Dispatching personnel to investigate.”

6. **E22N654C RCIC Storage Tank Level Instrument Failure**

- a. Event Trigger - Following Event 5 and upon direction of the Lead Examiner, **Activate Remote 1** and verify the following command(s):
  - (1) **A05\_A02\_A0103\_4\_TVM=2.** (5062-3D RCIC Storage Tank Level Low)
  - (2) **A05\_A02\_A0108\_5\_TVM=2.** (5062-8E HPCS Out Of Service)
  - (3) **A05\_A02\_A008S10\_2=ON.** (HPCS D3 ATM Cal Or Gr Fail PB Lite)
- b. Role play:
  - (1) Maintenance (if asked to investigate ATM malfunction) – “We’ll send a technician to the control room to gather information for the troubleshooting plan.”
  - (2) If RCIC Storage Tank Level ATMs are checked:

ATM	Value	Trip Status
1E22-N654C	(downscale)	Trip 1 LED is lit
1E22-N654G	Normal	Trip LEDs NOT lit

7. **CCW Pump 1A trip**

- a. Event Trigger – Following Event 6 and upon direction of the Lead Examiner, **Activate Remote 2** and verify the following command(s):
  - (1) **YP\_XMFTB\_3917.** (CCW Pump 1A Trip)
- b. Role play
  - (1) EO
    - a) (when asked to investigate trip of CCW Pump ‘A’) – “The breaker for CCW Pump ‘A’ is tripped on overcurrent and the motor is very hot to the touch.”
    - b) (when asked to check for proper operation of CCW Pump ‘C’) – “The ‘C’ CCW Pump is operating normally.”
  - (2) Maintenance (if asked to investigate tripped CCW pump) – report “dispatching personnel to investigate”.

8. **RT Leak in CNMT/ATWS (ARI Successful)**

- a. Event Trigger – Following Event 7 and upon direction of the Lead Examiner, **Activate Remote 3** and verify the following command(s):
  - (1) **YVCUMVLK\_14 100%.** (G33-F054 Seat Leakage)
  - (2) **YVCUMVLK\_13 100%.** (G33-F053 Seat Leakage)
  - (3) **YVCUMVLK\_2 100%.** (G33-F004 Seat Leakage)
  - (4) **YVCUMVLK\_1 100%.** (G33-F001 Seat Leakage)
  - (5) **YACUL029 50%.** (Leak At Pipe Between RGN HX A/Non RGN HX A)
- b. Role play:
  - (1) Maintenance (after 2 minutes from scram announcement) – report to the MCR as IMD.

9. **Div 1 RHR Pump Fails to Auto Start**

- a. Event Trigger – Initial condition
- b. Role play - none



**CT Bases Information**

1. [CT-1] Inserts control rods to shutdown the reactor before containment temperature reaches 185°F.
  - a) This critical task was derived from NUREG 1021 R11 Appendix D Simulator Testing Guidelines section D.1.a Safety Significance which states that action taken to prevent a challenge to plant safety is an example of a critical task. In this scenario, RPS fails to trip when DW pressure reaches 1.68 psig allowing primary coolant leakage to increase containment temperature. CPS 4001.01 Reactor Coolant Leakage directs a manual scram to be initiated if DW pressure is 1.3 psig and rising. Inserting a manual scram before containment temperature exceeds 185°F is a safety action for which operation or correct performance prevents exceeding the design temperature limit of the containment and is therefore critical.
2. [CT-2] Initiates at least one train of Containment Spray (CS):
  - a) within the OK To Spray region of Figure O Containment Spray Initiation Limit curve, and
  - b) before anticipating blowdown or entering EOP-3 Blowdown.
    - a. Per the EOP-TB, the Containment Spray Initiation Limit (Figure O) is the lowest containment pressure at which initiation of containment sprays will not result in an evaporative cooling pressure drop to below atmospheric pressure. Unrestricted operation of containment sprays in the shaded region of Fig. O could thus result in a negative differential pressure between the containment and atmosphere large enough to cause a loss of containment integrity. Initiating containment spray subsystem(s) within the OK TO SPRAY region of Figure N is therefore a critical task.
    - b. Per the EOP-TB, operation in the shaded region of Figure N Pressure Suppression Pressure could cause a loss of the pressure suppression function of the containment. Operating containment spray subsystem(s) as necessary to maintain containment pressure and suppression pool level within the OK region of Figure N is therefore a critical task.

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Turnover

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1. The plant is in Mode 2, operating at ~ 7% power.
  - a. CPS 3002.01 Heatup and Pressurization is complete up to and including step 8.7.2.
    - 1) Shell warming is in progress. An extra RO has been assigned to monitor parameters associated with this evolution.
  - b. CPS 3004.01 Turbine Startup and Generator Synchronization is completed up to and including step 5.2.
  - c. Control rods - Step 20 / Gang 5A @ position 12.
  - d. Transient annunciator response for feedwater heater level is authorized.
2. Status of Tagged Out Equipment
  - None
3. Today Day Shift
4. Weather Conditions
  - Calm and cool.
5. Thermal Limit Problems or concerns
  - Power ascension to 10% IAW CPS 3002.01 Heatup and Pressurization.
  - RE and Rod Verifier are available on request.
6. LCO's in effect
  - None
7. Surveillances in progress
  - None
8. Previous Shift Evolutions completed
  - None
9. Evolutions planned for the shift
  - First Priority – Complete the remaining steps of CPS 3002.01 Heatup and Pressurization, including the following milestones:
    - Power ascension to 10%.
    - Transition to Mode 1.
  - Perform H<sub>2</sub> Mixing System Operability IAW CPS 9068.01 Hydrogen Mixing System Operability Test (Quarterly Run) starting at step 8.1. The WEC will maintain the CPS 9094.01D001 Cumulative Data Report Data Sheet. Extra equipment operators are briefed, staged and ready to:
    - obtain data at the Div 1 Mixing Compressor.
    - monitor VR/VQ operations at 825' Control.
10. Risk Levels
  - Green
  - Protected Equipment: None

# Exelon Nuclear

## ILT 18-1 NRC Exam

**Scenario Number:  
NRC Exam Scenario 2**

**Revision Number: 0**

**Date: 10/10/18**

Developed By:	<u>Bill Kiser</u> Instructor	<u>10/10/18</u> Date
Validated By:	<u>Tim Windingland</u> SME or Instructor	<u>4/30/19</u> Date
Reviewed By:	<u>Pat Bulpitt</u> Operations Representative	<u>6/3/19</u> Date
Approved By:	<u>Tony Jennings</u> Training Department	<u>6/3/19</u> Date

## Appendix D

## Scenario Outline

Form ES-D-1

Facility: Clinton Power StationScenario No.: 2Operating Test No.: 2019-301Examiners: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_Operators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Initial Conditions:

- Mode 1 Rx Power at 25%. Plant startup is in progress.
- Weather conditions are calm and clear.
- Reactor Water Cleanup is in a single pump/single filter demin (F/D) lineup ('A' pump and 'A' F/D in service).

## Turnover:

- Priorities for the shift are as follows:
  - Main EHC pump 1B is in service. Shift hydraulic pumps IAW CPS 3105.02 MAIN EHC HYDRAULIC POWER UNIT (EH) to support hanging a clearance order – First Priority.
  - Continue plant startup by withdrawing control rods in sequence IAW CPS 3004.01 Turbine Startup And Generator Synchronization. Raise reactor power to 30% in preparation for Reactor Recirculation (RR) pump shift to fast speed.
- Transient annunciator response to Feedwater Heater alarms has been authorized.

## Critical Tasks:

- [CT-1] Shut SRV prior to Suppression Pool Temperature reaching 110°F.
- [CT-2] SC-1.1 ATC inserts a manual Scram before area temperature reaches max safe in any one area.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N-BOP	(NEW) Shift Main EHC Pumps
2	N/A	R-ATC	Raise Power With Rods to 30%
3	YPXMALE_72=50	C-BOP	Inadvertent opening of a SRV
4	RR_A_STATOR_WDG	C-ATC TS-SRO	(NEW) RR 'A' High Stator Temperature / Emergency Loop Shutdown
5	FC01BFC2PBFO	C-BOP	(NEW) 'B' FC Pump trip
6	RT_PUMPA_FAIL_TRIP YFCUPPSS_1	C-ATC	(NEW) RT Pump Shaft Shear/Failure to Trip on Low Flow
7	CAM1PR006ATV_VALUE1	TS-SRO	(NEW) 1RIX-PR006A Fuel Building Exhaust PRM fails high
8	YP_XMFTB_5082	M-All	(NEW) RPV Instrument Line Leak
9	CAM1PR006(A/B/C/D) TV_VALUE1 = 21-24 mr A11_A03_01_4_TVM 4 A11_A03_02_3_TVM 4 A18_A03_S11 = 1 A18_A03_S10 = 1 A12_A01_07_6_TVM 2 A12_A02_07_6_TVM 2	C-BOP	(NEW) Radiation Monitor fails to isolate VF/Startup VG
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor NEW – Not used in the last two (2) NRC exams.			

## Appendix D

## Scenario Outline

## Form ES-D-1

Scenario No.: 2Operating Test No.: 2019-301

## Narrative Summary

Event #	Description
1.	<p><b>Shift Main EHC Pumps</b> Following shift turnover, the SRO will direct the BOP operator to shift Main EHC Pumps IAW CPS 3105.02 MAIN EHC HYDRAULIC POWER UNIT (EH) section 8.1.2 Shifting Hydraulic Pumps to support hanging a clearance order.</p>
2.	<p><b>Raise Power With Rods to 30%</b> The crew will raise Reactor power with Control Rods to achieve ~30% Reactor Power IAW CPS 3004.01 Turbine Startup And Generator Synchronization in preparation for transferring RR pumps to FAST speed.</p>
3.	<p><b>Inadvertent opening of a SRV</b> Annunciators 5066-5B ADS OR SAFETY RELIEF VALVE LEAKING and 5067-8L SRV MONITORING SYSTEM TROUBLE come in due to SRV 1B21-F041A failing ~ 50% open. The BOP operator will diagnose and determine the problem is with 1B21-F041A. The BOP operator will sound the containment evacuation alarm, coordinate with the ATC and attempt to close the SRV IAW CPS 4009.01 Inadvertent Opening Safety/Relief Valve. The SRO will enter and execute CPS 4005.01 Loss of Feedwater Heating and direct the ATC to restore and maintain reactor power at or below the original power level. 1B21-F041A will shut when the control switch is placed in OFF at 1H13-P601.</p>
4.	<p><b>RR 'A' High Stator Temperature / Emergency Loop Shutdown</b> Annunciator 5003-1K RECIRCULATION PUMP/MOTOR A OR B TEMPERATURE HIGH is received. Per the ARP, the BOP Operator will check the Pump/Motor A&amp;B Temp Recorder (1B33-R601) and note that the 'A' RR pump motor stator temperatures (A/B/C phase windings) are reading 270° F and rising. The ARP directs the 'A' RR pump to be stopped if any motor winding temperature is &gt; 266° F and rising. The ATC Operator will perform an emergency loop shutdown of the 'A' RR loop IAW CPS 3302.01H001 RR Loop/Pump Shutdown And Isolation Hardcard. Additionally, the SRO will enter CPS 4008.01 Abnormal Reactor Coolant Flow and ITS 3.4.1 Required Action C.1.</p>
5.	<p><b>'B' FC Pump trip</b> Annunciators 5040-1E AUTO TRIP PUMP/MOTOR DIVISION 2 and 5040-7D TROUBLE FC SYSTEM LOCAL PNL 0PL45J comes in due to a trip of the 'B' Fuel Pool Cooling (FC) Pump 1FC02PB. The BOP Operator will diagnose the FC pump trip, dispatch an Equipment Operator to investigate, and shut FC supply/return containment isolation valves 1FC007, 1FC008, 1FC036 and 1FC037.</p>
6.	<p><b>RT Pump Shaft Shear/Failure to Trip on Low Flow</b> Annunciator 5000-2F RWCU HI DIFF FLOW TIMER INITIATED comes in momentarily (can be cleared), 5000-2C F-D SYSTEM TROUBLE reflashes (~ 10 seconds later) and 5000-1A PUMP FLOW LO is received (~ 1 minute later) due to a shaft shear of the 'A' RT pump. The ATC Operator will recognize the failure of the 'A' RT pump to trip and manually trip the 'A' RT pump. The ATC will inform the SRO and review the ARP for any additional actions.</p>
7.	<p><b>1RIX-PR006A Fuel Building Exhaust PRM fails high</b> A high alarm is received on the MCR AR/PR LAN for 1RIX-PR006A Fuel Building Exhaust PRM. The BOP will verify normal readings for 1RIX-PR006B, 6C, and 6D. The SRO will declare 1RIX-PR006A inoperable and enter TS 3.3.6.2 Secondary Containment Isolation Instrumentation Action A.1.</p>
8.	<p><b>RPV Instrument Line leak</b> An RPV instrument line will break resulting in a partial loss of RPV instrumentation, a steam leak in the secondary containment and EOP-8 entry. Secondary containment temperatures will rise requiring a reactor scram. Two areas in secondary containment will exceed Maximum Safe temperature requiring blowdown. The crew may Anticipate Blowdown using bypass valves prior to two areas reaching max safe.</p>
9.	<p><b>Radiation Monitor fails to isolate VF/Startup VG</b> Due to the RPV instrument line leak in the secondary containment, the VF exhaust radiation monitors trend up to the trip isolation set point but fail to actuate VF system isolation and start of VG requiring BOP to manually perform.</p>

## Operator Actions

<b>Event No.(s):</b> 1		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> Shift Main EHC Pumps		
<b>Initiation:</b> Following shift turnover		
<b>Cues:</b> Directed by SRO		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>General Note on Requirements for "Expected Annunciator Response" – OP-AA-103-102</u></p> <p>If this evolution was pre-briefed and "Expected Alarms" were reviewed, the following expectations apply:</p> <ul style="list-style-type: none"> <li>• "Expected alarms" may be flagged</li> <li>• When the annunciator comes in the operator will announce "Expected Alarm"</li> <li>• The annunciator response procedure (ARP) need not be entered since it has already been reviewed in the pre-brief.</li> </ul> <p>If a pre-brief was not conducted the operator should perform the following:</p> <ul style="list-style-type: none"> <li>• When an annunciator comes in the ARP should be referred to.</li> <li>• The annunciator may then be identified as an "Expected Alarm", flagged, and from that point on the ARP need not be referred to.</li> </ul>		
<p><u>Key Parameter Response:</u> EHC fluid pressure</p> <p><u>Expected Annunciators:</u> 5017-3A Auto Start EHC Fluid Pump 1A/1B</p> <p><u>Automatic Actions:</u> Auto start of EHC Pump 1B</p>		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> </ul> <p>Per CPS 3105.02, Main EHC Hydraulic Pump Unit (EH), Step 8.1.2:</p> <ul style="list-style-type: none"> <li>• Starts EHC Pump 1A.</li> <li>○ Ensures EHC Pump 1A discharge pressure ~ 1700 psig.</li> <li>• Allows EHC Pump 1A to run for at least 30 seconds.</li> <li>• Stops EHC Pump 1B.</li> <li>• Directs Equipment Operator to press the HFPM-B Test push-button.</li> <li>• Verifies EHC Pump 1B starts and its discharge pressure builds up to ~ 1720 psig.</li> <li>• Secures EHC Pump 1B by rotating its control switch counter clockwise to the stop position and then releasing the control switch to the AUTO position.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> </ul>
<b>Terminus:</b> EHC Pump 1A running, EHC Pump 1B secured.		

## NOTES:

- Solid bullets are required actions
- Hollow bullets are actions that may or may not be performed

Operator Actions

<b>Event No.(s):</b> 2		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> <b>Raise Power With Rods to 30%</b>		
<b>Initiation:</b> Following Event 1 and upon direction of the SRO		
<b>Cues:</b> None		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>Key Parameter Response:</u> Reactor power, Rod drive parameters (flow, dP), control rod position, Generator load</p> <p><u>Expected Annunciators:</u> Annunciator 5006-2H, Rod Out Block</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> <li>• Per CPS 3304.02 Rod Control and Information System (RC&amp;IS), NF-CL-721-1002 Control Rod Move Sheets, and CPS 3004.01 Turbine Startup And Generator Synchronization section 8.4.13:               <ul style="list-style-type: none"> <li>• Raises reactor power using control rod withdrawal when directed by SRO.</li> </ul> </li> <li>• Monitors the following items listed below:               <ul style="list-style-type: none"> <li>• RCIS status (LPAP, HPSP, Rod Blocks)</li> <li>• Power (APRM, LPRM, Gen Load)</li> <li>• Actual plant response compared to expected response</li> </ul> </li> <li>• Monitors reactor to ensure operations remain within established bands.               <ul style="list-style-type: none"> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> </ul> </li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.               <ul style="list-style-type: none"> <li>○ Monitors reactor to ensure operations remain within established bands.</li> </ul> </li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>• Positions himself/herself in proximity of the reactor operator, typically the location from which EOP actions are directed (OP-AA-300).               <ul style="list-style-type: none"> <li>○ Notifies Shift Manager.</li> <li>○ Notifies TSO.</li> <li>○ Conducts a brief.</li> </ul> </li> </ul>
<b>Terminus:</b> Clearly observable plant response from change in power level.		

NOTES:

## Operator Actions

<b>Event No.(s):</b> 3		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> Inadvertent opening of a SRV		
<b>Initiation:</b> Following Event 2 and upon direction of the Lead Examiner, insert <b>REMOTE 1</b>		
<b>Cues:</b> Annunciators 5066-5B ADS Or Safety Relief Valve Lifting and 5067-8L SRV Monitoring System Trouble		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>Key Parameter Response:</u> Reactor Power, RPV level, Suppression Pool temperature, Feedwater temperature</p> <p><u>Expected Annunciators:</u> 5066-5B ADS Or Safety Relief Valve Lifting and 5067-8L SRV Monitoring System Trouble</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> <li>○ Reports issue to SRO.</li> <li>● Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> </ul> <p>Per CPS 4009.01 Inadvertent Opening Safety/Relief Valves:</p> <ul style="list-style-type: none"> <li>○ Sounds the containment evacuation alarm.</li> </ul> <p>Per CPS 4005.01 Loss Of Feedwater Heating</p> <ul style="list-style-type: none"> <li>○ Reduces reactor power using RR flow or control rods to restore and maintain power <u>at or below</u> the original power level and &lt; 3473 MWth.</li> <li>○ Reports to SRO when SRV 1B21-F041A is shut.</li> </ul>
[CT-1]	BOP	<ul style="list-style-type: none"> <li>○ Reports issue to SRO.</li> <li>● Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> </ul> <p>Per CPS 4009.01 Inadvertent Opening Safety/Relief Valves:</p> <ul style="list-style-type: none"> <li>○ Sounds the containment evacuation alarm.</li> <li>● <b>[CT-1] Before Suppression Pool temperature reaches 110 °F, shuts the open SRV (1B21-F041A)</b> by placing the 1H13-P601 control switch to OPEN, and then back to OFF.</li> <li>○ Reports to SRO when SRV 1B21-F041A is shut.</li> </ul>
[CT-1]	SRO	<ul style="list-style-type: none"> <li>● Acknowledges reports from ATC/BOP.</li> <li>● Directs actions listed above.</li> <li>● Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>● Enters and executes CPS 4009.01 Inadvertent Opening Safety/Relief Valves</li> <li>○ Enters and executes CPS 4005.01 Loss Of Feedwater Heating.</li> <li>● <b>[CT-1] Before Suppression Pool temperature reaches 110 °F, directs shutting the open SRV (1B21-F041A).</b></li> <li>○ Enters ITS 3.2.1, 3.2.2, and 3.2.3 if FW temperature drops below 50 °F FFWTR curve of CPS 4005.01.</li> <li>○ May review ITS 3.4.4 Safety/Relief Valves (S/RVs) and verify applicable LCOs are met.</li> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> </ul>
<b>Terminus:</b> SRV 1B21-F041A is SHUT.		

NOTES:



<b>Event No.(s):</b> 4		<b>Page</b> 1 <b>of</b> 2
<b>Description:</b> RR 'A' High Stator Temperature / Emergency Loop Shutdown		
<b>Initiation:</b> Following Event 3 and upon direction of the Lead Examiner, insert <b>REMOTE 2</b> .		
<b>Cues:</b> Annunciator, 5003-1K Recirc Pmp Mtr A or B Temp Hi		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>Key Parameter Response:</u> Rising RR Pump 'A' motor stator phase winding temperatures and motor winding cooling water discharge temperature.</p> <p><u>Expected Annunciators:</u> 5003-1K Recirc Pmp Mtr A or B Temp Hi</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>• Reports issue to SRO.</li> <li>• Refers to ARP 5003-1K.</li> </ul> <p>Per 5003-1K Recirc Pmp Mtr A or B Temp Hi:</p> <ul style="list-style-type: none"> <li>○ Observes rising temperatures on computer points RR-BA005, RR-BA006, and RR-BA007.</li> <li>○ Directs BOP Operator to monitor Pump/Motor A&amp;B Temp Recorder display and report abnormalities to the SRO:                         <ul style="list-style-type: none"> <li>○ RR Pump 'A' motor stator phase [A/B/C] winding temperatures reading 270° F and rising.</li> <li>○ RR Pump 'A' motor winding cooling water discharge temperature is elevated.</li> </ul> </li> <li>• Recommends to SRO that RR Pump 'A' be immediately stopped due to all three motor winding temperatures &gt; 266° F and rising.</li> </ul> <p>Per 3302.01H001 RR Loop/Pump Shutdown and Isolation HARD CARD or 3302.01 section 8.2.3:</p> <ul style="list-style-type: none"> <li>• Determines Emergency Loop Shutdown is required due to high RR stator temperatures.</li> <li>• Lowers RPV water level setpoint to ~ 31 inches.</li> <li>• Trips RR Pump 1A by opening any of the following breakers:                         <ul style="list-style-type: none"> <li>○ Bkr 1A or 2A</li> </ul> </li> <li>• Shuts 1B33-F067A, RX Recirc Pump 1A Disch Block Valve.</li> </ul> <p>Per CPS 4008.01 Abnormal Reactor Coolant Flow:</p> <ul style="list-style-type: none"> <li>○ Monitors RR Pump seal pressure for signs of degradation.</li> <li>○ Checks operation on the Power to Flow map.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors Pump/Motor A&amp;B Temp Recorder display and reports:                         <ul style="list-style-type: none"> <li>○ RR Pump 'A' motor stator phase [A/B/C] winding temperatures reading 270° F and rising.</li> <li>○ RR Pump 'A' motor winding cooling water discharge temperature is elevated.</li> </ul> </li> <li>○ Makes plant announcement.</li> <li>• Demands an official 3D Monicore Case.</li> </ul>

<b>Event No.(s):</b> 4		<b>Page</b> 2 <b>of</b> 2
<b>Description: RR 'A' High Stator Temperature / Emergency Loop Shutdown</b>		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges report from ATC.</li> <li>• Determines that an Emergency Loop Shutdown of RR Pump 1A is required due to motor stator phase [A/B/C] winding temperatures reading 270° F and rising and directs the ATC to perform an emergency loop shutdown of RR Pump 1A.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>• Reviews and enters Tech Spec 3.4.1 Required Action C.1.</li> <li>• Enters and executes 4008.01 Abnormal Reactor Coolant Flow.                             <ul style="list-style-type: none"> <li>○ Enters and executes CPS 4100.02 Core Stability Control (due to initially being in OPRM enabled region before tripping RR Pump 'A').</li> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> </ul> </li> </ul>
<b>Terminus:</b> RR Pump 1A secured and ITS 3.4.1 evaluated.		

## Operator Actions

<b>Event No.(s):</b> 5		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> 'B' FC Pump trip		
<b>Initiation:</b> Following Event 4 and upon direction of the Lead Examiner, insert <b>REMOTE 3</b> .		
<b>Cues:</b> Annunciators 5040-1E, Auto Trip Pump/Motor Division 2 and 5040-7D, Trouble FC System Local Pnl 0PL45J		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<u>Key Parameter Response:</u> Upper Containment Pool level <u>Expected Annunciators:</u> 5040-1E, Auto Trip Pump/Motor Division 2, 5040-7D, Trouble FC System Local Pnl 0PL45J <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Performs Plant Announcements.</li> <li>○ Dispatches an Equipment Operator to investigate the trip of FC Pump 'B', support startup of FC Pump 'A', and check Upper Containment Pool level.</li> <li>○ Notifies ROC Operator to investigate alarm and take appropriate actions at 0PL45J.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Reports issue to SRO.</li> <li>• Refers to ARP.</li> <li>○ Performs Plant Announcements.</li> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> </ul> <p>Per CPS 5040-1E Auto Trip Pump/Motor Division 2:</p> <ul style="list-style-type: none"> <li>• Shuts the FC Upper Containment Pool Isolation Valves (1FC008, 007, 037, 036).</li> <li>○ Recommends preparations be made to shutdown FC Pump 'B' and start FC Pump 'A' per CPS 3317.01 Fuel Pool Cooling and Cleanup (FC) section 8.1.2 Switching FC Pump and Heat Exchanger.</li> <li>○ Dispatches an Equipment Operator to investigate the trip of FC Pump 'B', support startup of FC Pump 'A', and check Upper Containment Pool level.</li> <li>○ Notifies ROC Operator to investigate alarm and take appropriate actions at 0PL45J.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>• Enters and executes CPS 4006.02 Loss of Decay Heat Removal in Reactor Vessel Pool / Spent Fuel Pool.</li> <li>○ Informs Shift Manager.</li> <li>○ Contacts Maintenance to investigate.</li> <li>○ Conducts a brief.</li> </ul>
<b>Terminus:</b> Upper Containment Pool Isolation Valves (1FC008, 007, 037, 036) have been closed.		

NOTES:

## Operator Actions

<b>Event No.(s):</b> 6		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> RT Pump Shaft Shear / Failure to Trip on Low Flow		
<b>Initiation:</b> Following Event 5 and upon direction of the Lead Examiner, insert <b>REMOTE 4</b> .		
<b>Cues:</b> Annunciators 5000-2F RWCU Hi Diff Flow Timer Initiated and 5000-2C F-D System Trouble and 5004-1A Pump Flow Lo		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>Key Parameter Response:</u> Cleanup Sys Inlet Flow and F-D A Effluent Flow</p> <p><u>Expected Annunciators:</u> 5000-2F RWCU Hi Diff Flow Timer Initiated (momentary), 5000-2C F-D System Trouble (reflash ~ 10 seconds later) and 5000-1A PUMP FLOW LO (~ 1 minute later)</p> <p><u>Automatic Actions:</u> Automatic trip of all running RWCU pumps (failure to trip)</p>		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Reports issue to SRO.</li> <li>• Refers to ARPs for annunciators received.</li> <li>○ Dispatches an Equipment Operator to investigate F-D System Trouble and status.</li> </ul> <p>Per ARP Procedure for 5000-1A:</p> <ul style="list-style-type: none"> <li>• Recognizes the failure of the 'A' RT pump to auto trip and manually stops the 'A' RT pump.</li> <li>○ Refers to CPS 3303.01 Reactor Water Cleanup (RT) for restoration or shutdown directions.</li> <li>○ Verifies the RR Continuous Conductivity Monitor is in service.</li> <li>○ Notifies Chemistry that the RWCU system has been secured.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> <li>○ Reports issue to SRO.</li> <li>○ Dispatches an Equipment Operator to investigate F-D System Trouble and status.</li> <li>○ Verifies the RR Continuous Conductivity Monitor is in service.</li> <li>○ Notifies Chemistry that the RWCU system has been secured.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>○ Contacts Maintenance to investigate.</li> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> </ul>
<b>Terminus:</b> 'A' RT pump secured.		

NOTES:

Operator Actions

<b>Event No.(s):</b> 7		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> 1RIX-PR006A Fuel Building Exhaust PRM fails high		
<b>Initiation:</b> Following Event 6 and upon direction of the Lead Examiner, insert <b>REMOTE 5</b> .		
<b>Cues:</b> MCR AR/PR LAN alarm		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<u>Key Parameter Response:</u> 1RIX-PR006A fails high <u>Expected Annunciators:</u> AR/PR LAN Hi alarm <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Contacts RP to perform local radiation surveys.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Reports issue to SRO.</li> <li>• Reviews ARP 5140.63.</li> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands</li> <li>○ Dispatches Equipment Operator to investigate.</li> </ul> <p>Per CPS 3315.03 Radiation Monitoring (AR-PR) and 5140.63:</p> <ul style="list-style-type: none"> <li>• Determines alarm is not due to a spike.</li> <li>• Determines 1RIX-PR006B, 6C, and 6D are reading normally.</li> <li>○ Contacts RP to perform local radiation surveys.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>• Declares 1RIX-PR006A inoperable and enters ITS 3.3.6.2 Secondary Containment Isolation Instrumentation action A.1.</li> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> <li>○ Contacts Maintenance to investigate.</li> </ul>
<b>Terminus:</b> Technical Specification review complete.		

NOTES:

Operator Actions

Operator Actions

Event No.(s): 8		Page 1 of 2
Description: <b>RPV Instrument Line leak</b>		
Initiation: Following Event 7 and upon direction of the Lead Examiner, insert <b>REMOTE 6</b> .		
Cues: Multiple Annunciators		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Rising temperature on 1TR-CM327 Secondary Containment Temperature Recorder Point 14 (Aux Bldg Gas Cont Boundary).</p> <p><u>Expected Annunciators:</u> Multiple Annunciators</p> <p><u>Automatic Actions:</u> None</p>		
[CT-2]	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands. <ul style="list-style-type: none"> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Checks Power to Flow map.</li> <li>Reports EOP-8 entry when 1TR-CM327 secondary containment area temperature recorder point 14 reaches 104°F.</li> <li>Makes plant announcement to evacuate affected areas of Secondary Containment.</li> <li><b>[CT-2] Initiates a manual reactor scram when directed by the SRO and before 1TR-CM326 point 12 or 1TR-CM327 point 14 reaches 140°F.</b></li> </ul> </li> <li>Carries out Scram Choreography by reporting the following: <ul style="list-style-type: none"> <li>Mode Switch in shutdown, power is...</li> <li>Rod status is...</li> <li>Reactor power is ... and trend</li> <li>Reactor pressure is ... and trend</li> <li>Reactor water level is ... and trend</li> <li>Any EOPs with entry conditions (no values required).</li> </ul> </li> <li>Performs EOP actions as directed by the SRO. <ul style="list-style-type: none"> <li>Coordinates with BOP to monitor and control RPV level and pressure.</li> <li>If directed by SRO, Anticipates Blowdown per EOP-1 by fully opening all six Turbine Bypass Valves.</li> </ul> </li> </ul>
	BOP	<ul style="list-style-type: none"> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Checks Power to Flow map.</li> </ul> </li> <li>Reports EOP-8 entry when 1TR-CM327 secondary containment area temperature recorder point 14 reaches 104°F.</li> <li>Makes plant announcement to evacuate affected areas of Secondary Containment.</li> <li>Monitors secondary containment temperatures on 1H13-P678 recorders 1TR-CM326/327 (May be performed by Work Execution Center Supervisor).</li> <li>Reports secondary containment temperature parameters with trends at SRO direction.</li> <li>Reports to SRO when one area is above Max Safe temperature.</li> <li>Performs scram choreography actions. <ul style="list-style-type: none"> <li>Announces: <ul style="list-style-type: none"> <li>Reactor Scram</li> <li>Motor Driven Reactor Feed Pump may start</li> <li>Evacuate the RCIC room</li> <li>Evacuate the Containment</li> </ul> </li> <li>Determines rod status and reports shutdown criteria met to SRO.</li> </ul> </li> <li>Coordinates with ATC to monitor and control RPV level and pressure.</li> <li>Initiates ADS (Blowdown) if/when directed by the SRO.</li> </ul>

## Operator Actions

Event No.(s): 8		Page 2 of 2
Description: <b>RPV Instrument Line leak</b>		
Time	Position	Applicant's Actions or Behavior
	BOP	<ul style="list-style-type: none"> <li>○ If initiated, verifies ADS actuation using the following indications: <ul style="list-style-type: none"> <li>• SPDS</li> <li>• DCS Display 122 (2H) [Acoustic Monitor Input]</li> <li>• DCS Display 186 (7B) ['A' Solenoid Input]</li> <li>• 1H13-P601/P642 Solenoid Indicator Lights</li> <li>• 1H13-P866, Valve Flow Monitor Control Panel</li> <li>• 1H13-P614, ADS Safety Valve Temperature recorder 1B21-R614</li> <li>• Indirect indication via changes in RPV pressure, RPV level, MSL flows &amp; suppression pool temperatures.</li> </ul> </li> </ul>
[CT-2]	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>• Enters and executes CPS 4001.01 Reactor Coolant Leakage.</li> <li>• Enters and executes EOP-8 Secondary Containment Control.</li> <li>• <b>[CT-2] Directs a reactor scram before 1TR-CM326 point 12 or 1TR-CM327 point 14 reaches 140°F.</b></li> <li>• Enters and executes EOP-1 RPV Control.</li> <li>○ Anticipates Blowdown per EOP-1 <b>OR</b></li> <li>• Enters and executes EOP-3 Blowdown when 1TR-CM326 point 12 and 1TR-CM327 point 14 reaches 140°F.</li> </ul>
<b>Terminus:</b> When either a blowdown has been initiated and RPV level is being maintained between Level 3 and Level 8 <u>or</u> when Secondary Containment temperatures are lowering and all rods are inserted.		

NOTES:

## Operator Actions

Event No.(s): 9		Page 1 of 1
<b>Description: Radiation Monitor fails to isolate VF/Startup VG</b>		
<b>Initiation:</b> Triggered by RPV Instrument Line leak (Event 8)		
<b>Cues:</b> Annunciators 5050-7F, 5052-7F and AR/PR 1RIX-PR006B-D monitor alarms		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<u>Key Parameter Response:</u> 1RIX-PR006B-D Fuel Bldg Exhaust Rad Monitors <u>Expected Annunciators:</u> 5050-7F / 5052-7F High Rad Initiation SGTS Div 1 / 2 <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands</li> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Reports EOP-8 entry condition.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Monitors reactor to ensure operations remain within established bands</li> <li>Reports EOP-8 entry condition.</li> </ul> <p>Performs actions directed by SRO and CPS 5050-7F, 5052-7F, Hi Rad Initiation VG:</p> <ul style="list-style-type: none"> <li>Verifies alarming condition of 1RIX-PR006B-D.</li> <li>Places VG in service per CPS 3404.01H001.           <ul style="list-style-type: none"> <li>Stops Fuel Building Ventilation (VF) supply and exhaust fans.</li> <li>Isolates VF by closing 1VF04Y/9Y AND 1VF06Y/7Y.</li> <li>Performs startup of one Standby Gas (VG) train.</li> </ul> </li> </ul>
	SRO	<ul style="list-style-type: none"> <li>Acknowledges report from ATC/BOP.</li> <li>Directs actions listed above.</li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>Informs Shift Manager.</li> </ul>
<b>Terminus:</b> One VG train started and VF system shutdown and isolated.		

NOTES:



**Simulator Operator Instructions****Initial Setup**

1. Fill out plant status and have Turnover Sheet ready for the crew.
2. Verify daily lamp test completed.
3. Simulator key count: \_\_\_\_\_ keys.
4. Reset to **IC-210** (PW 59567) @ **25% Power**. If this is the first reset after swapping simulator loads, reset the IC twice.
5. Load the lesson plan for this scenario.
6. Verify the following commands are active:
  - None
7. Place simulator in RUN.
8. Verify RCIC Flow Controller is set at 620 gpm.
9. Verify the AR/PR server is running and stabilize AR/PR.
10. Verify Rod Drive pressure is in the expected range of 235-265 psid.
11. Provide pull sheets: **Step 27** is in progress - **Gang 10A** is at **Position 48**.
12. Make sure Sequence A is selected.
13. Make sure Individual Drive Mode is selected.
14. Make sure the FP bell toggle switch on the OG panel (is in the up position).
15. Generate a 3D Case.
16. Procedures that are expected to be used during this scenario are:
  - CPS 3004.01 TURBINE STARTUP AND GENERATOR SYNCHRONIZATION
  - CPS 3105.02 MAIN EHC HYDRAULIC POWER UNIT (EH)
  - CPS 3302.01 REACTOR RECIRCULATION (RR)
  - CPS 3302.01H001 RR LOOP PUMP SHUTDOWN AND ISOLATION HARD CARD
  - CPS 3303.01 REACTOR WATER CLEANUP (RT)
  - CPS 3304.02 ROD CONTROL AND INFORMATION SYSTEM (RC&IS)
  - CPS 3315.03 RADIATION MONITORING (AR-PR)
  - CPS 3317.01 FUEL POOL COOLING AND CLEANUP (FC)
  - CPS 3404.01 FUEL BUILDING HVAC (VF)
  - CPS 3404.01H001 PLACING STANDBY GAS TREATMENT INTO SERVICE HARDCARD
  - CPS 4001.01 REACTOR COOLANT LEAKAGE
  - CPS 4005.01 LOSS OF FEEDWATER HEATING
  - CPS 4008.01 ABNORMAL REACTOR COOLANT FLOW
  - CPS 4009.01 INADVERTENT OPENING SAFETY RELIEF VALVE
  - CPS 4100.01 REACTOR SCRAM
  - CPS 4401.01 EOP-1 RPV CONTROL
  - CPS 4406.01 EOP-8 SECONDARY CONTAINMENT CONTROL
  - CPS 4407.01 EOP-3 EMERGENCY RPV DEPRESSURIZATION (BLOWDOWN)
  - CPS 5000.01 ALARM PANEL 5000 ANNUNCIATORS-ROW 1
  - CPS 5000.02 ALARM PANEL 5000 ANNUNCIATORS-ROW 2
  - CPS 5003.01 ALARM PANEL 5003 ANNUNCIATORS-ROW 1
  - CPS 5006.03 ALARM PANEL 5006 ANNUNCIATORS-ROW 3
  - CPS 5017.03 ALARM PANEL 5017 ANNUNCIATORS-ROW 3
  - CPS 5040.01 ALARM PANEL 5040 ANNUNCIATORS-ROW 1
  - CPS 5040.07 ALARM PANEL 5040 ANNUNCIATORS-ROW 7
  - CPS 5050.07 ALARM PANEL 5050 ANNUNCIATORS-ROW 7

- CPS 5052.07 ALARM PANEL 5052 ANNUNCIATORS-ROW 7
- CPS 5066.05 ALARM PANEL 5066 ANNUNCIATORS-ROW 5
- CPS 5140.63 AR PR ANNUNCIATOR – FUEL BUILDING EXHAUST 1RIX-PR006 A,B,C,D
- ITS 3.3 INSTRUMENTATION (LCO 3.3.6.2)
- ITS 3.4 REACTOR COOLANT SYSTEM (LCO 3.4.1 and 3.4.4)

17. Hang OOS tags on: None

18. Identify T/S issues associated with OOS and turnover: None

19. Operating Equipment: None

20. Marked up copies:

- CPS 3004.01 Turbine Startup And Generator Synchronization

21. Verify simulator conditions match the turnover.

## Event Triggers and Role Play

**Event #**

1. **Shift Main EHC Pumps**
  - a. Event Trigger – None
  - b. Role play
    - (1) EO (when requested): report “EHC Pump 1A discharge pressure is 1700 psig.”
    - (2) EO (when requested to press the HFPM-B Test push-button to test the standby feature on EHC Pump 1B): acknowledge the order and then **release Event 1 – Shift Main EHC Pumps** and verify the following commands:
      - a) **A04\_A28\_S02 Start.** (EHC Fluid Pump 1B)
      - b) **A04\_A08\_03\_1\_TVM Steady.** (5017-3A Auto Start EHC Fluid Pump 1A/1B)
    - (3) EO (when requested): report “EHC Pump 1B discharge pressure is 1720 psig.”
2. **Raise Power With Rods to 30%**
  - a. Event Trigger – None
  - b. Role play – None
3. **Inadvertent opening of a SRV**
  - a. Event Trigger – Following Event 2 and when directed by the Lead Examiner, **Activate Remote 1** and verify the following command(s):
    - (1) **YPXFALSE\_72 = 50.** (F041A Fail to position)
  - b. Role play
    - (1) Maintenance (if requested): respond “Dispatching personnel to investigate.”
    - (2) RE (if requested): acknowledge report and respond, “On my way to MCR to review 3D Monicore case”.
4. **RR ‘A’ High Stator Temperature / Emergency Loop Shutdown**
  - a. Event Trigger - Following Event 3 and when directed by the Lead Examiner, **Activate Remote 2** and verify the following command(s):
    - (1) **RR\_A\_STATOR\_WDG.** (RR Pump A Stator Winding Temperature Control).
  - b. Role play
    - (1) RE (when contacted about the RR ‘A’ Stator Winding Failure) – “I am on my way to the MCR.”
5. **‘B’ FC Pump trip**
  - a. Event Trigger - Following Event 4 and when directed by the Lead Examiner, **Activate Remote 3** and verify the following command(s):
    - (1) **FC01BFC2PBFO.** (FC Pump B Bkr Tripped)
  - b. Role play
    - (1) EO (when directed to investigate trip of the FC Pump): report, “The breaker has tripped.”
    - (2) EO (if directed to support shifting FC Pumps): report, “I’m on my way to RP to receive my high rad brief”.
    - (3) EO (if directed to check upper containment pool level)
      - a) with annunciators 5040-5E and 5F **clear**: report, “Upper Pool level is above the top of the weir wall”.
      - b) with annunciators 5040-5E and 5F **locked in**: report, “Upper Pool level is several inches below the top of the weir wall”.
    - (4) Maintenance (when directed to investigate trip of the FC Pump): report “We’ll have electricians investigate the cause of the breaker trip and get a troubleshooting plan generated”.

6. **RT Pump Shaft Shear/Failure to Trip on Low Flow**

- a. Event Trigger - Following Event 5 and when directed by the Lead Examiner, **Activate Remote 4** and verify the following command(s):
  - (1) **RT\_PUMPA\_FAIL\_TRIP**. (Fail to trip RT Pump A on Low Flow)
  - (2) **YFCUPPSS\_1**. (RT Pump A Sheared Shaft)
- b. Role play
  - (1) EO (if directed to investigate loss of RT Pump A):
    - a) Via Camera – Report “No abnormalities noted using RT Pump Room A cameras”.
    - b) In person – Report, “I’m on my way to RP to receive my high rad brief”.
  - (2) EO (if A RT F-D status is requested): respond “the A RT F-D is in HOLD”.
  - (3) Chemistry (if requested):
    - a) Acknowledge report that RWCU system has been secured.
    - b) Report, “RR Conductivity Monitor is in service”.
    - c) Maintenance (if requested): respond “Dispatching personnel to investigate.”

7. **1RIX-PR006A Fuel Building Exhaust PRM fails high**

- a. Event Trigger – Following Event 6 and when directed by the Lead Examiner, **Activate Remote 5** and verify the following command(s):
  - (1) **CAM1PR006ATV\_VALUE1** (1RIX-PR006A CH1 Value Override)
- b. Role play
  - (1) RP (if asked to check radiation levels around 1RIX-PR006A): “Radiation levels are normal.”
  - (2) Maintenance (if requested to come to the MCR): acknowledge the order and report, I will brief out the technicians and send them up to the MCR”.

8. **RPV Instrument Line leak**

- a. Event Trigger - Following Event 7 and when directed by the Lead Examiner, **Activate Remote 6** and verify the following command(s):
  - (1) **YP\_XMFTB\_5082**. (Reference leg leak in Gas Control Boundary)
- b. Role play:
  - (1) Maintenance (after 2 minutes from scram announcement) – report to the MCR as IMD.
  - (2) WEC (if asked to determine which FP XL-3 points in alarm) – report, “Multiple AB 737E and 762E points are in alarm.”
  - (3) WEC (if directed) – report to MCR to monitor/report secondary containment temperatures.

9. **Radiation Monitor fails to isolate VF/Startup VG**

- a. Event Trigger – After **Remote 6** is actuated and following a 2:33 minute time delay, verify the following command(s):
  - (1) **CAM1PR006(A/B/C/D)TV\_VALUE1=20 mr – 24 mr**. (PR006A/B/C/D = 20 mr – 24 mr)
  - (2) **A12\_A01\_07\_6\_TVM2**. (Annunciator 5050-7F, Hi Rad Initiation SGTS Div 1)
  - (3) **A12\_A02\_07\_6\_TVM2**. (Annunciator 5052-7F, Hi Rad Initiation SGTS Div 2)
- b. Role play
  - (1) EO (If directed to S/D VF locally):
    - a) Wait 3 minutes then release – ‘Shutdown VF locally’.
    - b) Report “VF is shutdown locally”.

**CT Bases Information**

1. [CT-1] Shuts Safety Relief Valves (SRVs) before Suppression Pool temperature reaches 110°F.
  - a) This critical task was derived from ITS 3.6.2.1 Suppression Pool Average Temperature and EOP-6 Primary Containment Control. Per B3.6.2.1, Average temperature shall be  $\leq 110^{\circ}\text{F}$  when THERMAL POWER is  $\leq 1\%$  RTP. This requirement ensures that the plant will be shut down at  $> 110^{\circ}\text{F}$ . The pool is designed to absorb decay heat and sensible heat but could be heated beyond design limits by the steam generated if the reactor is not shut down. Taking mitigating actions to prevent an unnecessary reactor shutdown is therefore critical.
2. [CT-2] ATC inserts a manual scram before area temperature reaches max safe in any one area.
  - a) This critical task was derived from the BWR EOP Generic Critical Task listing, TQ-JA-CL-155-002 Rev. 3 Clinton Power Station Critical Task Writers Guide, and the EOP Technical Bases and applies when secondary containment temperatures are approaching max safe values. A task is essential to safety if its improper performance or omission by an operator will result in direct adverse consequences or significant degradation in the mitigative capability of the plant. In this instance, the scram reduces the rate of energy production and thus the heat input, radioactivity release, and break flow into the secondary containment. An action that mitigates the event and precludes heat input, radioactivity release, and break flow into the secondary containment is therefore critical.

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Turnover

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1. The plant is in Mode 1, operating at ~ 25% power.
  - a. CPS 3004.01 Turbine Startup And Generator Synchronization. Section 5.0 Prerequisites are complete. Steps 8.1.1 – 8.4.12 are complete. Step 8.4.13 in progress.
  - b. Transient annunciator response to Feedwater Heater alarms has been authorized.
  - c. Control rods - Step 27 is in progress / Gang 10A @ position 48.
  - d. Reactor Water Cleanup is in a single pump/single filter demin (F/D) lineup ('A' pump and 'A' F/D in service).
2. Status of Tagged Out Equipment
  - None
3. Today Day Shift
4. Weather Conditions
  - Calm and clear.
5. Thermal Limit Problems or concerns
  - Power ascension to 30% per CPS 3004.01 Turbine Startup and Generator Synchronization is in progress.
  - RE and Rod Verifier are available on request.
6. LCO's in effect
  - None
7. Surveillances in progress
  - None
8. Previous Shift Evolutions completed
  - None
9. Evolutions planned for the shift
  - First Priority – Main EHC pump 1B is in service. Shift hydraulic pumps IAW CPS 3105.02 MAIN EHC HYDRAULIC POWER UNIT (EH) to support hanging a clearance order.
  - Continue power ascension to 30% per CPS 3004.01 Turbine Startup and Generator Synchronization in preparation for transfer of RR pumps to fast speed.
10. Risk Levels
  - Green
  - Protected Equipment: None

# Exelon Nuclear

## ILT 18-1 NRC Exam

**Scenario Number:  
NRC Exam Scenario 3**

**Revision Number: 0**

**Date: 10/18/18**

Developed By:	<u>Bill Kiser</u> Instructor	<u>10/18/18</u> Date
Validated By:	<u>Tim Windingland</u> SME or Instructor	<u>5/1/19</u> Date
Reviewed By:	<u>Pat Bulpitt</u> Operations Representative	<u>6/3/19</u> Date
Approved By:	<u>Tony Jennings</u> Training Department	<u>6/3/19</u> Date

## Appendix D

## Scenario Outline

## Form ES-D-1

Facility: Clinton Power Station Scenario No.: 3 Operating Test No.: 2019-301

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Initial Conditions:

- Mode 1 Rx Power at RTP.
- Weather conditions are calm and clear.
- CRD Drive Water Pump 1A (1C11-C001A) is Out Of Service (OOS) for maintenance.

## Turnover:

- CPS 9067.01 Standby Gas Treatment System Train Flow / Heater Operability in progress on VG Train A. Train A has been operating for 3 hours and is ready to be secured. Fuel Building Exhaust radiation monitors (1RIX-PR006A-D) are INOPERABLE due to conduct of CPS 9067.01. The WEC Supervisor will make required entries to CPS 9094.01 Cumulative Data Report.
- First Priority – Secure VG Train A IAW CPS 9067.01 Standby Gas Treatment System Train Flow / Heater Operability and to restart the Fuel Building Ventilation (VF) System Train A.
- Maintain Rx Power at RTP.

## LCOs in effect:

- 3.3.6.2 (Secondary Containment Isolation Instrumentation) Required Actions A.1, B.1, C.1.1 & C.2.1

## Critical Tasks:

- [CT-1] Starts GC pump 'A' prior to bypass valves starting to open.
- [CT-2] Place mode switch in Shutdown within 38 minutes of CRD drive water pump 1B trip.
- 2 minutes (time for Equipment Operator to reach containment and report accumulator pressures).
- 16 minutes (time it takes for second accumulator trouble to come in).
- 20 minutes (once LCO 3.1.5 is met, time in which LCO required action must be taken).

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N-BOP TS-SRO	(NEW) Shutdown VG Train A / Restart VF Train A
2	A01_A08_A02_4 Manual A01_A08_A02_7 False	C-ATC	(NEW) Hotwell M/U Controller Failure
3	1VF04CA 1VF04CB	C-BOP TS-SRO	(NEW) VF Exhaust and Supply Fans Trip
4	A02_A05_03_8 TVM=2 TFRPC_4=Off TFRPC_3=Off TFRPC_2=Off TFRPC_1=On C34DA014subsf=True C34DA014subsv=-1	TS-SRO	(NEW) RWL Inoperable
5	1GC01PB=3	C-BOP	(NEW) Trip of Operating GC Pump (1GC01PB) / Failure of Standby GC Pump to Auto Start
6	YFCUCTPW_1	C-ATC	(NEW) 'A' RT Filter Demin Trip
7	YPXMALSE_18 3% (ramped over 3 minutes)	R-ATC	(NEW) Loss of Main Generator H <sub>2</sub> requiring power reduction
8	YP_XMFTB_4853	M-All	(NEW) Trip CRD Drive Water Pump 1B / Complete Loss of CRD / Scram
9	YP_XMFTB_4986	C-All	(NEW) Low SB Hydraulic Pressure due to reservoir leak
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor NEW – Not used in the last two (2) NRC exams.			



## Appendix D

## Scenario Outline

## Form ES-D-1

Scenario No.: 3Operating Test No.: 2019-301

## Narrative Summary

Event #	Description
<b>1. Shutdown VG Train A / Restart VF Train A</b>	The SRO will invoke ITS LCO 3.0.5 (allows unisolating penetrations for the operation of VG and VF under administrative control to demonstrate operability of duct monitors 1RIXPR006A-D). The SRO will then direct the BOP to secure VG Train A IAW CPS 9067.01 Standby Gas Treatment System Train Flow / Heater Operability and to restart the Fuel Building Ventilation (VF) System Train A. Once VF has been restarted and 1RIXPR006A-D channel checks completed SAT (Operability Restored), all associated ITS LCOs (3.0.5, 3.3.6.2) may be exited.
<b>2. Hotwell M/U Controller Failure</b>	Annunciator 5014-3B Not Fully Closed Cdsr Emerg M/U Vlv 1CD045 is received and rising hotwell level will be observed. The ATC will diagnose the failure of the Cond Make-Up Controller (1LC-CD057B) and will take manual control per CPS 3104.01 Condensate / Condensate Booster (CD/CB) section 8.6.1 Abnormal Condenser Hotwell Level HIGH Level.
<b>3. VF Exhaust and Supply Fans Trip</b>	The Fuel Building (VF) Exhaust and Supply Fans will trip causing a high differential pressure in the Fuel Building (5042-5D). The SRO will enter ITS 3.3.6.2 (Secondary Containment Isolation Instrumentation) Required Actions A.1, B.1, C.1.1 & C.2.1 and EOP-8 Secondary Containment Control. The VF system will not be able to be restored. The SRO will direct the BOP to manually initiate Standby Gas Treatment System Train A or B IAW CPS 3319.01 Standby Gas Treatment (VG) section 8.2.1 Manual Initiation to restore secondary containment differential pressure.
<b>4. RWL Inoperable</b>	Annunciator 5006-3H LOW POWER ALARM POINT will be received. The ATC operator will observe that the light above HI POWER SET PT, LO POWER ALM PT, and LO POWER SET PT are off and the Turbine 1 <sup>st</sup> Stage Pressure indication on the PPC shows "white data". The SRO will declare the RWL high power function INOPERABLE. Technical Specification LCO 3.3.2.1, Action A.1 will be evaluated requiring any control rod withdrawal to be suspended immediately.
<b>5. Trip of Operating GC Pump (1GC01PB) / Failure of Standby GC Pump to Auto Start</b>	Annunciator AUTO TRIP TURBINE AUXILIARY PUMP / MOTOR (5017-1A) comes in due to the GC1PB breaker trip. The standby GC pump will fail to auto start. The BOP operator will start the standby pump manually <u>before</u> bypass valves start to open, inform the SRO and review the ARP.
<b>6. 'A' RT Filter Demin Trip</b>	Annunciator 5000-2C F-D SYSTEM TROUBLE comes in due to a filter demin alarm on 1G36-P002. In addition, Annunciator 5000-2F RWCU HI DIFF FLOW TIMER INITIATED is received momentarily and clears. The ATC Operator will diagnose the trip of the 'A' Reactor Water Cleanup Filter Demin and dispatch an Equipment Operator (EO) to investigate. The ATC will then coordinate with the EO to lineup system for 2 pump / 1 filter demin operation.
<b>7. Loss of Main Generator H<sub>2</sub> requiring power reduction</b>	Annunciator TROUBLE GC SYSTEM LOCAL PNL 1PL10J (5018-2A) comes in and an Equipment Operator (EO) is dispatched to investigate. Main Generator H <sub>2</sub> pressure will begin slowly lowering. EO will report that Annunciators MACH GAS PRESSURE HIGH LOW (5021-1A) and DIFF'L SEAL OIL PRESS LOW (due to a malfunction of the Delta Pressure Reg Valve/ H <sub>2</sub> leak). The BOP will coordinate with the EO to bypass the Delta Pressure Reg Valve IAW CPS 3109.01 GENERATOR SEAL OIL (SO), stopping the leak. The loss of H <sub>2</sub> pressure will also require the ATC to lower reactor power within the limits of CPS 3111.01 GENERATOR GAS (HY, CO) Appendix A GENERATOR ESTIMATED CAPABILITY CURVES.
<b>8. Trip CRD Drive Water Pump 1B/Complete Loss of CRD/Scram</b>	Annunciators 5068-3B CRD DRIVE WATER PUMP AUTO TRIP and 5068-4B CHARGING WATER PRESSURE LOW are received. The BOP will determine that the running RD Pump tripped, review applicable ARPs and report ITS 3.1.5 as an applicable Tech Spec to the SRO. An Equipment operator (EO) will be dispatched to the containment to monitor HCU accumulator pressures. The ATC will coordinate with the EO to determine when each control rod scram accumulator pressure drops below 1520 psig (rendering it INOPERABLE). Technical Specification LCO 3.1.5 Control Rod Scram Accumulators Conditions A, B and D will be evaluated and entered. The SRO will direct the ATC to scram the reactor within 20 minutes of the second accumulator reported as < 1520 psig.
<b>9. Low SB Hydraulic Pressure due to reservoir leak</b>	Annunciator 5006-2L HPU TROUBLE is received due to low fluid pressure cause by a leak in the reservoir of the Steam Bypass & Pressure Control (SB&PC) Hydraulic Power Unit. Once the Generator has tripped off-line (Event 8), the crew will be unable to control pressure using the bypass valves (BPVs). The SRO will direct the ATC or BOP to control Reactor Pressure using an alternate pressure control method IAW EOP-1 RPV Control and CPS 4411.09 RPV Pressure Control Sources.

Operator Actions

<b>Event No.(s):</b> 1		<b>Page</b> 1 <b>of</b> 2
<b>Description:</b> Shutdown VG Train A / Restart VF Train A		
<b>Initiation:</b> Following shift turnover		
<b>Cues:</b> Directed by SRO		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>General Note on Requirements for "Expected Annunciator Response" – OP-AA-103-102</u></p> <p>If this evolution was pre-briefed and "Expected Alarms" were reviewed, the following expectations apply:</p> <ul style="list-style-type: none"> <li>• "Expected alarms" may be flagged</li> <li>• When the annunciator comes in the operator will announce "Expected Alarm"</li> <li>• The annunciator response procedure (ARP) need not be entered since it has already been reviewed in the pre-brief.</li> </ul> <p>If a pre-brief was not conducted the operator should perform the following:</p> <ul style="list-style-type: none"> <li>• When an annunciator comes in the ARP should be referred to.</li> <li>• The annunciator may then be identified as an "Expected Alarm", flagged, and from that point on the ARP need not be referred to.</li> </ul>		
<p><u>Key Parameter Response:</u> Secondary Containment differential pressure</p> <p><u>Expected Annunciators:</u> 5050-2G Auto Start SGTS Cooling Fan A and 5050-6J Running SGTS Cooling Fan A</p> <p><u>Automatic Actions:</u> SGTS Train A Cooling Fan 0VG03CA auto starts when SGTS Train A Exhaust Fan 0VG02CA is stopped</p>		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors secondary containment differential pressure during the evolution.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors secondary containment differential pressure during the evolution.</li> </ul> <p>Per CPS 9067.01 Standby Gas Treatment System Train Flow/Heater Operability steps 8.9 – 8.11:</p> <ul style="list-style-type: none"> <li>• Stops SGTS Trn A Exh Fan, 0VG02CA.</li> <li>• Verifies:                             <ul style="list-style-type: none"> <li>• 1VG16YA, Fuel Bldg Exh Inbd Isol Dmpr opens.</li> <li>• 1VG17YA, Fuel Bldg Exh Inbd Isol Dmpr opens.</li> <li>• 1VG02YA, SGTS Trn A Fuel Bldg Isol Dmpr shuts.</li> <li>• 1VG05YA, SGTS Trn A Fuel Bldg Suct Dmpr shuts.</li> <li>• 1VG04YA, SGTS Trn A Pmp Rms Suct Dmpr shuts.</li> <li>• 0VG01YA, SGTS Trn A Inlet Dmpr shuts.</li> <li>• 0VG02YA, SGTS Trn A Exh Fan 2CA Dmpr shuts.</li> <li>• SGTS Trn A Htr, 0VG04AA de-energizes.</li> <li>• SGTS Trn A Standby Clg Fan, 0VG03CA starts.</li> <li>• 0VG03YA, SGTS Trn A Cont Bldg Isol Dmpr opens.</li> <li>• 0VG04YA, SGTS Trn A Clg Fan 3CA Exh Damper opens.</li> <li>• (Local) Room Fan, 0VG05CA(B) stops (if room &lt; 100°F).</li> <li>• Annunciator AUTO START STANDBY GAS TREATMENT SYSTEM TRAIN A COOLING FAN 0VG03CA (5050-2G) is energized.</li> <li>• Annunciator RUNNING SGTS COOLING FAN A (5050-6J) is energized.</li> <li>• Both the red and white SYS INITIATE/SYS RESET permissive lights are de-energized.</li> <li>• Verify 0RIX-PR008 remains in service after Div 1 SGTS is shut down.</li> </ul> </li> </ul>

<b>Event No.(s):</b>	1		<b>Page</b>	2	<b>of</b>	2
<b>Description: Shutdown VG Train A / Restart VF Train A</b>						
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>				
	BOP	<ul style="list-style-type: none"> <li>(Record) Time SGTS Trn A Exh Fan, 0VG02CA was stopped on 9067.01D001 SGTS Train Flow Heater Operability Data Sheets.</li> </ul> <p>Per CPS 3404.01 Fuel Building HVAC (VF) section 8.1 Startup:</p> <ul style="list-style-type: none"> <li>Notifies RP of pending VF system start.</li> <li>Verifies 1VF04CA/CB, Fuel Bldg Exh Fans C/S to NORMAL.</li> <li>Verifies 1VF03CA/CB, Fuel Bldg Sply Fans C/S to NORMAL.</li> <li>Directs Equipment Operator to align local VF supply and exhaust fan handswitches.</li> <li>Verifies VG shutdown per CPS 3319.01 Standby Gas Treatment (VG).</li> <li>Opens 1VF04Y/9Y, Fuel Bldg Sply Outbd Isol Dmprs.</li> <li>Opens 1VF06Y/7Y, Fuel Bldg Sply Inbd Isol Dmprs.</li> <li>Directs Equipment Operator to start VF.</li> <li>Verifies 1RIX-PR019, Fuel Bldg CAM (EOP-8 Monitor) in NORMAL per CPS 3315.03 Radiation Monitoring (AR/PR).</li> <li>Directs Equipment Operator to red flag/green flag VF supply and exhaust fan control switches.</li> <li>Performs Channel Checks of 1RIX-PR006A-D.</li> </ul>				
	SRO	<ul style="list-style-type: none"> <li>Enters ITS 3.0.5 to restore VF to service under admin controls with 1RIX-PR006A-D INOP.</li> <li>Directs actions listed above.</li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>Exits ITS LCOs (3.0.5, 3.3.6.2) once Channel Checks of 1RIX-PR006A-D are complete.</li> </ul>				
<b>Terminus:</b> VG 'A' secured. VF system startup complete.						

**NOTES:**

- |   |
|---|
| <ul style="list-style-type: none"> <li>Solid bullets are required actions</li> </ul>                          |
| <ul style="list-style-type: none"> <li>Hollow bullets are actions that may or may not be performed</li> </ul> |

Operator Actions

<b>Event No.(s):</b> 2		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> Hotwell M/U Controller Failure		
<b>Initiation:</b> Following Event 1 and upon direction of the Lead Examiner, insert <b>REMOTE 1</b>		
<b>Cues:</b> Annunciator 5014-3B, Not Fully Closed Condenser Emergency Make-Up Valve 1CD045		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>Key Parameter Response:</u> Rising hotwell level</p> <p><u>Expected Annunciators:</u> 5014-3B Not Fully Closed Condenser Emergency Make-Up Valve 1CD045</p> <p><u>Automatic Actions:</u> Emergency Overflow Valve 1CD020 opens</p>		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Reports issue to SRO.</li> <li>○ Diagnoses failure of the 1LC-CD057B controller automatic function.</li> </ul> <p>Per CPS 3104.01 Condensate/Condensate Booster, Sections 8.6.1/8.3.2:</p> <ul style="list-style-type: none"> <li>• Manually controls Hotwell level between 36 and 55 inches as follows:                             <ul style="list-style-type: none"> <li>• Places Condenser Makeup Controller 1LC-CD057B in MANUAL</li> <li>• Controls Hotwell level between 36 and 55 inches.</li> </ul> </li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> <li>○ Reports issue to SRO.</li> <li>○ References ARPs, and ensures that the ATC Operator is taking actions per CPS 3104.01 Condensate/Condensate Booster (CD/CB).</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> <li>○ Contacts Maintenance to investigate 1LC-CD057B controller failure.</li> </ul>
<b>Terminus:</b> 1LC-CD057B in manual; hotwell level restored to normal band (36-55 inches).		

NOTES:

## Operator Actions

Event No.(s):		3	Page		1	of	2
Description: <b>VF Exhaust and Supply Fans Trip</b>							
Initiation: Following Event 2 and upon direction of the Lead Examiner, insert <b>REMOTE 2</b>							
Cues: Annunciator 5042-5D, High Diff Press Fuel Bldg and 5042-4D, Trouble VF System Local Pnl 1PL44J							
Time	Position	Applicant's Actions or Behavior					
<u>Key Parameter Response:</u> Secondary Containment Differential Pressure <u>Expected Annunciators:</u> 5042-5D High Diff Press Fuel Bldg and 5042-4D Trouble VF System Local Pnl 1PL44J <u>Automatic Actions:</u> Running Fuel Building Supply Fan (1VF03CA/B) trips at 0.0 in. W.C.							
	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands</li> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Dispatches Equipment Operator to investigate.</li> <li>Reports SPDS Alarm on high Secondary Containment differential pressure.</li> </ul>					
	BOP	<ul style="list-style-type: none"> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Recognizes that the Fuel Building (VF) system is shutdown.</li> <li>Reports issue to the SRO.</li> <li>Refers to the ARP for 5042-5D High Differential Pressure Fuel Building.</li> </ul> <p>Per 5042-5D High Differential Pressure Fuel Building:</p> <ul style="list-style-type: none"> <li>Dispatches Equipment Operator to investigate.</li> <li>Informs SRO to refer to ITS LCO 3.6.4.1 Secondary Containment for possible required actions.</li> </ul> <ul style="list-style-type: none"> <li>When directed, manually initiates Standby Gas Treatment (SBGT) System (Train A or B) IAW CPS 3319.01 Standby Gas Treatment (VG) section 8.2.1 Manual Initiation to restore secondary containment differential pressure <u>or</u> CPS 3404.01H001 Placing Standby Gas Treatment into Service.             <ul style="list-style-type: none"> <li>Verifies/secures all diesel exhaust sources which have the potential of being drawn into VG charcoal beds.</li> <li>Verifies either 0RIX-PR003 or PR004, SGTS Stack PRM in-service and operable.</li> <li>Notifies Chemistry <u>after</u> SGTS flow is initiated to perform sampling per CPS 9940.01, Weekly Chemistry Surveillance Log.</li> </ul> </li> <li>Monitors Secondary Containment pressure.</li> <li>Places the selected SGTS train in service by starting SGTS Trn A(B) Exh Fan, 0VG02CA(B).             <ul style="list-style-type: none"> <li>Verifies expected automatic actions:                 <ul style="list-style-type: none"> <li>1VG17YA(B) closes</li> <li>1VG16YA(B) closes</li> <li>1VG04YA(B) opens</li> <li>1VG05YA(B) opens</li> <li>1VG06YA(B) opens</li> <li>1VG02YA(B) opens</li> <li>0VG01YA(B) opens (modulates)</li> <li>0VG04AA(B) energizes (SGTS Trn A (B) Heater)</li> <li>0VG02YA(B) opens</li> <li>0VG05YA(B) opens</li> <li>0VG05CA(B) (SGTS Room Fan) starts (local indication)</li> </ul> </li> </ul> </li> </ul>					

<b>Event No.(s):</b> 3		<b>Page</b> 2 <b>of</b> 2
<b>Description:</b> VF Exhaust and Supply Fans Trip		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
	SRO	<ul style="list-style-type: none"> <li>Acknowledges reports from ATC/BOP.</li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards, and approved procedures.</li> <li>Evaluates and enters ITS LCO 3.3.6.2 Secondary Containment Isolation Instrumentation, RA A.1 and B.1 for no flow through 1PR006A, B, C and D.</li> <li>Directs BOP to manually initiate Standby Gas Treatment (SBGT) System (train A or B) IAW CPS 3319.01 Standby Gas Treatment (VG) section 8.2.1 Manual Initiation to restore secondary containment differential pressure <u>or</u> CPS 3404.01H001 Placing Standby Gas Treatment into Service.</li> <li>Enters and executes EOP-8 Secondary Containment Control.               <ul style="list-style-type: none"> <li>Informs the Shift Manager.</li> <li>Conducts a brief.</li> </ul> </li> </ul>
<b>Terminus:</b> VG operating, Secondary Containment dP restored. ITS LCO 3.3.6.2 evaluated.		

NOTES:

Operator Actions

<b>Event No.(s):</b> 4		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> <b>RWL Inoperable</b>		
<b>Initiation:</b> Following Event 3 and upon direction of the Lead Examiner, insert <b>REMOTE 3</b>		
<b>Cues:</b> Annunciator 5006-3H, Low Power Alarm Point		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>Key Parameter Response:</u> RPC Mode lights above LO POWER SET PT and LO POWER ALM PT and Turbine 1<sup>st</sup> Stage Pressure</p> <p><u>Expected Annunciators:</u> 5006-3H Low Power Alarm Point</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Reports issue to SRO.</li> <li>○ Refers to ARP.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> <li>○ Reports issue to SRO.</li> <li>○ Refers to ARP.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges report from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>○ Evaluates CPS 3005.01 Section 6.2 First Stage Turbine Pressure Impacts and determines that the Rod Withdrawal Limiter (RWL) is Inoperable</li> <li>• Evaluates and enters Technical Specification LCO 3.3.2.1 Control Rod Block Instrumentation Required Action A.1 requiring the suspension of any control rod withdrawal immediately (Control rod WITHDRAWAL in the current condition is PROHIBITED).</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>○ Informs Shift Manager.</li> <li>○ Informs TSO.</li> <li>○ Conducts a brief.</li> </ul>
<b>Terminus:</b> ITS 3.3.2.1 evaluated for inoperable RWL.		

NOTES:

## Operator Actions

Event No.(s):		5	Page		1	of	1
Description: <b>Trip of Operating GC Pump (1GC01PB) / Failure of Standby GC Pump to Auto Start</b>							
Initiation: Following Event 4 and upon direction of the Lead Examiner, insert <b>REMOTE 4</b>							
Cues: Annunciator 5017-1A, Auto Trip Turbine Auxiliary Pump/Motor and 5018-2A Trouble GC System Local Pnl 1PL10J							
Time	Position	Applicant's Actions or Behavior					
Key Parameter Response: Low GC flow/pressure (1PL10J)							
Expected Annunciators: 5017-1A, Auto Trip Turbine Auxiliary Pump/Motor and 5018-2A Trouble GC System Local Pnl 1PL10J							
Automatic Actions: Standby GC Pump auto starts on low discharge pressure (failure to auto start)							
	ATC	<ul style="list-style-type: none"> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Performs Plant Announcements.</li> <li>Dispatches an Equipment Operator to investigate 1PL10J annunciators and trip of the GC pump 'B' and failure of the standby pump to auto start.</li> </ul>					
[CT-1]	BOP	<ul style="list-style-type: none"> <li>Reports issue to SRO.</li> <li><b>[CT-1] Recognizes the failure of the standby pump to auto start and manually starts GC pump 'A' prior to bypass valves starting to open.</b></li> <li>Refers to ARP.</li> <li>Performs Plant Announcements.</li> <li>Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>Monitors reactor to ensure operations remain within established bands.</li> <li>Dispatches an Equipment Operator to investigate 1PL10J annunciators and trip of the GC pump 'B' and failure of the standby pump to auto start.</li> </ul>					
[CT-1]	SRO	<ul style="list-style-type: none"> <li>Acknowledges reports from ATC/BOP.</li> <li>Directs actions listed above.</li> <li><b>[CT-1] Recognizes the failure of the standby pump to auto start and directs starting GC pump 'A' prior to Main Turbine Bypass Valves starting to open.</b></li> <li>Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>Contacts Maintenance to investigate.</li> <li>Informs Shift Manager.</li> <li>Conducts a brief.</li> </ul>					
Terminus: GC Pump 'A' in operation.							

NOTES:



Operator Actions

<b>Event No.(s):</b> 6		<b>Page</b> 1 <b>of</b> 1
<b>Description:</b> 'A' Reactor Water Cleanup Filter Demin Trip		
<b>Initiation:</b> Following Event 5 and upon direction of the Lead Examiner, insert <b>REMOTE 5</b> .		
<b>Cues:</b> Annunciators 5000-2C, F-D System Trouble and 5000-2F, RWCU Hi Diff Flow Timer Initiated		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<u>Key Parameter Response:</u> RWCU system flow and RT A F-D flow		
<u>Expected Annunciators:</u> 5000-2C F-D System Trouble and 5000-2F RWCU Hi Diff Flow Timer Initiated		
<u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.</li> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>• Reports issue to SRO.</li> <li>• Refers to the ARPs.</li> <li>○ Dispatches an Equipment Operator to investigate.</li> <li>• Per CPS 3303.01 Reactor Water Cleanup (RT) section 8.3.2.1 or 8.1.3., throttles 1G33-F044 RWCU Filter/Demin Bypass to maintain ~300 gpm flow with two (2) pumps.</li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of any unusual or unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> <li>○ Dispatches an Equipment Operator to investigate.</li> </ul>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> <li>○ Contacts Maintenance to investigate.</li> </ul>
<b>Terminus:</b> Reactor Water Cleanup aligned for 2 pump, 1 F-D operation.		

NOTES:

## Operator Actions

<b>Event No.(s):</b> 7		<b>Page</b> 1 <b>of</b> 2
<b>Description:</b> <b>Loss of Main Generator H<sub>2</sub> requiring power reduction</b>		
<b>Initiation:</b> Following Event 6 and upon direction of the Lead Examiner, insert <b>REMOTE 6</b>		
<b>Cues:</b> Annunciator 5018-2A, Trouble Generator Cooling System Local Panel 1PL10J		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<u>Key Parameter Response:</u> Hydrogen Pressure <u>Expected Annunciators:</u> 5018-2A Trouble Generator Cooling System Local Panel 1PL10J <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.               <ul style="list-style-type: none"> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Reports issue to the SRO.</li> <li>○ Per CPS 3111.01 Generator Gas (HY, CO), reviews Generator Estimated Capability Curve and recommends lowering generator load to within the range delineated by the current gas pressure.</li> </ul> </li> <li>• Inserts control rods per the control rod sequence and/or lowers Recirc Flow with the Loop Flow Controllers to lower power to within the range delineated by the current gas pressure (~1040 MWe at 55 psig H<sub>2</sub> pressure and 230 MVARs).               <ul style="list-style-type: none"> <li>○ Directs an Equipment Operator to investigate.</li> </ul> </li> </ul>
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.               <ul style="list-style-type: none"> <li>○ Monitors reactor to ensure operations remain within established bands.</li> <li>○ Reports issue to the SRO.</li> <li>○ Makes plant announcement.</li> </ul> </li> <li>• Refers to ARP for 5018-2A Trouble Generator Cooling System Local Panel 1PL10J.               <ul style="list-style-type: none"> <li>○ Directs an Equipment Operator to investigate.</li> <li>○ Per CPS 3111.01 Generator Gas (HY, CO), reviews Generator Estimated Capability Curve and recommends lowering generator load to within the range delineated by the current gas pressure.</li> </ul> </li> </ul> <p>Per CPS 3109.01, Generator Seal Oil (SO), coordinates with an Equipment Operator to bypass the Delta Press Reg Valve (1SOH19):</p> <ul style="list-style-type: none"> <li>• Throttles OPEN Delta Press Reg Vlv Bypass (1SOH21) and controls seal oil pressure at 6-10 psi greater than hydrogen pressure.</li> <li>• Directs Equipment Operator to shut Delta Press Reg Vlv Inlet (1SOH18).</li> <li>• Directs Equipment Operator to shut Delta Press Reg Vlv Outlet (1SOH19).</li> <li>○ Coordinates with Equipment Operator to restore H<sub>2</sub> pressure IAW CPS 3111.01 Section 8.1.4 Adjust/Maintain Generator H<sub>2</sub> Pressure to 75 psig.</li> </ul>

<b>Event No.(s):</b> 7		<b>Page</b> 2 <b>of</b> 2
<b>Description:</b> <b>Loss of Main Generator H<sub>2</sub> requiring power reduction</b>		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Per CPS 3111.01 Generator Gas (HY, CO), reviews Generator Estimated Capability Curve and directs lowering generator load to within the range delineated by the current gas pressure.</li> <li>• Notifies as soon as practical, but within 15 minutes, TSO/MISO of any change in generator real or reactive load.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.               <ul style="list-style-type: none"> <li>○ Informs Shift Manager.</li> <li>○ Contacts Maintenance to investigate.</li> <li>○ Conducts a brief.</li> </ul> </li> </ul>
<b>Terminus:</b> Generator Gas pressure is stable. Observable power decrease has been observed.		

NOTES:

Operator Actions

Event No.(s): 8, 9		Page 1 of 3
<b>Description: Trip CRD Drive Water Pump 1B / Complete Loss of CRD / Scram / Low SB Hydraulic Pressure due to reservoir leak</b>		
<b>Initiation:</b> Following Event 7 and upon direction of the Lead Examiner, insert <b>REMOTE 7</b>		
<b>Cues:</b> Annunciators 5068-3B CRD Drive Water Pump Auto Trip and 5068-4B Charging Water Pressure Low		
<b>Time</b>	<b>Position</b>	<b>Applicant's Actions or Behavior</b>
<p><u>Key Parameter Response:</u> CRD cooling water flow, CRD charging water pressure and CRDM temperatures.</p> <p><u>Expected Annunciators:</u> 5068-3B CRD Drive Water Pump Auto Trip and 5068-4B Charging Water Pressure Low</p> <p><u>Automatic Actions:</u> None</p>		
<b>[CT-2]</b>	<b>ATC</b>	<ul style="list-style-type: none"> <li>• Monitors reactor to ensure operations remain within established bands.                             <ul style="list-style-type: none"> <li>○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Reports issue to SRO.</li> <li>○ Dispatches Equipment Operator(s) to monitor HCU accumulator pressures and investigate the B CRD pump trip.</li> </ul> </li> <li>• Refers to ARP/procedure.</li> </ul> <p>When it is determined that two or more rod scram accumulators are INOPERABLE and cannot be restored:</p> <ul style="list-style-type: none"> <li>○ Attempts to perform a Rapid Plant Shutdown IAW CPS 3005.01 Unit Power Changes (RR FCV HPU's fail if attempted).</li> </ul> <li>• <b>[CT-2] Places mode switch in Shutdown within 38 minutes of insertion of REMOTE 7 (trip of CRD drive water pump 1B).</b> <ul style="list-style-type: none"> <li>• <b>MARK REMOTE 7 INSERTION TIME _____</b></li> <li>• <b>MARK MODE SW TO S/D TIME _____</b></li> </ul> </li> <li>• Carries out Scram Choreography by reporting.                             <ul style="list-style-type: none"> <li>– Mode Switch in Shutdown, Power is...</li> <li>– Rod status is...</li> <li>– Reactor Power is... and trend</li> <li>– Reactor pressure is... and trend</li> <li>– Reactor level is... and trend</li> <li>– Any EOPs with entry conditions</li> </ul> </li> <li>• Establishes and maintains a RPV level band of Level 3 to Level 8 IAW CPS 4411.03.</li> <li>• Reports Annunciator 5006-2L HPU Trouble – Steam Bypass and Pressure Control (SB &amp; PC) hydraulic power unit failure.</li> <li>• Recognizes and reports a loss of pressure control using bypass valves (BPVs).                             <ul style="list-style-type: none"> <li>○ Dispatches an Equipment Operator to investigate SB &amp; PC trouble.</li> <li>○ Utilizes methods (Main Steam, SRVs, RCIC, etc.) to maintain a RPV pressure band of 800-1065 psig IAW CPS 4411.09.</li> </ul> </li>

Event No.(s): 8, 9		Page 2 of 3
Description: <b>Trip CRD Drive Water Pump 1B / Complete Loss of CRD / Scram / Low SB Hydraulic Pressure due to reservoir leak</b>		
Time	Position	Applicant's Actions or Behavior
	BOP	<ul style="list-style-type: none"> <li>• Monitors control room panels, notifies the SRO of unusual/unexpected conditions.</li> <li>○ Monitors reactor to ensure operations remain within established bands.</li> <li>○ Reports issue to SRO.</li> <li>○ Dispatches Equipment Operator(s) to monitor HCU accumulator pressures and investigate the B CRD pump trip.</li> <li>○ Per CPS 3304.01 Control Rod Hydraulic &amp; Control (RD) section 8.3.8, shuts 1C11-F370 and starts the RR Aux Seal Injection pump.</li> </ul> <p>When it is determined that two or more rod scram accumulators are INOPERABLE and cannot be restored:</p> <ul style="list-style-type: none"> <li>○ Performs a Rapid Plant Shutdown IAW CPS 3005.01 Unit Power Changes: <ul style="list-style-type: none"> <li>○ Evacuate the containment.</li> <li>○ Make a plant announcement that the plant is performing a Rapid Plant Shutdown.</li> </ul> </li> <li>• Carries out Scram Choreography by: <ul style="list-style-type: none"> <li>• Making an Announcement <ul style="list-style-type: none"> <li>– Reactor Scram</li> <li>– Motor Driven Reactor Feed Pump may start</li> <li>– Evacuate the RCIC room</li> <li>– Evacuate the Containment</li> </ul> </li> <li>• Determines Rod status and reports shutdown criteria met to the SRO.</li> </ul> </li> <li>○ Dispatches an Equipment Operator to investigate SB &amp; PC trouble.</li> <li>○ Utilizes methods (Main Steam, SRVs, RCIC, etc.) to maintain a RPV pressure band of 800-1065 psig IAW CPS 4411.09.</li> </ul>

Event No.(s): 8, 9		Page 3 of 3
<b>Description: Trip CRD Drive Water Pump 1B / Complete Loss of CRD / Scram / Low SB Hydraulic Pressure due to reservoir leak</b>		
Time	Position	Applicant's Actions or Behavior
[CT-2]	SRO	<ul style="list-style-type: none"> <li>• Acknowledges reports from ATC/BOP.</li> <li>• Directs actions listed above.</li> <li>• Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.</li> <li>○ Evaluates and enters Technical Specification LCO 3.1.5 (if scram accumulators become inoperable <u>before</u> scrambling the plant):                         <ul style="list-style-type: none"> <li>○ Actions A.1, B.1 and B.2.1 <u>or</u></li> <li>○ Actions A.1, B.1 and B.2.2 <u>or</u></li> <li>○ Actions A.2, B.1 and B.2.1 <u>or</u></li> <li>○ Actions A.2, B.1 and B.2.2</li> </ul> </li> <li>• <b>[CT-2] Directs placing mode switch in Shutdown within 38 minutes of insertion of REMOTE 7 (trip of CRD drive water pump 1B).</b> <ul style="list-style-type: none"> <li>• <b>MARK REMOTE 7 INSERTION TIME _____</b></li> <li>• <b>MARK MODE SW TO S/D TIME _____</b></li> </ul> </li> </ul> <p>Enters and executes CPS 4100.01 Reactor Scram:</p> <ul style="list-style-type: none"> <li>• Carries out Scram Choreography by performing an Update:                         <ul style="list-style-type: none"> <li>• Update</li> <li>• Entering EOP-1</li> <li>• Entering the Scram Off-Normal</li> <li>• End of Update</li> </ul> </li> </ul> <p>Directs/ Verifies:</p> <ul style="list-style-type: none"> <li>• Control of RPV Level, Level 3 to Level 8 IAW CPS 4411.03.</li> <li>• Control of RPV Pressure 800 to 1065 psig IAW CPS 4411.09.</li> <li>○ Contacts Maintenance to investigate.</li> <li>○ Informs Shift Manager.</li> <li>○ Conducts a brief.</li> </ul>
<b>Terminus:</b> Reactor is shutdown. RPV level maintained between Level 3 and Level 8 IAW CPS 4411.03. RPV pressure maintained between 800-1065 psig IAW CPS 4411.09.		

NOTES:

## Simulator Operator Instructions

**Initial Setup**

1. Fill out plant status and have Turnover Sheet ready for the crew.
2. Verify daily lamp test completed.
3. Simulator key count: \_\_\_\_\_ keys.
4. Reset to **IC-202** (PW 59567) @ **RTP**. If this is the first reset after swapping simulator loads, reset the IC twice.
5. Load the lesson plan for this scenario.
6. Verify the following commands are active:
  - **A04\_A28\_S20=Stop (GC Pump 'A' CS)**
7. Place simulator in RUN.
8. Make sure the FP bell toggle switch on the OG panel (is in the up position).
9. Verify RCIC Flow Controller is set at 620 gpm.
10. Verify the AR/PR server is running and stabilize AR/PR.
11. Verify Rod Drive pressure is in the expected range of 235-265 psid.
12. Provide pull sheets: **Step 29** is current - **Gang 9D** is at **Position 22**.
13. Make sure Sequence A is selected.
14. Procedures that are expected to be used during this scenario are:
  - CPS 3005.01 UNIT POWER CHANGES
  - CPS 3104.01 CONDENSATE/CONDENSATE BOOSTER (CD/CB)
  - CPS 3109.01 GENERATOR SEAL OIL (SO)
  - CPS 3110.01 GENERATOR STATOR COOLING (GC)
  - CPS 3111.01 GENERATOR GAS (HY, CO)
  - CPS 3303.01 REACTOR WATER CLEANUP (RT)
  - CPS 3304.01 CONTROL ROD HYDRAULIC AND CONTROL (RD)
  - CPS 3315.03 RADIATION MONITORING (AR-PR)
  - CPS 3319.01 STANDBY GAS TREATMENT (VG)
  - CPS 3404.01 FUEL BUILDING HVAC VF
  - CPS 3404.01H001 PLACING STANDBY GAS TREATMENT INTO SERVICE HARDCARD
  - CPS 4411.03 INJECTION FLOODING SOURCES
  - CPS 4411.09 RPV PRESSURE CONTROL SOURCES
  - CPS 4100.01 REACTOR SCRAM
  - CPS 4401.01 EOP-1 RPV CONTROL
  - CPS 5000.02 ALARM PANEL 5000 ANNUNCIATORS-ROW 2
  - CPS 5006.02 ALARM PANEL 5006 ANNUNCIATORS-ROW 2
  - CPS 5006.03 ALARM PANEL 5006 ANNUNCIATORS-ROW 3
  - CPS 5014.03 ALARM PANEL 5014 ANNUNCIATORS-ROW 3
  - CPS 5017.01 ALARM PANEL 5017 ANNUNCIATORS-ROW 1
  - CPS 5018.02 ALARM PANEL 5018 ANNUNCIATORS-ROW 2
  - CPS 5042.05 ALARM PANEL 5042 ANNUNCIATORS-ROW 5
  - CPS 5050.02 ALARM PANEL 5050 ANNUNCIATORS-ROW 2
  - CPS 5067.08 ALARM PANEL 5067 ANNUNCIATORS-ROW 8
  - CPS 5068.03 ALARM PANEL 5068 ANNUNCIATORS-ROW 3
  - CPS 5068.04 ALARM PANEL 5068 ANNUNCIATORS-ROW 4
  - ITS 3.0 LCO APPLICABILITY (LCO 3.0.5)
  - ITS 3.3 INSTRUMENTATION (LCOs 3.3.2.1, 3.3.6.2)
  - ITS 3.5 ECCS AND RCIC SYSTEM (3.5.1)
  - ITS 3.6 CONTAINMENT SYSTEMS (LCO 3.6.4.1)

15. Generate a 3D Case.
16. Hang OOS tags on: **CRD Drive Water Pump 1A (1C11-C001A)**
17. Identify T/S issues associated with OOS and turnover: None
18. Operating Equipment: None
19. Marked up copies:
  - CPS 9067.01 STANDBY GAS TREATMENT SYSTEM TRAIN FLOW HEATER OPERABILITY
  - CPS 9067.01D001 SGTS TRAIN FLOW HEATER OPERABILITY DATA SHEETS
20. Verify simulator conditions match the turnover.



## Event Triggers and Role Play

**Event #****1. Shutdown VG Train A / Restart VF Train A**

- a. Event Trigger – None
- b. Role play
  - (1) EO (when requested):
    - a) **Release – ‘Restart VF A Fans’**, and then report, “Step 8.1.8 is complete”.
    - b) Report, “Room Fan 0VG05CA is OFF” (Ref: CPS 9067.01, step 8.9.12)
    - c) Report, “Step 8.1.4 of CPS 3404.01 is complete” or “Handswitches for 1VF04CA/CB and 1VF03CA/CB are in AFTER-STOP”.
    - d) Report, “A VF supply and exhaust fans are red flagged and the B VF supply and exhaust fans are green flagged”.

**2. Hotwell M/U Controller Failure**

- a. Event Trigger - Following Event 1 and when directed by the Lead Examiner, **Activate Remote 1** and verify the following command(s):
  - (1) **A01\_A08\_A02\_4 = Manual.** (Make-Up to Cdsr 1LC-CD057B Auto/Man)
  - (2) **A01\_A08\_A02\_7 = False.** (Make-Up to Cdsr 1LC-CD057B Close)
- b. Role play
  - (1) EO (when directed to investigate 1CD045) – report “no abnormalities noted”.
  - (2) Maintenance (when directed to investigate 1LC-CD057B controller failure) – report “dispatching personnel to investigate”.

**3. VF Exhaust and Supply Fans Trip**

- a. Event Trigger - Following Event 2 and when directed by the Lead Examiner, **Activate Remote 2** and verify the following command(s):
  - (1) **1VF04CA=Motor Short Circuit.** (1VF04CA Fuel Building HVAC Exhaust Fan Motor Failure)
  - (2) **1VF04CB=Motor Short Circuit.** (1VF04CB Fuel Building HVAC Exhaust Fan Motor Failure)
- b. Role play
  - (1) EO (when directed to investigate loss of Fuel Building Ventilation) – report “Both VF Exhaust fan breakers have tripped.”
  - (2) EO (when directed to secure VF) – **release Local VF Operations** in the simulator lesson plan and report, “VF Supply and Exhaust Fan control switches are all in PTL at 1PL44J”.
  - (3) EO (when directed to check 1PL44J alarm) – report, “Multiple alarms are locked in, including high dP Fuel Building (unless VG has been started).”
  - (4) EO (when directed to verify that 0VG05CA(B) has started following initiation of SGTS Train ‘A’ or ‘B’) – report “SGTS A(B) Room Fan is running”.
  - (5) EO (if directed to check low fail alarm on 1PR008) – report, “Flow is sat locally”.
  - (6) Maintenance (when directed to investigate loss of Fuel Building Ventilation) – report “dispatching personnel to investigate”.
  - (7) RP/Chemistry (when notified that VG will be started) – acknowledge the report.

**4. RWL Inoperable**

- a. Event Trigger - Following Event 3 and when directed by the Lead Examiner, **Activate Remote 3** and verify the following command(s):
  - (1) **A02\_A05\_03\_8\_TVM=2.** (5006-3H Low Power Alarm Point)
  - (2) **TFRPC\_4=Off.** (Above HPSP Light Override)
  - (3) **TFRPC\_3=Off.** (Hi Power Setpoint Light Override)
  - (4) **TFRPC\_2=Off.** (Low Power Alarm Point Light Override)
  - (5) **TFRPC\_1=On.** (Low Power Setpoint Light Override)
- b. Role play
  - (1) Booth (if requested): respond “ATMs for 1C11-N655A and 1C11-N655B indicate failed low.”

5. **Trip of Operating GC Pump (1GC01PB) / Failure of Standby GC Pump to Auto Start**
  - a. Event Trigger - Following Event 4 and when directed by the Lead Examiner, **Activate Remote 4** and verify the following command(s):
    - (1) **1GC01PB = 3.** (1GC01PB Stator Cooling Water Pump 1B Motor Failure)
  - b. Role play
    - (1) EO (when directed to investigate alarms on 1PL10J): report, "Low GC Flow/Low GC Press alarms are in".
    - (2) EO (if directed to reset alarms on 1PL10J): reset 1PL10J and report, "1PL10J alarms are reset".
    - (3) EO (if directed to investigate the GC pump trip): acknowledge the request and report, "GC Pump 'B' tripped on overcurrent."
    - (4) Maintenance (if requested): respond "Dispatching personnel to investigate."
  
6. **'A' Reactor Water Cleanup Filter Demin Trip**
  - a. Event Trigger – Following Event 5 and when directed by the Lead Examiner, **Activate Remote 5** and verify the following command(s):
    - (1) **YFCUCTPW\_1.** (RWCU F/D A Controller Pwr/Pneum Failure).
  - b. Role play
    - (1) EO (if status of A RWCU F-D is requested): respond, "A RWCU F-D is in HOLD mode".
    - (2) Maintenance (if requested): respond, "Dispatching personnel to investigate."
    - (3) Chemistry (if contacted): acknowledge the notification.
  
7. **Loss of Main Generator H<sub>2</sub> requiring power reduction** (Pull up Turb/Gen Stby Data page)
  - a. Event Trigger – Following Event 6 and when directed by the Lead Examiner, **Activate Remote 6** and verify the following command(s):
    - (1) **YPMALSE\_18=3%.** (H<sub>2</sub> Leak From Generator).
    - (2) **HY01HY\_HY607TASTEM=0.** (HY607 Vlv Stem Position)
  - b. Role play
    - (1) EO (when requested to investigate 1PL10J annunciators): wait until Gen H<sub>2</sub> pressure is ≤ 58# then report "Annunciators 5201-1A MACHINE GAS PRESSURE HIGH LOW and 5201-2A DIFFERENTIAL SEAL OIL PRESS LOW are alarming."
    - (2) EO (if requested to report 5201-2A Seal Oil Press Low possible causes): report
      - a) Malfunction of 1SOH19, Delta Pressure Reg Valve
      - b) Clogged Seal Oil Filter
      - c) Neither the Main Seal Oil Pump nor the Emergency Seal Oil Pump in operation.
    - (3) EO (when requested to check Generator Seal Oil pressure): report, "Seal Oil Pressure is 3 psi above hydrogen pressure."
    - (4) EO (when directed to restore seal oil pressure and after making sure Gen H<sub>2</sub> pressure is < 58#):
      - a) Throttle OPEN Delta Press Reg Vlv Bypass (1SOH21) and control seal oil pressure at 6-10 psi greater than hydrogen pressure – report "Delta Press Reg Vlv Bypass (1SOH21) is OPEN and seal oil pressure is at 8 psi greater than hydrogen pressure."
      - b) SHUT Delta Press Reg Vlv Inlet (1SOH18) – report "Delta Press Reg Vlv Inlet (1SOH18) is SHUT."
      - c) SHUT Delta Press Reg Vlv Outlet (1SOH20) – report "Delta Press Reg Vlv Outlet (1SOH20) is SHUT."
      - d) Open/verify open 1SOH25 – report "1SOH25 is open".
      - e) Open/verify open 1SOH26 – report "1SOH26 is open".
    - (5) EO (when directed to restore H<sub>2</sub> pressure):
      - a) Obtain CE permission (to ensure reactivity manipulation is complete) and then **release – 'Generator Hydrogen Fill'**
      - b) (when directed to stop filling H<sub>2</sub>): **release – 'Secure Generator Hydrogen Fill'**.

8. **Trip CRD Drive Water Pump 1B/Complete Loss of CRD/Scram**

- a. Event Trigger - Following Event 7 and when directed by the Lead Examiner, **Activate Remote 7** and verify the following command(s):
  - (1) **YP\_XMFTB\_4853.** (CRD Pump 'B' Trip)
  - (2) **A02\_A05\_01\_8\_TVM=2.** (Annunciator 5006-1H Accumulator Trouble)
- b. Event Trigger – After the Recirc Loop A/B Flow Control Switch(es) to Slow Close and following a 0:02 second time delay, verify the following command(s):
  - (1) **YP\_XMFTB\_4975/6.** (HPU A/B Failure)
- c. Role play
  - (1) Equipment Operator (if requested):
    - a) Acknowledge the order to investigate CRD Pump 'B' trip. Wait 5 minutes then report, "a pump bearing has failed".
    - b) Acknowledge the order to investigate CRD Hi Temp alarm. Wait 1 minute then report, "Multiple CRDs are alarming at 255°F and trending up at ~1°F every five minutes.
    - c) Acknowledge the orders to investigate low accumulator pressures (see table below). Wait 2 minutes then report, "Accumulator XX-XX (requested accumulator) is at 1545 psig and lowering".

Accumulator	Approximate Time to Accumulator Trouble in minutes (from event initiation)	Record ACTUAL time report of 1545 psig is made to the MCR
24-45	12	
48-29	16	
24-13	20	
32-45	24	
08-29	28	

- (2) Maintenance (after 2 minutes from scram announcement) – report to the MCR as IMD.

9. **Low SB Hydraulic Pressure due to reservoir leak**

- a. Event Trigger – After the RMS in S/D and following a 1:00 minute time delay, verify the following command(s):
  - (1) **YP\_XMFTB\_4986.** (Loss of SB Hydraulics – Loss of SB Pumps)
- b. Role play
  - (1) Equipment Operator (if requested): report, "The HPU reservoir is empty. There is no oil in the immediate vicinity of the HPU."

**CT Bases Information**

1. [CT-1] Starts GC pump 'A' prior to bypass valves starting to open.
  - a) This critical task was derived from NUREG 1021 R11 Appendix D Simulator Testing Guidelines section D.1 Identification of Scenario-Specific Critical Tasks that states that each critical task must have safety significance. A safety significant task includes those actions where omission by an operator will result in direct adverse consequences to the plant and for which the crew demonstrates the ability to prevent an inappropriate action that creates a challenge to plant safety (such as an unintentional reactor protection system (RPS) actuation). Failing to start the standby Generator Stator Cooling Water Pump will result in a Turbine Runback requiring the reactor to be scrammed due to the loss of feed water heating and subsequent insertion of positive reactivity. Starting the Standby GC Pump is an action that will preclude an unnecessary RPS trip and is therefore critical.
2. [CT-2] Place mode switch in Shutdown within 38 minutes of CRD drive water pump 1B trip.
  - a) This critical task was derived from ITS 3.1.5 Control Rod Scram Accumulators. With two or more control rod scram accumulators inoperable and reactor steam dome pressure  $\geq 600$  psig, adequate pressure must be supplied to the charging water header. With inadequate charging water pressure, all of the accumulators could become inoperable, resulting in a potentially severe degradation of the scram performance. Therefore, within 20 minutes from discovery of charging water header pressure  $< 1520$  psig concurrent with Condition B, adequate charging water header pressure must be restored. The 38 minutes for task completion was derived as follows:
    - 2 minutes (time for Equipment Operator to reach containment and report accumulator pressures).
    - 16 minutes (time it takes for second accumulator trouble to come in).
    - 20 minutes (once LCO 3.1.5 is met, time in which LCO required action must be taken).

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Turnover

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1. The plant is in Mode 1, operating at Rated Thermal Power (RTP).
  - a. Control rods - Step 29 / Gang 9D @ position 22.
2. Status of Tagged Out Equipment
  - CRD Drive Water Pump 1A (1C11-C001A) is Out Of Service (OOS) for maintenance. Not expected back this shift.
3. Today Day Shift
4. Weather Conditions
  - Calm and clear.
5. Thermal Limit Problems or concerns
  - None
6. LCO's in effect
  - 3.3.6.2 (Secondary Containment Isolation Instrumentation)
    - Required Action A.1 – Place associated channels in trip within 24 hours.
    - Required Action B.1 – Restore Secondary Containment isolation capability within 1 hour.
    - Required Action C.1.1 – Isolate the associated penetration flow path(s) within 1 hour.
    - Required Action C.2.1– Place a VG train in service within 1 hour.
7. Surveillances in progress
  - CPS 9067.01 Standby Gas Treatment System Train Flow / Heater Operability
8. Previous Shift Evolutions completed
  - CPS 9067.01 Standby Gas Treatment System Train Flow / Heater Operability in progress on VG Train A. Train A has been operating for 3 hours and is ready to be secured.
  - Fuel Building Exhaust radiation monitors (1RIX-PR006A-D) are INOPERABLE due to conduct of CPS 9067.01.
9. Evolutions planned for the shift
  - First Priority – Secure VG Train A IAW CPS 9067.01 Standby Gas Treatment System Train Flow / Heater Operability and to restart the Fuel Building Ventilation (VF) System Train A. The WEC Supervisor will make required entries to CPS 9094.01 Cumulative Data Report.
  - Maintain Rx Power at RTP.
10. Risk Levels
  - Green
  - Protected Equipment: None

**Job Performance Measure**  
**Control Rod Scram Time Testing Restoration - Alternate Path**

JPM Number: JPM561

Revision Number: 00

Date: 9/27/18

Developed By: Tony Jennings 9/27/18  
Instructor Date

Validated By: Aaron Marr 4/29/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 9813.01 Rev: 41e  
Procedure 3304.02 Rev: 22e  
Procedure 5006.03 Rev: 33b
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	9/27/18	New JPM.



### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM561 per step 2)
  - a. Initialize to any suitable IC with power above the High Power Setpoint.
  - b. Obtain a screen print of OD-7 Control Rod Notch Positions for use in the body of the JPM.
  - c. From the PID page for RC&IS, insert Rod3237TFIA9 Rod 32-37 Single Rod Scram – Rod. Verify Rod 32-37 inserts to position 00.
  - d. From PID page for RC&IS, insert Rod3237TFIA9 Rod 32-37 Single Rod Scram – Normal.
  - e. Verify annunciator 5006-1H Accumulator Fault resets.
  - f. On 1H13-P680-5004A, depress the Reset Drift pushbutton.
  - g. Verify annunciator 5006-4G Rod Drift resets.
  - h. Make sure the Rod Select Clear Pushbutton is NOT depressed.
  - i. Make sure Individual Drive Mode is selected on P680.
  - j. Freeze the simulator.
  - k. Save to a different IC if JPM is being used more than once. IC-203 is saved for the ILT 18-1 NRC exam (PW 59567).
  - l. This completes the setup for this JPM.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-203 is saved for the ILT 18-1 NRC exam (PW 59567).
  - b. Open and execute Simulator Lesson Plan ILT 18-1 NRC Exam JPMs LP.
  - c. Place a flag on annunciator 5005-2K SRM Period.
  - d. Release JPM561 which will insert malfunction LS10\_MALF (RC&IS Lockup) after control rod 32-37 has been withdrawn for 30 seconds.
  - e. 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.
  - f. Save to a different IC if required.
  - g. Freeze the simulator.

## INITIAL CONDITIONS

You are the 'A' RO.

Plant conditions are as follows:

- The plant is operating at 94% power.
- CPS 9813.01 Control Rod Scram Time Testing on 10% of the control rods is in progress.
  - Rod 32-37 has been scrammed and is at position 00.
  - Rod 32-37 is selected.
  - CPS 9813.01 Control Rod Scram Time Testing is complete up through and including step 8.2.15.

## INITIATING CUE

The CRS has directed you to continuously withdraw control rod 32-37 to its pre-test position (position 48) per step 8.2.16 of CPS 9813.01 Control Rod Scram Time Testing.

SRM period alarms are to be treated as expected.

Report to the CRS after completing the task.

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

.....

### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with the following: <ul style="list-style-type: none"><li>• CPS 9813.01 Control Rod Scram Time Testing</li><li>• CPS 3304.02 Rod Control and Information System (RC&amp;IS)</li><li>• Attachment 1 – OD-7</li><li>• Attachment 2 – NF-CL-721-F-5 Special Maneuver Rod Move Sheet</li></ul>				
*1	Returns control rod 32-37 to pre-test position.	3304.02 8.1.3.1.1 Examinee verifies the INDIVID DRIVE light is energized on the OCM.	—	—	—
		<b>*3304.02 8.1.4.2.2</b> <b>Examinee depresses the CONT WITHDRAW and WITHDRAW pushbuttons on 1H13-P680-5004A panel, and then verifies:</b> <ul style="list-style-type: none"><li>• the IN light cycles on then off</li><li>• the OUT and CONT OUT lights energize</li><li>• 32-37 begins to withdraw to position 48.</li></ul> <i>Examiner Note: 32-37 will withdraw for 30 seconds before the RCIS malfunction inserts.</i> <i>Examiner Cue - If the examinee reports receiving annunciator 5005-2K SRM Period, acknowledge the report.</i> <i>Examiner Cue - if the examinee reports receipt of annunciator 5006-3G RC&amp;IS Inop and/or 5006-2H Rod Out Block, acknowledge the report.</i>	—	—	—
<b>Alternate Path Begins</b>					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*2</b>	Takes mitigating actions for an RC&IS lock-up.	5006-3G RC&IS INOP and 5006-2H ROD OUT BLOCK  Operator observes receipt of annunciators 5006-3G RC&IS INOP and 5006-2H ROD OUT BLOCK  <i>Examiner Cue – if the examinee reports receipt of annunciator 5006-3G RC&amp;IS Inop and/or 5006-2H Rod Out Block, acknowledge the report.</i>  <i>Evaluator Note – actions for 5006-3G and 5006-2H can be performed in any order. The only critical task is that rod drive differential pressure is adjusted to &lt; 75 psid IAW 5006-3G.</i>	—	—	—
		5006-3G RC&IS INOP – Operator Action #1  Examinee maintains a constant power level and refers to CPS 3304.02 Rod Control and Information System (RC&IS) to determine plant impact due to the malfunction systems.  <i>Cue – acknowledge report from the examinee and cue him/her that another operator will perform troubleshooting actions in CPS 3304.02.</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*2</b> (cont'd)	Takes mitigating actions for an RC&IS lock-up (cont'd).	<p><b>5006-3G RC&amp;IS INOP – Operator Action #2</b></p> <p><b>At 1H13-P601, examinee observes that C11-R602 DRIVE WATER DIFF PRESS indicator is indicating off-scale high, and then lowers RD Drive dP to &lt; 75 psid by taking the control switch for 1C11-F003 CRD Press Control Valve clockwise to the open position until C11-R602 reads &lt; 75 psid.</b></p> <p><i>Cue – acknowledge reports from the examinee and cue him/her that the JPM is complete when 1C11-F003 has been successfully adjusted below 75 psid or at the discretion of the evaluator.</i></p>	—	—	—

JPM Stop Time: \_\_\_\_\_  
 .....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Control Rod Scram Time Testing Restoration - Alternate Path**JPM Number:** JPM561**Revision Number:** 00**Task Number and Title:** 330402.24 Respond to Automatic RCIS System Shutdown/RCIS Reset.**K/A Number and Importance:**

K/A System	K/A Number	Importance (RO/SRO)	
201005	A3.04	3.3	3.3

**Suggested Testing Environment:** Simulator**Alternate Path:** ☒ Yes ☐ No **SRO Only:** ☐ Yes ☒ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- CPS 9813.01 Control Rod Scram Time Testing Rev. 41e
- CPS 3304.02 Rod Control and Information System (RC&IS) Rev. 22e
- CPS 5006.03 Alarm Panel 5006 Annunciators – Row 3 Rev. 33b

**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 ☐ NoThe 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:** \_\_\_\_\_

### Attachment 1 – OD-7

SIM	MODE:		X/XX/XX
A: ACT B: STBY	RUN	OD-7 Control Rod Notch Positions	XX:XX:XX <b>ALM</b>

RLC App Status: **RUNNING**    RLC Link    **ACTIVE**

RMP Report

53			48	48	48	48	48	48	48			
49		48	48	48	48	48	48	48	48	48		48 / ++
45		48	22	48	48	48	12	48	48	48	22	48
41	48	48	48	48	48	48	48	48	48	48	48	48
37	48	48	48	48	12	48	48	48	12	48	48	48
33	48	48	48	48	48	48	48	48	48	48	48	48
29	48	48	12	48	48	48	48	48	48	12	48	48
25	48	48	48	48	48	48	48	48	48	48	48	48
21	48	48	48	48	12	48	48	48	12	48	48	48
17	48	48	48	48	48	48	48	48	48	48	48	48
13		48	22	48	48	48	12	48	48	48	22	48
09			48	48	48	48	48	48	48	48		
05				48	48	48	48	48	48	48		OD-14 Display

04    08    12    16    20    24    28    32    36    40    44    48    52

#### KEY

- GOOD DATA   
 - SELECTED   
 - SUBSTITUTE VALUE   
 - UNUSED SUBSTITUTE VALUE   
 - BAD DATA

## Attachment 2 – NF-CL-721-F-5 Special Maneuver Rod Move Sheet

## SPECIAL MANEUVER ROD MOVE SHEET

CLINTON	
Sequence ID:	Simulator

NOTES

[illegible]

**--- END of Special Maneuver Rod Move Sheet ---**



## **INITIAL CONDITIONS**

You are the 'A' RO.

Plant conditions are as follows:

- The plant is operating at 94% power.
- CPS 9813.01 Control Rod Scram Time Testing on 10% of the control rods is in progress.
  - Rod 32-37 has been scrammed and is at position 00.
  - Rod 32-37 is selected.
  - CPS 9813.01 Control Rod Scram Time Testing is complete up through and including step 8.2.15.

## **INITIATING CUE**

The CRS has directed you to continuously withdraw control rod 32-37 to its pre-test position (position 48) per step 8.2.16 of CPS 9813.01 Control Rod Scram Time Testing.

SRM period alarms are to be treated as expected.

Report to the CRS after completing the task.

**Job Performance Measure**  
**Initiate Low Pressure ECCS System and Maximize Injection (Alternate Path)**

JPM Number: JPM250

Revision Number: 05

Date: 9/28/18

Developed By: Tony Jennings 9/28/18  
Instructor Date

Validated By: Tim Windingland 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
     Procedure 3312.01H001 Rev: 0  
     Procedure 3313.01H001 Rev: 0  
     Procedure 4411.03 Rev: 10d
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
00	9/30/08	New JPM.
01	6/30/12	Updated format, revision numbers and made it more of an alternate path.
02	7/28/14	Updated reference procedure revision numbers.
03	6/5/15	Updated reference procedure revision numbers.
04	7/28/17	Updated reference procedure numbers to new hard card numbers.
05	9/28/18	Updated to new JPM template.

### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM250 per step 2)
  - a. Initialize to any suitable at power IC.
  - b. Place the RMS in shutdown and stabilize the plant.
    - 1) Perform a Group 1 Isolation.
    - 2) Shut RPV Inlet Valves 1B21-F065A and 1B12-F065B.
    - 3) Secure both RD Pumps.
    - 4) Manually initiate RCIC and trip the RCIC Turbine.
    - 5) Terminate and prevent HPCS.
    - 6) Start both Mixing Compressors.
    - 7) Defeat RT System Isolations (YP\_XREMT\_737).
    - 8) Align RT system letdown to the Main Condenser (CPS 3303.01 section 8.1.6).
    - 9) Lower RPV level to -100".
    - 10) When RPV level reaches -100", perform the following:
      - a) Set YP\_XREMT\_737 to NORMAL (will cause RT system to isolate).
      - b) Freeze the simulator.
  - c. This completes the setup for this JPM.
  - d. Save to a different IC if JPM is being used more than once. IC-217 (PW 59567) is saved for the ILT 18-1 NRC Exam.

<p><b>NOTE:</b> It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.</p>
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2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-217 (PW 59567) is saved for the ILT 18-1 NRC Exam.
  - b. Open and execute Simulator Lesson Plan ILT 18-1N JPMs.

- c. Release JPM250 which will insert the following malfunctions & overrides:
  - 1) RAT\_B\_Sudden\_Press (RAT B Sudden Pressure)
  - 2) YP\_HPCON Fuse Out (HPCS Pump Control Power Fuses Removed)
  - 3) YPXMALSE\_70 = 0 (E21F005 Fails to Position)
  - 4) RH\_EP205 (Defeat E12-F008, F023, and F053A Isolation) and RH\_EP206 (Defeat E12-F009 and F053B Isolation)
  - 5) YPXMALSE\_432 (LPCI Inj Vlv Fail E12F042A)
  - 6) YPXMALSE\_433 (LPCI Inj Vlv Fail E12F042B)
  - 7) YPXMALSE\_511 0.5% (RR03C-Lower Plenum Leak) when RHR Pumps A&B are started.
  - 8) Initiates ADS when RPV level reaches TAF.
- d. Save to a different IC if required.
- e. Freeze the simulator.

## INITIAL CONDITIONS

You are the Extra RO.

A transient has occurred causing RPV level to lower.

- The reactor has been scrammed.
- High pressure injection is not available.
- ADS will be initiated by the “B” Reactor Operator when RPV level reaches TAF.

## INITIATING CUE

The CRS has directed you to restore RPV level above Level 3 using available low pressure ECCS systems per CPS 4411.03 INJECTION/FLOODING SOURCES.

- PR038 and PR039 are in service.
- Hard Card use is authorized.

Report to the CRS after completing the task.

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

.....

### Information For Evaluator’s Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with a copy of CPS 4411.03 Injection/Flooding Sources.				
	<p>Evaluator Note – Div 1 actions are listed in step 1. Div 2 actions are listed in step 2.</p> <p>Evaluator Note – JPM steps 1 and 2 may be performed in any order.</p>				
*1	Manually initiates Div 1 Low Pressure ECCS Systems (LPCS / RHR 'A')	<p>3312.01H001 step 1 / 3313.01H001 step 1</p> <p>Examinee:</p> <ul style="list-style-type: none"> <li>rotates the collar of the LPCS/LPCI FM RHR A MANUAL INITIATION push-button to ARM position, and</li> <li>depresses the LPCS/LPCI FM RHR A MANUAL INITIATION push-button</li> </ul>	_____	_____	_____
	Verifies LPCS system automatic actions.	<p>3313.01H001 steps 2 and 3</p> <p>Examinee verifies:</p> <ul style="list-style-type: none"> <li>LPCS Pump has started (red light on, green light off, motor current meter has risen).</li> <li>1E21-F005 LPCS To CNMT Outbd Isol Valve has <u>failed</u> to open automatically and will not open manually <u>when RPV pressure lowers to 472 psig</u>.</li> </ul> <p><i>Evaluator Note – Initiation of the Div 1 and Div 2 ECCS logic (step 2) will initiate a 0.5% LOCA. When RPV level reaches -160", ADS will automatically initiate.</i></p> <p><i>Evaluator Cue – If the examinee reports the failure of 1E21-F005 to open, acknowledge the report.</i></p>	_____	_____	_____



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*1 (cont'd)</b>	Verifies RHR 'A' subsystem automatic actions.	<p>3312.01H001 steps 2 - 4</p> <p>Examinee verifies:</p> <ul style="list-style-type: none"> <li>• <b>RHR 'A' Pump has started (red light on, green light off, motor current meter has risen).</b></li> <li>• 1E12-F048A RHR A Hx Bypass Valve is open.</li> <li>• 1E12-F027A, RHR A To CNMT Outbd Isol Valve is open.</li> <li>• 1E12-F042A LPCI Fm RHR A Shutoff Valve has failed to open automatically and will not open manually <u>when RPV pressure lowers to 472 psig.</u></li> </ul> <p><i>Evaluator Note – Initiation of the Div 1 and Div 2 ECCS logic (step 2) will initiate a 0.5% LOCA. When RPV level reaches -160", ADS will automatically initiate.</i></p> <p><i>Evaluator Cue – If the examinee reports the failure of 1E12-F042A to open, acknowledge the report.</i></p>	—	—	—
<b>*2</b>	Manually initiates Div 2 Low Pressure ECCS Systems (RHR 'B' & RHR 'C')	<p>3312.01H001 step 1</p> <p>Examinee:</p> <ul style="list-style-type: none"> <li>• <b>rotates the collar of the LPCI FM RHR B &amp; C MANUAL INITIATION push-button to ARM position, and</b></li> <li>• <b>depresses the LPCI FM RHR B &amp; C MANUAL INITIATION push-button</b></li> </ul>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*2 (cont'd)</b>	Verifies RHR 'B' subsystem automatic actions.	<p>3312.01H001 step 2 - 4</p> <p>Examinee verifies:</p> <ul style="list-style-type: none"> <li>• <b>RHR 'B' Pump has started (red light on, green light off, motor current meter has risen).</b></li> <li>• 1E12-F048B RHR B Hx Bypass Valve is open.</li> <li>• 1E12-F027B, RHR B To CNMT Outbd Isol Valve is open.</li> <li>• 1E12-F042B LPCI Fm RHR B Shutoff Valve has failed to open automatically and will not open manually <u>when RPV pressure lowers to 472 psig.</u></li> </ul> <p><i>Evaluator Note – Initiation of the Div 1 and Div 2 ECCS logic (step 2) will initiate a 0.5% LOCA. When RPV level reaches -160", ADS will automatically initiate.</i></p> <p><i>Evaluator Cue – If the examinee reports the failure of 1E12-F042B to open, acknowledge the report.</i></p>	—	—	—
	Verifies RHR 'C' subsystem automatic actions.	<p>3312.01H001 step 2 - 4</p> <p>Examinee verifies:</p> <ul style="list-style-type: none"> <li>• <b>RHR 'C' Pump has tripped (red light off, green and amber lights off).</b></li> <li>• 1E12-F042C LPCI Fm RHR B Shutoff Valve has opened <u>when RPV pressure lowers to 472 psig.</u></li> </ul> <p><i>Evaluator Cue – If the examinee reports the trip of RHR Pump 'C', acknowledge the report.</i></p>			

Alternate Path Begins					
Evaluator Note – Actions in step 3 are performed IAW CPS 4411.03 Appendix A: RHR Injection/Flooding Flow Paths Method 1.0 RHR Through Shutdown Cooling					
<b>*3</b>	Aligns RHR Through Shutdown Cooling Flowpath	4411.03 step 1.2 Examinee verifies RHR Pumps A and B are still running (red light on, green light off).	—	—	—
	Aligns RHR Through Shutdown Cooling Flowpath Cue the examinee that the JPM is complete.	4411.03 step 1.3 <b>Examinee throttles open 1E12-F053A and B, RHR A(B) To Feedwater S/D Cooling Rtrn Valve, as needed to restore RPV level above Level 3.</b> <i>Evaluator Cue – If the examinee request status of defeating the 1E12-F053A/B interlocks, cue the examinee that 1E12-F053A/B interlocks have been defeated.</i>	—	—	—
CUE	When RPV level is rising, cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_  
 .....  
 .....

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Initiate Low Pressure ECCS System and Maximize Injection (Alternate Path)**JPM Number:** JPM250 **Revision Number:** 05**Task Number and Title:** 441103.01 – Injection/Flooding Operation**K/A Number and Importance:** 295031 EA1.01 / RO (4.4), SRO (4.4)**Suggested Testing Environment:** Simulator**Alternate Path:** ☒ Yes ☐ No **SRO Only:** ☐ Yes ☒ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- CPS 3312.01 H001 LPCI INITIATION and SHUTDOWN HARD CARD, Rev. 0
- CPS 3313.01 H001 LPCS MANUAL INITIATION - SHUTDOWN HARD CARD, Rev. 0
- CPS 4411.03 INJECTION/FLOODING SOURCES, Rev. 10d

**Actual Testing Environment:** ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ Perform**Estimated Time to Complete:** 24 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### **INITIAL CONDITIONS**

You are the Extra RO.

A transient has occurred causing RPV level to lower.

- The reactor has been scrammed.
- High pressure injection is not available.
- ADS will be initiated by the “B” Reactor Operator when RPV level reaches TAF.

### **INITIATING CUE**

The CRS has directed you to restore RPV level above Level 3 using available low pressure ECCS systems per CPS 4411.03 INJECTION/FLOODING SOURCES.

- PR038 and PR039 are in service.
- Hard Card use is authorized.

Report to the CRS after completing the task.

**Job Performance Measure**  
**Turbine On Line Tests – Alternate Path**

JPM Number: JPM517

Revision Number: 02

Date: 10/1/18

Developed By: Tony Jennings 10/1/18  
Instructor Date

Validated By: Tim Windingland 4/29/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 3812.01 Rev: 18c  
Procedure 3105.01 Rev: 43a  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	06/14/13	New JPM. This JPM modifies JPM 415 to create an Alternate Path JPM.
01	6/25/15	Updated procedure references.
02	10/1/18	Updated to new JPM template. Updated procedure references.



### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM517 per step 2)
  - a. Initialize to any suitable at power IC with the Main Turbine on line.
  - b. Freeze the simulator.
  - c. This completes the setup for this JPM.
  - d. Save to a different IC if JPM is being used more than once. IC-203 (PW 59567) is saved for the ILT 18-1 NRC Exam.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-203 (PW 59567) is saved for the ILT 18-1 NRC Exam.
  - b. Open and execute Simulator Lesson Plan ILT 18-1N JPMs.
  - c. Release JPM517 which will prevent the Main Turbine Electrical Trip Test circuitry from resetting when tested.
  - d. Prepare a working copy of CPS 3812.01 Turbine On Line Tests with:
    - 1) Prerequisite steps 5.1 through 5.4 signed off as complete.
    - 2) Prerequisite steps 5.8, 5.9, 5.9.1, and 5.9.2 signed off as complete.
  - e. This completes the setup for this JPM.
  - f. Save to a different IC if required.
  - g. Freeze the simulator.

## INITIAL CONDITIONS

You are the B RO.

- The plant is in Mode 1 with the Main Turbine synchronized to the grid.
- CPS 3812.01, Turbine On Line Tests is scheduled to be performed.
- All prerequisites for CPS 3812.01 Turbine On Line Tests Section 8.1 Electrical Trip Test and Section 8.2 BOST Test are complete.
- Turbine Trips are NOT Disabled (NOT BYPASSED) per CPS 3105.01, Disabling Turbine Trips Using Global Bypass.
- Operators are stationed at Main Turbine Front Standard and at the first hit panel 1PA06J to reset annunciators.

## INITIATING CUE

The CRS has directed you to perform CPS 3812.01 Turbine On Line Tests sections 8.1 Electrical Trip Test and 8.2 Backup Overspeed Trip Test.

You have CRS permission to perform Critical Steps (CS).

Report to the CRS after completing the task.

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

.....

### Information For Evaluator's Use:

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with a marked up copy of CPS 3812.01 Turbine On Line Tests.				
1	Performs pretest verifications.	3812.01 8.1.1 – 8.1.3 Examinee verifies: <ul style="list-style-type: none"> <li>• Applicable Section 5.0 prerequisites are complete.</li> <li>• Turbine Trips are NOT disabled</li> <li>• On 1H13-P870-5018, Electrical Trip Test NORMAL light is ON, RESET light is ON, and Remaining lights in ELECTRICAL TRIP TEST Group are OFF</li> </ul> <i>Evaluator Note – status of prerequisites and turbine trips were provided in the initiating cue.</i>	—	—	—
*2	Initiates Electrical Trip Test	3812.01 8.1.4 Examinee: <ul style="list-style-type: none"> <li>• <b>depresses and <u>holds</u> the START TEST push-button</b></li> <li>• <b>observes the NORMAL light goes OFF.</b></li> <li>• <b>observes LOCKED OUT light comes ON.</b></li> </ul> <i>Evaluator Cue – if status of lights and annunciators at P680 and 1PA06J is requested, cue the examinee that all expected lights and annunciators were received.</i>			

Begin Alternate Path					
<b>*3</b>	Performs Electrical Trip Test Restoration.	3812.01 8.1.5 <b>Examinee releases the START TEST push-button</b> and observes the following: <ul style="list-style-type: none"> <li>• RESET light goes OFF, and TRIPPED light comes ON.</li> <li>• Test Malfunction light comes ON.</li> </ul> <i>Evaluator Cue – When the examinee reports the malfunction to the CRS, acknowledge the report, inform the examinee that troubleshooting is complete and direct the examinee to take necessary actions to move on to the next section of the test.</i> <i>Evaluator Cue – If an Equipment Operator is sent to check status of the trip mechanism, report that the trip linkage is reset.</i>	_____	_____	_____
<b>*4</b>	Resets the system to normal	3812.01 6.1 <b>Examinee depresses the Electrical Trip Test Stop Go Normal pushbutton</b> , and verifies the following: <ul style="list-style-type: none"> <li>• Test Malfunction light goes OFF</li> <li>• TRIPPED light goes OFF</li> <li>• RESET light comes on</li> <li>• LOCKED OUT light goes OFF</li> <li>• NORMAL light comes on</li> </ul> <i>Evaluator Cue – When the examinee reports the Electrical Trip Test Circuitry has been reset, acknowledge the report and cue the examinee that the JPM is complete.</i>	_____	_____	_____

JPM Stop Time: \_\_\_\_\_  
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**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Turbine On Line Tests – Alternate Path**JPM Number:** JPM517**Revision Number:** 02**Task Number and Title:** 381201.01, Complete Control Room actions to perform the Turbine Electrical Trip Test**K/A Number and Importance:** 241000 A4.19 / RO (3.5), SRO (3.4)**Suggested Testing Environment:** Simulator**Alternate Path:** ☒ Yes ☐ No **SRO Only:** ☐ Yes ☒ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- CPS 3812.01 Turbine On Line Tests, Rev. 18c
- CPS 3105.01 Turbine (TG, EHC, TS), Rev. 43a

**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 ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_  
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\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## **INITIAL CONDITIONS**

You are the B RO.

- The plant is in Mode 1 with the Main Turbine synchronized to the grid.
- CPS 3812.01, Turbine On Line Tests is scheduled to be performed.
- All prerequisites for CPS 3812.01 Turbine On Line Tests Section 8.1 Electrical Trip Test and Section 8.2 BOST Test are complete.
- Turbine Trips are NOT Disabled (NOT BYPASSED) per CPS 3105.01, Disabling Turbine Trips Using Global Bypass.
- Operators are stationed at Main Turbine Front Standard and at the first hit panel 1PA06J to reset annunciators.

## **INITIATING CUE**

The CRS has directed you to perform CPS 3812.01 Turbine On Line Tests sections 8.1 Electrical Trip Test and 8.2 Backup Overspeed Trip Test.

You have CRS permission to perform Critical Steps (CS).

Report to the CRS after completing the task.

**Job Performance Measure**  
**Place Feedwater Leakage Control (FWLC) In-Service**

JPM Number: JPM473

Revision Number: 01

Date: 10/1/18

Developed By: Tony Jennings 10/1/18  
Instructor Date

Validated By: Tim Windingland 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 3312.01 Rev: 47  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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



**Revision Record (Summary)**

Revision	Date	Description
00	9/14/16	New JPM.
01	10/1/18	Updated procedure references. Updated to new JPM template.

### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM473 per step 2)
  - a. Initialize to any shutdown IC.
  - b. Open or verify open 1B21-F065A and B RPV Inlet Valves.
  - c. Open and execute Simulator Lesson Plan JPM473 containing the following:
    - 1) RAT\_B\_DIFFERENTIAL
    - 2) YP\_XMFTB\_1 HPCS PMP MTR COUPLING FAILURE
    - 3) YFRIPPSS RCIC PUMP SHEARED SHAFT
    - 4) Ed01LMalfMot(32) = 3 LPCS Motor Short Circuit
    - 5) Ed01LMalfMot(35) = 3 RHR Pump C002C Motor Short Circuit
    - 6) YPXMAISE\_510 RR03B-RR B SUCTION LINE LEAK (51%)
  - d. Allow ADS to automatically initiate and depressurize the RPV.
  - e. This completes the setup for this JPM.
  - f. Ensure plant is stable and then save to a different IC if JPM is being used more than once. IC-218 (PW 59567) is saved for the ILT 18-1 NRC Exam.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-218 (PW 59567) is saved for the ILT 18-1 NRC Exam.
  - b. Ensure RHR 'A' and 'B' are operating in LPCI injection mode.
  - c. No simulator lesson plan is required once the IC has been established per step 1 above.
  - d. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
  - e. Freeze the simulator.

## **INITIAL CONDITIONS**

A Loss of Coolant Accident has occurred.  
FW/CB/CD injection is no longer available.

## **INITIATING CUE**

This is a time critical JPM.

The CRS has directed you to place Feedwater Leakage Control System (FWLCS) in service per CPS 3312.01 Residual Heat Removal (RHR) section 8.3.1 Feedwater Leakage Control System (FWLCS).

Report to the CRS when the task has been completed.

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

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### **Information For Evaluator's Use:**

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 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.

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with a copy of CPS 3312.01, RESIDUAL HEAT REMOVAL (RHR).				
<b>*1</b>	Aligns RHR 'A' and 'B' to the Feedwater Leakage Control (FWLC) System.	<b>8.3.1.1</b> Examinee determines FW/CB/CD injection is no longer available. <i>Evaluator Cue: If asked, cue the examinee that FW/CB/CD injection is no longer available.</i> <i>Evaluator – Record current time:</i> _____	—	—	—
		<b>*8.3.1.2</b> <b>Examinee rotates the control switches for 1B21-F065A and B RPV Inlet Valves (1H13-P870-5016) counter clockwise to the close position and verifies green lights are illuminated and red lights are extinguished.</b>			
		<b>8.3.1.3</b> Examinee observes that RPV pressure is < 330 psig using PPC or MCR meter indications.			
		<b>8.3.1.4</b> Examinee observes that RHR Pumps A and B are operating in LPCI mode.			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<b>SAT</b>	<b>UNSAT</b>	<b>Comment Number</b>
*1 (cont'd)	Aligns RHR 'A' and 'B' to the Feedwater Leakage Control (FWLC) System (cont'd)	<b>*8.3.1.5</b> <b>On 1H13-P601-5065, examinee turns the control switch for 1E12-F496, RHR to Feedwater "B" Keep Fill Valve clockwise to the Open position and verifies red light illuminated and green light extinguished.</b>			
		<b>*8.3.1.6</b> <b>On 1H13-P601-5064, examinee turns the control switch for 1E12-F497, RHR to Feedwater "A" Keep Fill Valve clockwise to the Open position and verifies red light illuminated and green light extinguished.</b> <i>Evaluator – Record current time: _____</i> <i>Evaluator – Verify times recorded in step 8.3.1.6 and 8.3.1.1 does not exceed 20 minutes.</i> <i>Cue: State the JPM is complete.</i>			

JPM Stop Time: \_\_\_\_\_  
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**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Place Feedwater Leakage Control (FWLC) In-ServiceJPM Number: JPM473 Revision Number: 01Task Number and Title: 331201.22 Feedwater Leakage Control System (FWLCS)K/A Number and Importance: 223001 A2.01 / RO (4.3), SRO (4.4)Suggested Testing Environment: SimulatorAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☒ Yes ☐ No

Reference(s):

- CPS 3312.01 RESIDUAL HEAT REMOVAL (RHR), Rev. 47

**Actual Testing Environment:** ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 10 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_

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**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### **INITIAL CONDITIONS**

A Loss of Coolant Accident has occurred.

FW/CB/CD injection is no longer available.

### **INITIATING CUE**

This is a time critical JPM.

The CRS has directed you to place Feedwater Leakage Control System (FWLCS) in service per CPS 3312.01 Residual Heat Removal (RHR) section 8.3.1 Feedwater Leakage Control System (FWLCS).

Report to the CRS after completing the task.

**Job Performance Measure**  
**Manually Startup RCIC System (Alternate Path)**

JPM Number: JPM204

Revision Number: 05

Date: 10/1/18

Developed By: Tony Jennings 10/1/18  
Instructor Date

Validated By: Matt Baker 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date



## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 3310.01 Rev: 30d  
Procedure 3310.01H001 Rev: 0a  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	07/06/07	Updated numbering convention. Old JPM number: 33100104LSA02.
01	08/18/10	Minor Technical Changes
02	3/5/13	Minor Technical Changes
03	6/16/15	Updated procedure references.
04	6/29/16	Updated procedure references.
05	10/1/18	Updated to new JPM template.

### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM204 per step 2)
  - a. Initialize to any suitable at power IC with RCIC in standby.
  - b. Lockout the MDRFP and auxiliary oil pump by performing the following:
    - 1) Select FPC
    - 2) Select RFP 1C Stop Start
    - 3) Hold stop for ~ 5 seconds (until FPC arrow disappears)
    - 4) Select Exit
    - 5) Select Aux Lube Oil Pump
    - 6) Select RFP 1C Aux Oil Pump
    - 7) Select Lock (until Stopped indicated)
    - 8) Select Exit
  - c. Place the RMS in shutdown and stabilize RPV level.
  - d. Open and execute Simulator Lesson Plan JPM204 which will perform the following:
    - 1) Loss of Main Condenser Vacuum (YPXMAELSE\_239 100%) - will result in a Group 1 Isolation
    - 2) Insert malfunction to disable RCIC Automatic Initiation (YP\_XMFTB\_4959 – Insert)
    - 3) Insert an Instructor Override (I/O) to maintain the RCIC Manual Initiation Pushbutton NOT DEPRESSED (A05\_A02\_A09S59B\_1 – Release)
  - e. Restore Reactor level to approximately -10 inches using High Pressure Core Spray (HPCS) and then shutdown the HPCS system (as necessary). DO NOT allow RPV Level to lower to the Level 2 setpoint (prevents Gland Seal Air Compressor from shunt tripping on Level 2).
  - f. Freeze the simulator.
  - g. This completes the setup for this JPM.
  - h. Save to a different IC if JPM is being used more than once. IC-219 (PW 59567) is saved for the ILT 18-1 NRC Exam.

<p><b>NOTE:</b> It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.</p>
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## 2. JPM Administration

- a. Reset to the IC saved after performing step 1 above. IC-219 (PW 59567) is saved for the ILT 18-1 NRC Exam.
- b. Make sure the RCIC Initiation / Shutdown Hard Card on 1H13-P601 is free of markings.
- c. No simulator lesson plan is required once the IC has been established per step 1 above.
- d. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
- e. Freeze the simulator.

### **INITIAL CONDITIONS**

You are the Extra RO.

A loss of vacuum and all Feedwater has occurred followed by an Automatic Scram.

All immediate Operator actions have been completed.

### **INITIATING CUE**

Manually initiate RCIC and inject into the RPV.

Hard card use is authorized.

Report to the CRS after completing the task.

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

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#### **Information For Evaluator's Use:**

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 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.

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1	Initiates RCIC	3310.01H001 step 1 Examinee: <ul style="list-style-type: none"> <li>rotates the collar of the RCIC MANUAL INITIATION push-button to ARM position, and</li> <li>depresses the RCIC MANUAL INITIATION push-button, and</li> <li>determines that RCIC has failed to initiate (1E51-F045 fails to open).</li> </ul> <i>Examinee Cue – If the examinee reports the failure of RCIC to initiate, acknowledge the report and then state, “Continue with RCIC startup”.</i>	—	—	—
<b>Alternate Path Begins</b>					
CUE	Provide the examinee with a copy of CPS 3310.01 REACTOR CORE ISOLATION COOLING (RI) when requested.				
2	Performs RCIC System pre-start verifications.	3310.01 8.1.4.1 Examinee drains the RCIC Exhaust Drain Pot (if time allows). <i>Examinee Cue – If the examinee asks if time allows for draining the RCIC Exhaust Drain pot, state, “Time does not allow for draining the RCIC Exhaust Drain Pot.”</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
2 (cont'd)	Performs RCIC System pre-start verifications (cont'd).	3310.01 8.1.4.2 On 1H13-P601-5063, examinee rotates the control switch for the Gland Seal Air Compressor to the START position. Verifies red light ON and green light OFF.  <i>Examinee Note – This is not a critical step – RCIC can function without the Gland Seal Air Compressor.</i>	—	—	—
		3310.01 8.1.4.3 Examinee verifies 1E51-F019 RCIC Pmp Min Flow Recirc valve operation when RCIC has been started. <ul style="list-style-type: none"> <li>• Opens when RCIC flow is &lt; 120 gpm, and</li> <li>• Shuts when RCIC flow is &gt; 240 gpm.</li> </ul>	—	—	—
		3310.01 8.1.4.4 On 1H13-P680-5007 (PPC Display) or at 1H13-P678 Standby Information Panel, the examinee verifies the Main Turbine tripped using at least one of the following methods: <ul style="list-style-type: none"> <li>• Verifying all Main Turbine Stop Valves, Control Valves, Intercept Valves, and Intermediate Stop Valves are closed, or</li> <li>• Verifying the two green indicator lights for the Trip Valves indicate “tripped”, or</li> <li>• Verifying annunciator 5007-1B Turb Trip EHC Sys is locked in.</li> </ul>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
2 (cont'd)	Performs RCIC System pre-start verifications (cont'd).	3310.01 8.1.4.5 On 1H13-P680-5002, the examinee verifies the TDRFPs are tripped using at least one of the following methods: <ul style="list-style-type: none"> <li>Graphic indications for FPA and FPB on the DFW screen indicates tripped (orange or white icon), or</li> <li>Verifying annunciators 5002-1C and 1G locked in.</li> </ul>	—	—	—
<b>*3</b>	Manually initiates RCIC with logic NOT operable.	<b>*3310.01 8.1.4.6</b> <b>Examinee locates hand switch for 1E51-F045 on 1H13-P601-5063, rotates switch to the OPEN position, and verifies Red light ON and Green light OFF.</b>	—	—	—
		<b>*3310.01 8.1.4.7</b> <b>Examinee locates hand switch for 1E51-F013 on 1H13-P601-5063, rotates switch to the OPEN position and verifies Red light ON and Green light OFF.</b> <i>Examiner Cue – if the examinee reports that RCIC is injecting, acknowledge the report.</i>	—	—	—



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
4	Performs RCIC post start verifications.	3310.01 8.1.4.8 – 8.1.4.9  Examinee performs the following post start verifications: <ul style="list-style-type: none"> <li>• 1E51-F025, RHR &amp; RCIC Stm Supp First Drn Isol Vlv shuts</li> <li>• 1E51-F026, RHR &amp; RCIC Stm Supp Second Drn Isol Vlv shuts</li> <li>• 1E51-F004, RCIC Turb Exh Drn To RF First Isol Valve shuts</li> <li>• 1E51-F005, RCIC Turb Exh Drn To RF Second Isol Valve shuts</li> <li>• RCIC Pmp Rm Sply Fan, 1VY04C running (1H13-P801-5050)</li> </ul>	—	—	—
5	Adjusts RCIC flow to raise RPV level.	3310.01 8.1.4.10  Examinee adjusts RCIC Pump Flow Cont, 1E51-R600, as necessary to raise RPV level.  <i>Examiner Note:</i> <ul style="list-style-type: none"> <li>- If RCIC flow is adjusted &lt; 450 gpm, examinee shifts 1E51-R600 to Manual.</li> <li>- If RCIC Flow Controller is shifted to Manual, the examinee maintains RCIC Turbine speed ≥ 1500 rpm.</li> </ul> <i>Examiner Note: If the examinee exceeds these limits for more than 30 seconds (&lt; 450 gpm in Auto or &lt; 1500 RPM in manual), then the step is unsat and a competency deficiency should be documented.</i>  <i>Examiner Cue - If asked, as CRS state, "Maintain the RCIC Flow Controller in AUTO. Your level band is Level 3 to Level 8."</i>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Manually Startup RCIC System (Alternate Path)JPM Number: JPM204 Revision Number: 05Task Number and Title: 331001.04 Manually RCIC Initiation with Logic Not OperableK/A Number and Importance: 217000 A4.04 / RO (3.6), SRO (3.6)Suggested Testing Environment: SimulatorAlternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s):

- CPS 3310.01 REACTOR CORE ISOLATION COOLING (RI), Rev. 30d
- CPS 3310.01H001 RCIC INITIATION-SHUTDOWN HARD CARD, Rev. 0a

**Actual Testing Environment:** ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 12 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_  
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\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### **INITIAL CONDITIONS**

You are the Extra RO.

A loss of vacuum and all Feedwater has occurred followed by an Automatic Scram.

All immediate Operator actions have been completed.

### **INITIATING CUE**

Manually initiate RCIC and inject into the RPV.

Hard card use is authorized.

Report to the CRS after completing the task.

**Job Performance Measure**  
**Re-energize 4160V Bus 1A**

JPM Number: JPM503

Revision Number: 03

Date: 10/2/18

Developed By: Tony Jennings 10/2/18  
Instructor Date

Validated By: Tim Windingland 4/30/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
                  Procedure 3501.01                      Rev: 29  
                  Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
                  Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
00	11/17/12	New JPM.
01	9/16/16	Updated procedure references. Updated to new template.
02	2/27/17	Revised to incorporate comments from the ILT 15-1 NRC Exam.
03	10/2/18	Updated procedure references. Updated to new template.

### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM503 per step 2)
  - a. Initialize to any suitable at power IC.
  - b. Verify CRD Pump B is running.
  - c. Insert a manual scram and allow the MDRFP to stabilize RPV level.
  - d. Place the following control switches in PTL or Lock/Stop:
    - 1) Component Cooling Water Pump 1A, 1CC01PA
    - 2) Component Cooling Water Pump 1C, 1CC01PC
    - 3) Plant Service Water Pump 1A, 1WS01PA
    - 4) Plant Service Water Pump 1C, 1WS01PC
    - 5) Service Air Compressor 0, 0SA01C
    - 6) Condensate Pump 1A, 1CD01PA
    - 7) Condensate Pump 1C, 1CD01PC
    - 8) Condensate Booster A, 1CB01PA / Cond Booster Pmp 1A Aux Lube Oil Pmp, 1CB07PA
    - 9) Condensate Booster C, 1CB01PC / Cond Booster Pmp 1C Aux Lube Oil Pmp, 1CB07PC
  - e. Freeze the simulator.
  - f. This completes the setup for this JPM.
  - g. Save to a different IC if JPM is being used more than once. IC-220 (PW 59567) is saved for the ILT 18-1 NRC Exam.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-220 (PW 59567) is saved for the ILT 18-1 NRC Exam.
  - b. Open and execute simulator lesson plan ILT 18-1 NRC exam JPMs.

- c. Release JPM 503 which performs the following:
  - 1) Inserts override to switch 4160V BUS 1A RES BKR 1AP06EM to the PTL position.
  - 2) Overrides 1AP06EM GREEN LITE to ON.
- d. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
- e. This completes the setup for this JPM.
- f. Freeze the simulator.



## INITIAL CONDITIONS

A scram has occurred.

4160V Bus 1A failed to transfer to the reserve source due to a breaker failure, resulting in de-energization of 4160V Bus 1A.

The breaker failure has been corrected.

## INITIATING CUE

You are the 'B' RO.

The CRS has directed you to re-energize 4160V Bus 1A IAW CPS 3501.01 High Voltage Auxiliary Power System, section 8.1.2 Energizing 4160V Bus 1A, 1AP06E (1B, 1AP08E).

- Steps 8.1.2.3 and 8.1.2.4 of CPS 3501.01 are complete.
- After 4160V Bus 1A has been re-energized, restoration actions will be performed by another Reactor Operator.

Report to the CRS after completing the task.

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

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### Information For Evaluator's Use:

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 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.

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with a copy of CPS 3501.01 High Voltage Auxiliary Power System.				
<b>*1</b>	Prepares 4160V Bus 1A for re-energization.	<b>*CPS 3501.01 step 8.1.2.1</b> On 1H13-P870-5012 examinee: <ul style="list-style-type: none"> <li><b>Places 4160V Bus 1A Mn Bkr 1A 1AP06EK in the PULL-TO-LOCK position.</b></li> <li>Places 4160V Bus 1A Res Bkr 1A 1AP06EM in the PULL-TO-LOCK position.</li> </ul> <i>Evaluator Note: Only 1AP06EK is critical with 1AP06EM in PTL per the JPM setup.</i>	—	—	—
		<b>CPS 3501.01 step 8.1.2.2</b> On 1H13-P870-5012 examinee verifies open (green light illuminated, red light extinguished) the following breakers: <ul style="list-style-type: none"> <li>480V XFMR Q &amp; I BKR, 1AP06EJ</li> <li>480V XFMR G &amp; K BKR, 1AP06EQ</li> </ul>	—	—	—
		<b>CPS 3501.01 steps 8.1.2.3 &amp; 8.1.2.4</b> Examinee verifies control switches for 4160V Bus 1A loads are in Pull-To-Lock or Lock/Stop. <i>Evaluator note – no action is required by the examinee. This verification was noted as complete in the initiating cue.</i>	—	—	—
<b>*2</b>	Re-energizes 4160V Bus 1A.	<b>*CPS 3501.01 step 8.1.2.5</b> <b>On 1H13-P870-5012, examinee places 4160V Bus 1A Res Bkr Sync switch to ON.</b>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>*2 (cont'd)</b>	Re-energizes 4160V Bus 1A (cont'd).	<b>*CPS 3501.01 step 8.1.2.6</b> <b>On 1H13-P870-5012, examinee places 4160V Bus 1A Res Bkr 1AP06EM in CLOSE (red light illuminated and green light extinguished).</b>			
		CPS 3501.01 step 8.1.2.7 Examinee verifies 4160 Bus 1A energized by observing any/all of the following indications: <ul style="list-style-type: none"> <li>• Bus energized red light</li> <li>• 4160 V Bus 1A Voltage Meter on P870</li> <li>• Annunciator 5012-1D AC Undervoltage 4160V Bus reset.</li> </ul>			
		<b>*CPS 3501.01 step 8.1.2.8</b> <b>On 1H13-P870-5012, examinee places 4160V Bus 1A Res Bkr Sync switch to OFF.</b>			
		CPS 3501.01 step 8.1.2.9 Examinee may place 4160V Bus 1A Mn Bkr, 1AP06EK C/S to AUTO. <i>Evaluator note – Examinee may N/A step 8.1.2.9 in anticipation of placing the plant in a normal shutdown alignment. If that occurs, is should <u>not</u> be considered a competency hit.</i>			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<b>SAT</b>	<b>UNSAT</b>	<b>Comment Number</b>
<b>*2 (cont'd)</b>	Re-energizes 4160V Bus 1A (cont'd).	CPS 3501.01 step 8.1.2.10 Examinee re-energizes 480V Unit Subs powered from 4160V Bus 1A. <i>Evaluator Note - No action required by examinee. 480V Unit Sub restoration activities will be performed by another operator.</i> <i>Evaluator Cue – State that the JPM is complete.</i>			

JPM Stop Time: \_\_\_\_\_  
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**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO CertJPM Title: Re-energize 4160V Bus 1AJPM Number: JPM503Revision Number: 03Task Number and Title: 350101.17 Energize 4160V Bus 1A 1AP06EK/A Number and Importance: 295003 AA1.01 / RO (3.7), SRO (3.8)Suggested Testing Environment: SimulatorAlternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s):

- CPS 3501.01 High Voltage Auxiliary Power System, Rev. 29

**Actual Testing Environment:** ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other**Testing Method:** ☐ Simulate ☒ PerformEstimated Time to Complete: 15 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_

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**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### **INITIAL CONDITIONS**

A scram has occurred.

4160V Bus 1A failed to transfer to the reserve source due to a breaker failure, resulting in de-energization of 4160V Bus 1A.

The breaker failure has been corrected.

### **INITIATING CUE**

You are the 'B' RO.

The CRS has directed you to re-energize 4160V Bus 1A IAW CPS 3501.01 High Voltage Auxiliary Power System, section 8.1.2 Energizing 4160V Bus 1A, 1AP06E (1B, 1AP08E).

- Steps 8.1.2.3 and 8.1.2.4 of CPS 3501.01 are complete.
- After 4160V Bus 1A has been re-energized, restoration actions will be performed by another Reactor Operator.

Report to the CRS after completing the task.

**Job Performance Measure**  
**Restore ADS Air Supply To Normal Source (Alternate Path)**

JPM Number: JPM427

Revision Number: 03

Date: 10/3/18

Developed By: Tony Jennings 10/3/18  
Instructor Date

Validated By: Matt Baker 4/29/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 3101.01 Rev: 24  
Procedure 5040.06 Rev: 28b  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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



**Revision Record (Summary)**

Revision	Date	Description
00	07/28/10	Update Procedure Revs, KAs and JPM number (31010107LSN02)
01	06/14/13	Updated to new template
02	8/29/16	Updated procedure references. Made editorial changes to the simulator setup instructions.
03	10/3/18	Updated procedure references. Updated to new JPM template.

### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM427 per step 2)
  - a. Initialize to any suitable at power/shutdown IC.
  - b. Place the ADS Backup Air Bottles in service with 1IA012A & 13A open, and 1IA012B and 13B shut IAW CPS 3101.01 Main Steam (MS, IS & ADS) steps 8.2.4.1 and 8.2.4.2.
  - c. Freeze the simulator.
  - d. Save to a different IC if JPM is being used more than once. IC-203 (PW 59567) is saved for the ILT 18-1 NRC Exam.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-203 (PW 59567) is saved for the ILT 18-1 NRC Exam.
  - b. Open and execute Simulator Lesson Plan ILT 18-1N JPMs.
  - c. Release JPM427 which will insert the following malfunctions & overrides:
    - 1) Fail 1PI-IA079 to 125 psig (0.5) on a 2 minute ramp when 1IA013A is shut.
    - 2) Fail 1PI-IA078 to 125 psig (0.5) on a 2 minute ramp when 1IA012A is shut.
    - 3) Delete the 1PI-IA079 (P601) instructor override when 1IA013A is reopened.
    - 4) Delete the 1PI-IA078 (P601) instructor override when 1IA012A is reopened.
    - 5) Bring in Annunciator 5040-6F when either 1PI-IA079 or 1PI-IA078 less than 150 psig (0.6).
    - 6) Clear Annunciator 5040-6F when both 1IA013A and 1IA012A open.
  - d. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
  - e. This completes the setup for this JPM.
  - f. Freeze the simulator.

## **INITIAL CONDITIONS**

You are the 'B' RO.

The ADS backup air bottles are in service.

## **INITIATING CUE**

Return ADS to the normal air supply per CPS 3101.01 Main Steam (MS, IS & ADS) step 8.2.4.5.

Report to the CRS after completing the task.

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

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### **Information For Evaluator's Use:**

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 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.

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with a copy of CPS 3101.01 Main Steam (MS, IS & ADS)				
<div><u>Evaluator Note</u></div> <div>The procedure steps for this task list the Division 1 and 2 valves in each step. The examinee may execute the procedure in 1 of 2 ways as follows, either of which is acceptable:</div> <div><ul style="list-style-type: none"><li>• Performs all the procedure steps (8.2.4.5.1 – 8.2.4.5.4) for Div 1 and then goes back and performs all the procedure steps for Div 2 (8.2.4.5.1 – 8.2.4.5.4) or vice versa.</li><li>• Performs each step for Div 1 and then Div 2 valves or vice versa.</li></ul></div>					
*1	Isolates the ADS Backup Air Bottles.	<b>3101.01 8.2.4.5.1</b> <b>Examinee:</b> <b>Examinee rotates the control switches for 1IA012A(13A) ADS IA CNMT Outbd Isol Vlv to CLOSE and verifies red light OFF, green light ON.</b>  1IA012A Closed SAT__ UNSAT __ Comment No. __ 1IA013A Closed SAT__ UNSAT __ Comment No. __	—	—	—
*2	Aligns the normal air supply to the ADS valves.	<b>3101.01 8.2.4.5.2</b> <b>Examinee rotates the control switches for 1IA012B(13B) ADS IA CNMT Inbd Isol Vlv to OPEN and release and verifies red light ON, green light OFF.</b>  1IA012B Opened SAT__ UNSAT __ Comment No. __ 1IA013B Opened SAT__ UNSAT __ Comment No. __	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>*3</b>	Restores control switches to normal position for the ADS Backup Air Bottles.	<b>3101.01 8.2.4.5.3</b> <b>Examinee rotates the control switches for 1IA012A(13A) ADS IA CNMT Outbd Isol Vlv to AUTO.</b> 1IA012A in AUTO SAT__ UNSAT __ Comment No. __ 1IA013A in AUTO SAT__ UNSAT __ Comment No. __ <i>Evaluator Note – No valve movement will occur when the 1IA012A and 13A control switches are restored to AUTO.</i>	—	—	—
4	Verifies ADS Instrument Air Header pressure within procedural limits.	Examinee locates 1PI-IA078 & 1PI-IA079 on 1H13-P601 and determines air pressure is less than 160 psig. <i>Evaluator Cue – If the examinee requests an Equipment Operator to check air amplifier operation, cue him/her that the Containment is not accessible.</i>	—	—	—
<b>Alternate Path Begins</b>					
5	Responds to annunciator 5040-6F.	Examinee determines that 5040-6F Operator Action 4 should be performed to shift ADS air supply back to the backup air bottles.	—	—	—
<b>*6</b>	Isolates the normal air supply to the ADS valves.	<b>3101.01 8.2.4.1 and 8.2.4.2</b> <b>Examinee rotates the control switches for 1IA012B(13B) ADS IA CNMT Inbd Isol Vlv to CLOSE and release and verifies red light OFF, green light ON.</b> 1IA012B Closed SAT__ UNSAT __ Comment No. __ 1IA013B Closed SAT__ UNSAT __ Comment No. __	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
7	Verifies Backup Air Bottles auto align.	3101.01 8.2.4.1 and 8.2.4.2 Examinee verifies 1IA012A (13A) opens. 1IA012A Open SAT__ UNSAT __ Comment No. __ 1IA013A Open SAT__ UNSAT __ Comment No. __	—	—	—
8	Verifies ADS Instrument Air Header pressure within procedural limits.	3101.01 8.2.4.3 Examinee verifies (1H13-P601, 5067): <ul style="list-style-type: none"> <li>• ADS Instrument Air Hdr Pressure, 1PI-IA078/79 &gt; 147.5 psig.</li> <li>• ADS Backup Air Hdr Pressure, 1PI-IA080/81 &gt; 2300 psig.</li> <li>• Examinee locates 1PI-IA078 / 79 on 1H13-P601-5067 and determines Instrument Air Header Pressure is &gt; 147.5 psig.</li> <li>• Examinee locates 1PI-IA080 / 81 on 1H13-P601-5067 and determines Backup Air Header Pressure is &gt; 2300 psig.</li> </ul> <i>Evaluator Cue – When the examinee reports that the ADS Backup Air Bottles have been placed on service, acknowledge the report and state that the JPM is complete.</i>	—	—	—

JPM Stop Time: \_\_\_\_\_

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**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Restore ADS Air Supply To Normal Source (Alternate Path)**JPM Number:** JPM427 **Revision Number:** 03**Task Number and Title:** 310101.08 Complete control room actions to perform placing ADS backup air bottles in service.**K/A Number and Importance:** 300000 A4.01 / RO (2.6), SRO (2.7)**Suggested Testing Environment:** Simulator**Alternate Path:** ☒ Yes ☐ No **SRO Only:** ☐ Yes ☒ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- CPS 3101.01 MAIN STEAM (MS, IS & ADS), Rev. 24
- CPS 5040.06 (6F) HIGH/LOW PRESS ADS IA SUPPLY DIV 1 OR 2, Rev. 28b

**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 ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_  
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\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### **INITIAL CONDITIONS**

You are the 'B' RO.

The ADS backup air bottles are in service.

### **INITIATING CUE**

Return ADS to the normal air supply per CPS 3101.01 Main Steam (MS, IS & ADS) step 8.2.4.5.

Report to the CRS after completing the task.



**Job Performance Measure**  
**Shift CCP Supply and Exhaust Fans**

JPM Number: JPM560

Revision Number: 00

Date: 10/8/18

Developed By: Tony Jennings 10/8/18  
Instructor Date

Validated By: Aaron Marr 4/29/19  
SME or Instructor Date

Reviewed By: Pat Bulpitt 6/3/19  
Operations Representative Date

Approved By: Tony Jennings 6/3/19  
Training Department Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
Procedure 3408.01 Rev: 20e  
Procedure 5043.01 Rev: 22a  
Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

Revision	Date	Description
00	10/8/18	New JPM.

### **SIMULATOR SETUP INSTRUCTIONS**

1. IC Setup (NA if administering JPM560 per step 2)
  - a. Initialize to any suitable at power IC.
  - b. Verify Continuous Containment Purge (CCP) is operating in unfiltered mode with the 'A' supply and exhaust fans in operation.
  - c. Freeze the simulator.
  - d. This completes the setup for this JPM.
  - e. Save to a different IC if JPM is being used more than once. IC-203 (PW 59567) is saved for the ILT 18-1 NRC Exam.

**NOTE:** It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. JPM Administration
  - a. Reset to the IC saved after performing step 1 above. IC-203 (PW 59567) is saved for the ILT 18-1 NRC Exam.
  - b. No simulator lesson plan is required for this JPM.
  - c. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
  - d. Freeze the simulator.

## **INITIAL CONDITIONS**

You are the Extra RO.

Continuous Containment Purge (CCP) is operating in unfiltered mode IAW CPS 3408.01 Containment Building/Drywell HVAC (VR, VQ).

A field operator has been briefed and is standing by to perform any required field operations.

## **INITIATING CUE**

The CRS has directed you to shift the CCP Supply and Exhaust Fans IAW CPS 3408.01 Containment Building/Drywell HVAC (VR, VQ) section 8.1.2.5 Shifting the CCP Supply and/or Exhaust Fans.

Radiation Protection has been notified of the ventilation system shift.

Report to the CRS after completing the task.

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

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### **Information For Evaluator's Use:**

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 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.

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Cue	Provide the examinee with a copy of CPS 3408.01 Containment Building/Drywell HVAC (VR, VQ).				
<b>*1</b>	Selects non-running CCP Supply Fan to lead.	<b>3408.01 8.1.2.5.1</b> <b>Examinee rotates CNMT BLDG SPLY FAN 1VR06CA/CB Selector Switch to 06CB lead.</b>	—	—	—
<b>*2</b>	Shifts CCP Supply Fans.	<b>3408.01 8.1.2.5.2</b> <b>Examinee places CNMT BLDG SPLY FAN 1VR06CA handswitch in Auto-After-Stop and observes:</b> <ul style="list-style-type: none"> <li>• 1VR06CB starts (red light ON, green light OFF)</li> <li>• CNMT BLDG SPLY FAN ISOL VLV 1VR004B opens (red light ON, green light OFF)</li> <li>• 1VR06CA trips (red light OFF, green light ON).</li> <li>• CNMT BLDG SPLY FAN ISOL VLV 1VR004A closes (red light OFF, green light ON).</li> </ul> <i>Examiner Cue – if the examinee reports receipt of annunciators 5043-1G AUTO START VR SYSTEM CCP SUP/EXH FAN and/or 5042-7C HI/LO DP CNMT BLDG, acknowledge the report.</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>3*</b>	Normalizes HS for 1VR06CB.	<b>3408.01 8.1.2.5.3</b> <b>Examinee places Place CNMT BLDG SPLY FAN 1VR06CB handswitch for the running fan in Auto-After-Start and verifies 5043-1G AUTO START VR SYSTEM CCP SUP/EXH FAN resets.</b> <i>Examiner Cue – if the examinee reports reset of annunciator 5043-1G AUTO START VR SYSTEM CCP SUP/EXH FAN, acknowledge the report.</i>			
<b>*4</b>	Selects non-running CCP Exhaust Fan to lead.	<b>3408.01 8.1.2.5.4</b> <b>Examinee rotates CNMT BLDG EXH FAN 1VR07CA/CB Selector Switch to 07CB lead.</b>	—	—	—
<b>*5</b>	Shifts CCP Exhaust Fans.	<b>3408.01 8.1.2.5.5</b> <b>Examinee places CNMT BLDG EXH FAN 1VR07CA handswitch in Auto-After-Stop and observes:</b> <ul style="list-style-type: none"> <li>• 1VR07CB starts (red light ON, green light OFF)</li> <li>• CNMT BLDG SPLY FAN ISOL VLV 1VR009B opens (red light ON, green light OFF)</li> <li>• 1VR07CA trips (red light OFF, green light ON).</li> <li>• CNMT BLDG SPLY FAN ISOL VLV 1VR009A closes (red light OFF, green light ON).</li> </ul> <i>Examiner Cue – if the examinee reports receipt of annunciator 5043-1G AUTO START VR SYSTEM CCP SUP/EXH FAN, acknowledge the report.</i>	—	—	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
6*	Normalizes HS for 1VR07CB.	<b>3408.01 8.1.2.5.6</b> <b>Examinee places Place CNMT BLDG EXH FAN 1VR07CB handswitch for the running fan in Auto-After-Start and verifies 5043-1G AUTO START VR SYSTEM CCP SUP/EXH FAN resets.</b> <i>Examiner Cue – if the examinee reports reset of annunciator 5043-1G AUTO START VR SYSTEM CCP SUP/EXH FAN, acknowledge the report.</i>	—	—	—
7	Verifies Primary to Secondary Containment differential pressure in specification.	<b>3408.01 8.1.2.5.7</b> Examinee directs field operator to verifies Primary Containment to Secondary Containment differential pressure stabilizes between -0.25 and +0.25 psid. <i>Evaluator Cue – Cue the examinee that Primary to Secondary Containment dP is 0 psid.</i>	—	—	—
8	Verifies Drywell to Primary Containment differential pressure in specification.	<b>3408.01 8.1.2.5.8</b> Check that Drywell to Primary Containment differential pressure stabilizes between -0.2 and +1.0 psid. <i>Evaluator Note – This action is performed in the NSPS panels in the MCR and is not available in the simulator.</i> <i>Evaluator Cue – Cue the examinee that the 'B' RO has checked Drywell to Primary Containment differential pressure has stabilized between -0.2 and +1.0 psid.</i>	—	—	—
CUE	Cue the examinee that the JPM is complete.				

JPM Stop Time: \_\_\_\_\_



**JPM SUMMARY****Operator's Name:** \_\_\_\_\_ **Emp. ID#:** \_\_\_\_\_**Job Title:** ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert**JPM Title:** Shift CCP Supply and Exhaust Fans**JPM Number:** JPM560 **Revision Number:** 00**Task Number and Title:** 340801.44 Shift the CCP Supply and/or Exhaust Fans**K/A Number and Importance:** 288000 A4.01 / RO (3.1), SRO (2.9)**Suggested Testing Environment:** Simulator**Alternate Path:** ☐ Yes ☒ No **SRO Only:** ☐ Yes ☒ No **Time Critical:** ☐ Yes ☒ No**Reference(s):**

- CPS 3408.01 CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ), Rev. 20e
- CPS 5043.01 (1G) AUTO START VR SYSTEM CCP SUP/EXH FAN, Rev. 22a

**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 ☐ NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory**Comments:** \_\_\_\_\_  
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\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### **INITIAL CONDITIONS**

You are the Extra RO.

Continuous Containment Purge (CCP) is operating in unfiltered mode IAW CPS 3408.01 Containment Building/Drywell HVAC (VR, VQ).

A field operator has been briefed and is standing by to perform any required field operations.

### **INITIATING CUE**

The CRS has directed you to shift the CCP Supply and Exhaust Fans IAW CPS 3408.01 Containment Building/Drywell HVAC (VR, VQ) section 8.1.2.5 Shifting the CCP Supply and/or Exhaust Fans.

Radiation Protection has been notified of the ventilation system shift.

Report to the CRS after completing the task.