

CLINTON POWER STATION

Job Performance Measure

Complete an SRV Actuation Report

JPM Number: JPM407

Revision Number: 02

Date: 8/25/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/25/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>Tony Jennings</u> Training Department	<u>11/15/16</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 CPS 3831.01 Rev: 6b
Procedure CPS 3831.01D002 Rev: 6
Procedure CPS 3831.01F001 Rev: 4
- _____ 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)

Revision	Date	Description
00	NA	New JPM number and updated revisions (10110001SAF01)
01	2/22/11	Updated for procedure revision.
02	8/23/16	Updated procedure references and made editorial changes throughout.

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

Simulator Setup Instructions

1. No simulator setup is required for this 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:

- The SRV actuation report is correctly filled out and SRV B21-F047A has been identified as leaking.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS 9056.02, SAFETY/RELIEF VALVE ACTUATION TEST Rev. 29b
- CPS 3831.01, SAFETY RELIEF VALVE REPORT Rev. 6b
- CPS 3831.01D002 ACTUATION LOG Rev. 6
- CPS 3831.01F001 COMMENT SHEET Rev. 4

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- Provide the examinee with the following items:
 - Initial Conditions and Initiating Cue page (page 14 of the JPM)
 - SRV Tailpipe Temperature Graph (page 15 of the JPM)
 - DCS Display 6D-04 (page 16 of the JPM)
 - DCS Display D05AD1 (page 17 of the JPM)
 - DCS Display DD5BD3 (page 18 of the JPM)
 - CPS 3831.01 Safety Relief Valve Report Rev. 6b (blank)
 - CPS 3831.01D002 Actuation Log Rev. 6 (with block 310 marked NA)
 - CPS 3831.01F001 Comment Sheet Rev. 4 (blank)
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

You are the 'B' RO on dayshift.

The unit is operating at 80% power.

CPS 9056.02 SAFETY/RELIEF VALVE ACTUATION TEST was performed on B21-F047A on the previous shift (midshift) during steady state operations.

During the test, B21-F047A was opened at 0027 for 1 minute 0 seconds.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § Do NOT shine any type light into a panel.

The CRS has provided you with the following data sheets:

- SRV B21-F047A tailpipe temperature graph
- Pre-test and Post-test screen shots of PPC screens 6D-04 (IRM/APRM indications), D05AD1 (SPDS Summary Display), and DD5BD3 (SPDS RPV, Pri-Cnmt, and Hydrogen Display)

The CRS has marked block 310 of CPS 3831.01D002 Actuation Log NA.

The CRS has directed you to complete CPS 3831.01 Safety Relief Valve Report for 1B21-F047A.

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 **BOLDED** 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

CPS 3831.01 Safety Relief Valve Report Section 8.0 Procedure
CPS 3831.01D002 Actuation Log

JPM Step 1 Fill in block 302 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “B21-F047A” in block 302.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

JPM Step 2 Fill in block 303 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records today’s date in block 303.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

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

JPM Step 3 Fill in block 304 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “0027” in block 304.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***JPM Step 4** Fill in block 305 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “B” in block 305.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***JPM Step 5** Fill in block 306 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “C” in block 306.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

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

***JPM Step 6 Fill in block 307 of CPS 3831.01D002, ACTUATION LOG.**

Standard: Examinee records “E” in block 307.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

JPM Step 7 Fill in block 308 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “80%” in block 308.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***JPM Step 8 Fill in block 309 of CPS 3831.01D002, ACTUATION LOG.**

Standard: Examinee determines that the tailpipe temperature for B21-F047A has not returned to normal or that the SRV is leaking. Block 309 may be left blank or N/A’d.

Cue: If the examinee determines that the tailpipe has not returned to normal or that the SRV is leaking, as the CRS instruct the examinee to leave the block blank if questioned and continue.

Comments The critical portion of this step is the determination that B21-F047A tailpipe temperature has not returned to normal value, not recording a data value.

SAT £ UNSAT £ Comment Number _____

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

JPM Step 9 Fill in block 310 of CPS 3831.01D002, ACTUATION LOG.

Standard: No examinee action required – block is already filled in.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

JPM Step 10 Fill in block 311 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “1013” in block 311.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

JPM Step 11 Fill in block 312 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “1013” in block 312.

Cue: If the examinee requests the reseal pressure value, cue him/her that the valve
resealed at the pressure indicated on the post test SPDS summary screen.

Comments

SAT £ UNSAT £ Comment Number _____

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

JPM Step 12 Fill in block 313 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “1 minute 0 seconds” in block 313.

Cue: If the examinee requests the duration time for the actuation of B21-F047A, cue him/her that B21-F047A was open for 1 minute 0 seconds.

Comments

SAT £ UNSAT £ Comment Number _____

JPM Step 13 Fill in block 314 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “A” and/or “E” in block 314.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

JPM Step 14 Fill in block 315 of CPS 3831.01D002, ACTUATION LOG.

Standard: Examinee records “N/A” in block 315.

Cue: As the CRS, cue the examinee to record “N/A” in block 315.

Comments

SAT £ UNSAT £ Comment Number _____

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

JPM Step 15 If CPS 3831.01F001 Comment Sheet is completed for this log entry, indicate “YES” IN BLOCK 316. If not completed, indicate “NO” in block 316.

Standard: Examinee records “Yes” or “No” in block 316.

Cue:

Comments If the examinee records “Yes” in block 316, an entry in CPS 3831.01F001 Comment Sheet should be made.

SAT £ UNSAT £ Comment Number _____

JPM Step 16 Examinee completes CPS 3831.01D002 Actuation Log.

Standard: Examinee records his/her signature and date in the “Completed By” blanks and provides the completed CPS 3831.01D002 Actuation Log to Shift Supervision for review.

Cue: Cue the examinee that the JPM is complete.

Comments

SAT £ UNSAT £ Comment Number _____

TERMINATING CUES:

The JPM is complete when the student has delivered CPS 3831.01F001 Comment Sheet to Shift Supervision for review.

STOP TIME: _____

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

INITIAL CONDITIONS:

You are the 'B' RO on dayshift.

The unit is operating at 80% power.

CPS 9056.02 SAFETY/RELIEF VALVE ACTUATION TEST was performed on B21-F047A on the previous shift (midshift) during steady state operations.

During the test, B21-F047A was opened at 0027 for 1 minute 0 seconds.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § Do NOT shine any type light into a panel.

The CRS has provided you with the following data sheets:

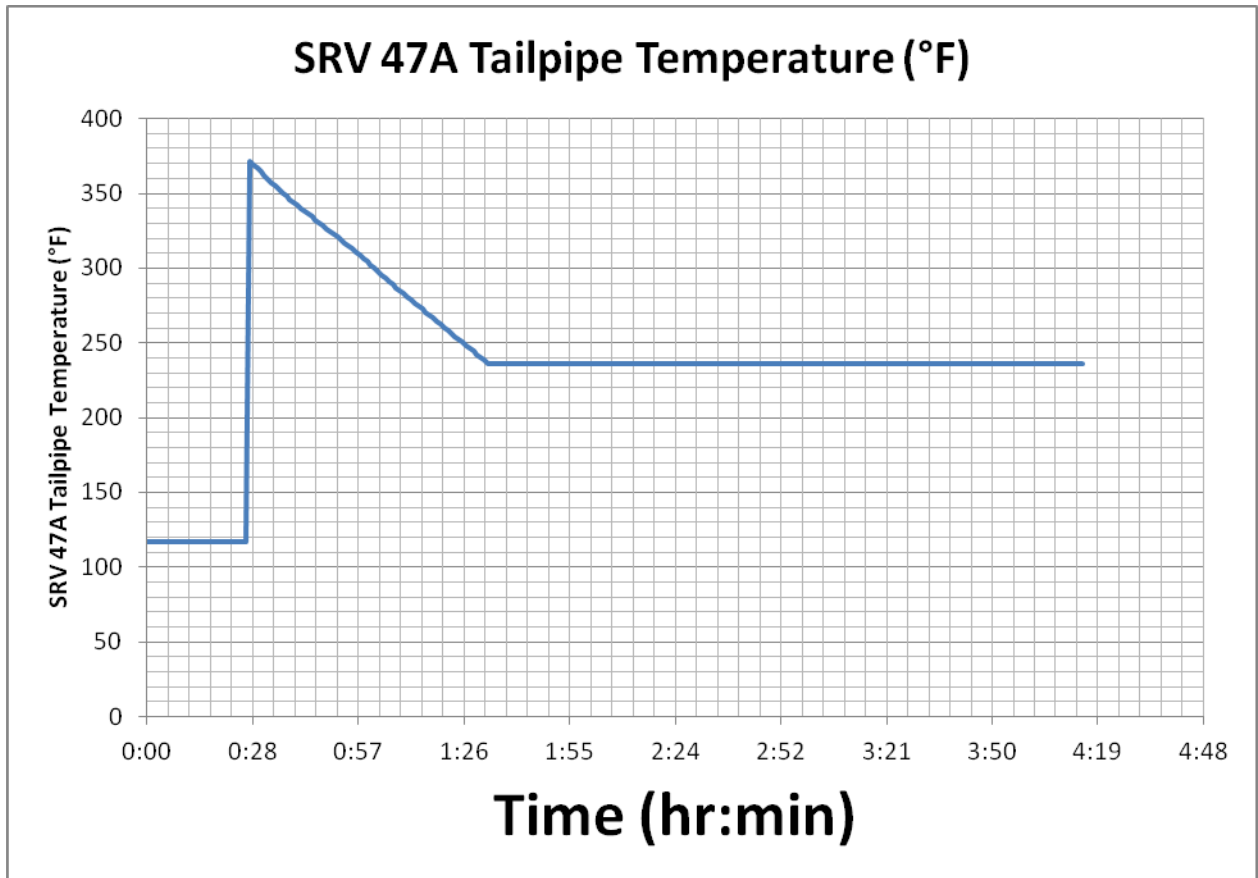
- SRV B21-F047A tailpipe temperature graph
- Pre-test and Post-test screen shots of PPC screens 6D-04 (IRM/APRM indications), D05AD1 (SPDS Summary Display), and DD5BD3 (SPDS RPV, Pri-Cnmt, and Hydrogen Display)

The CRS has marked block 310 of CPS 3831.01D002 Actuation Log NA.

The CRS has directed you to complete CPS 3831.01 Safety Relief Valve Report for 1B21-F047A.

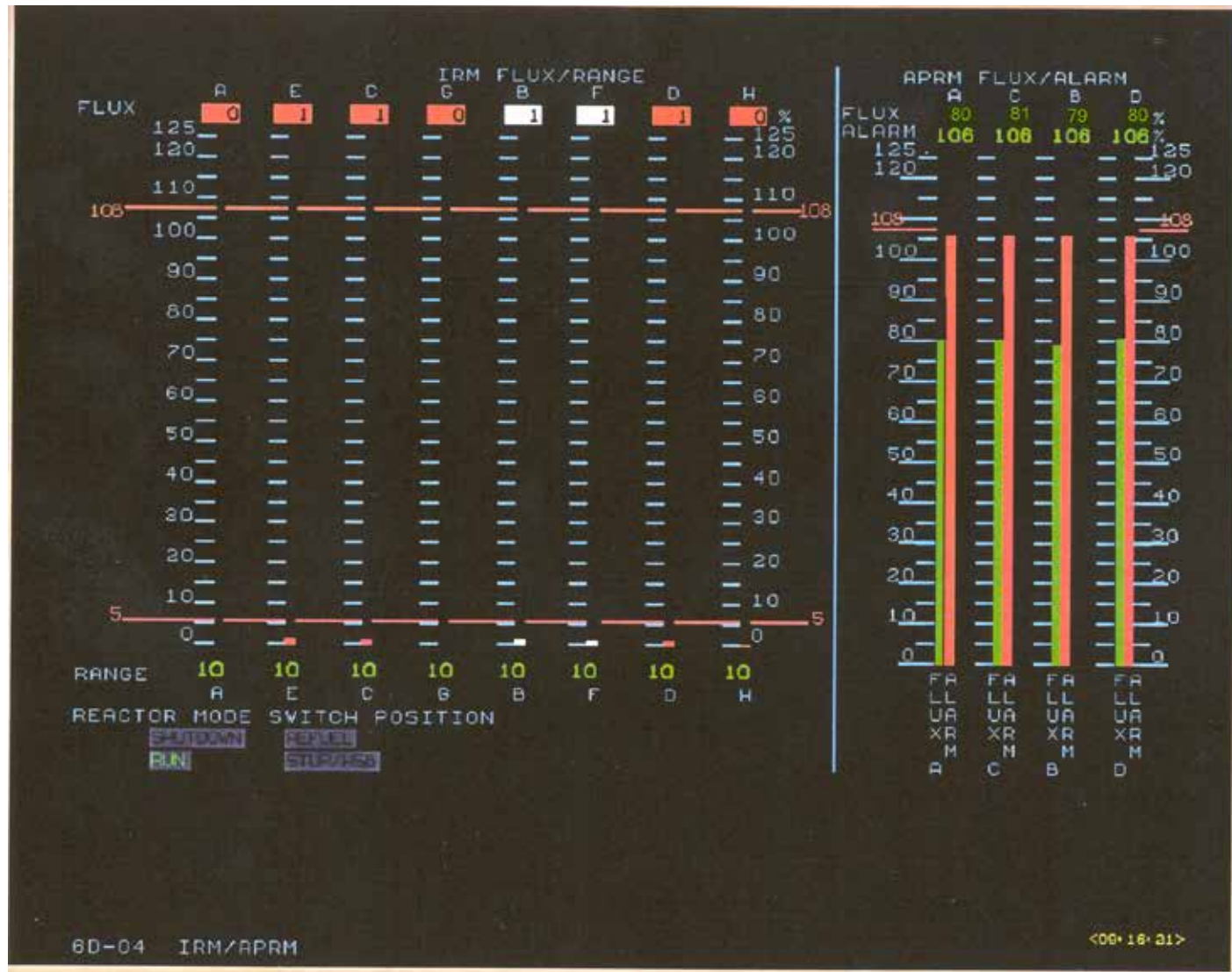
**Clinton Power Station
Job Performance Measure (JPM)**

Attachments



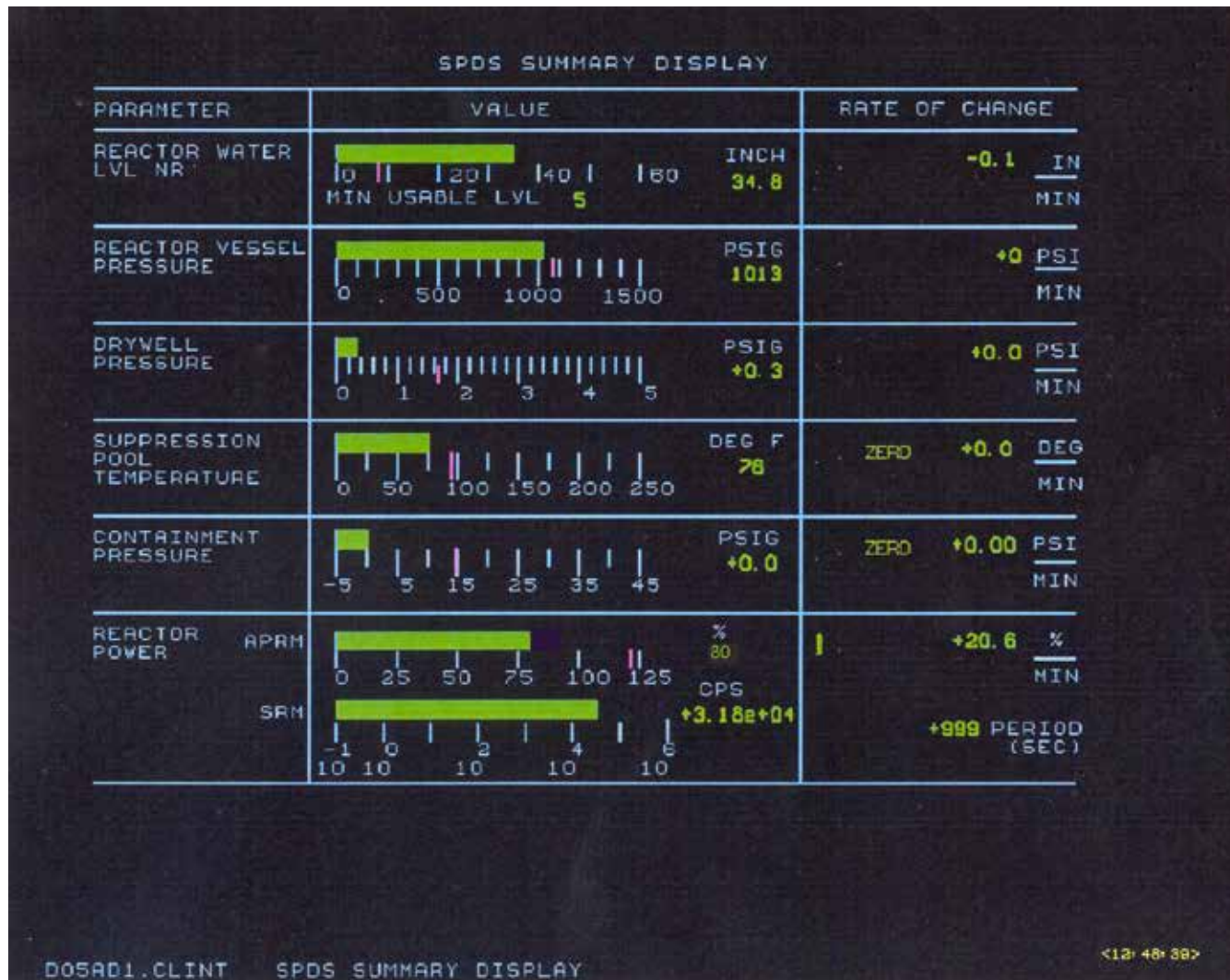
B21-F047A Tailpipe Temperature Graph

Clinton Power Station Job Performance Measure (JPM)



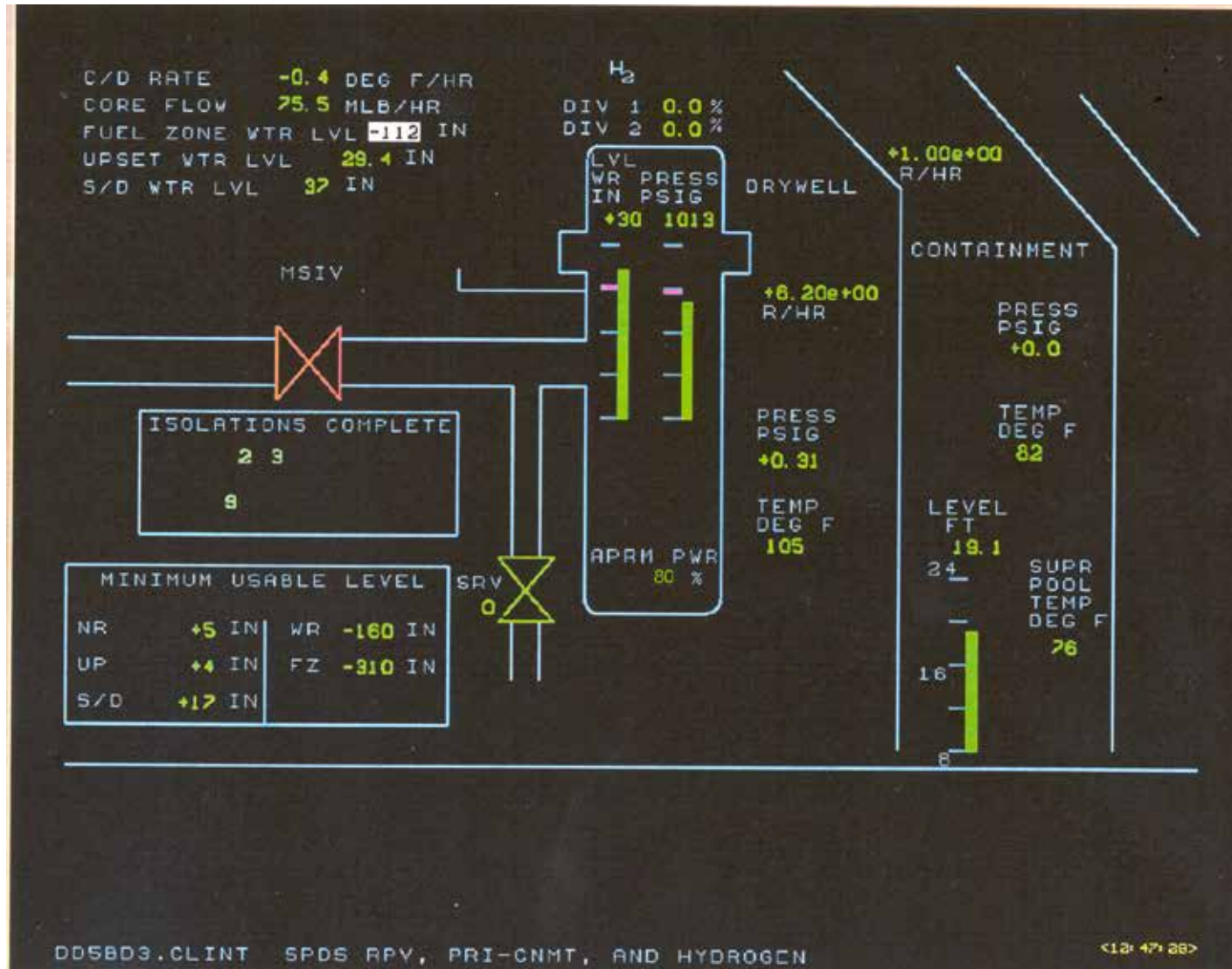
Pre and Post Test

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



Pre and Post Test

Clinton Power Station Job Performance Measure (JPM)



Pre and Post Test

CLINTON POWER STATION

Job Performance Measure

Evaluate License Maintenance Requirements

JPM Number: JPM484

Revision Number: 00

Date: 8/25/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/25/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>Tony Jennings</u> Training Department	<u>11/15/16</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 OP-AA-105-102 Rev: 11
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)

Revision	Date	Description
00	8/25/16	New JPM.

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

Simulator Setup Instructions

1. No simulator setup is required for this 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:

- The examinee correctly documents shifts worked during the quarter on OP-AA-105-102 Attachment 1 Active License Tracking Log and determines that 2 additional 8 hour or 12 hour RO watches are needed to maintain his/her license active past 12/31/16.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- OP-AA-105-102 NRC ACTIVE LICENSE MAINTENANCE Rev. 11

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 a blank copy of OP-AA-105-102 Attachment 1 Active License Tracking Log.

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

INITIAL CONDITIONS:

You are a Reactor Operator with an active NRC license.

Today is 12/23/16.

You are currently assigned to relieve the “A” RO on 1/2/17.

During the current quarter (4th quarter of 2016) you worked a mixed shift schedule consisting of the following:

- You stood three complete 12-hour day shift watches as the “A” RO on October 12th, 13th, and 14th.
- You stood two 8-hour swing shift watches as the “B” RO on October 23rd and 24th.
- You split 8-hour day shifts working 4 hours as the “B” RO and the remaining 4 hours as a clearance writer on October 1st, 2nd, 8th, 9th, 15th, 16th, 22nd, 27th, 29th, and 30th.
- You split two 12-hour midnight shifts, working six hours as the “A” RO and the other six hours as a clearance writer during the outage on November 10th and 11th.
- The remaining days in the 4th quarter of 2016 were spent as a clearance writer (Monday through Friday).
- All shifts covered were entered in the Narrative log.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § Do NOT shine any type light into a panel.

You are to document your shift coverage for the 4th quarter of 2016 on OP-AA-105-102 Attachment 1 Active License Tracking Log, and determine your ability to assume shift for 1/2/17.

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 BOLDED 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

OP-AA-105-102 NRC ACTIVE LICENSE MAINTENANCE

JPM Step 1 Record shift coverage from 4th quarter of 2016.

Standard: Examinee records the dates, shifts, length of shift, position filled, and signs attachment 1 using information from the initial conditions per the key (next page).

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

Clinton Power Station
Job Performance Measure (JPM)

KEY

Attachment 1
Active License Tracking Log
Page 1 of 1

Employee Number: 012345 (example)SHIFT COVERAGE FOR THE 4th (1ST, 2ND, 3RD, 4TH) CALENDAR QUARTER OF 2016 (YEAR)Examinee's NameACTIVE INACTIVE

Name of License Holder (Print)

License Status At Start
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) at sites having a mixed shift schedule (enter appropriate shift designator), and watches shall not be truncated when the minimum quarterly requirement (56 hours) is satisfied. (NUREG 1021, Revision 9)

	DATE	SHIFT	LENGTH	UNIT	POSITION (circle one)				SM LOG	SIGNATURE OF LICENSE HOLDER
ONE	10/12/16	D (or 2)	12	1	FHS	SM	US	<input checked="" type="radio"/> RO	Logged <input checked="" type="radio"/> Y / N	Examinee Signature
TWO	10/13/16	D (or 2)	12	1	FHS	SM	US	<input checked="" type="radio"/> RO	Logged <input checked="" type="radio"/> Y / N	Examinee Signature
THREE	10/14/16	D (or 2)	12	1	FHS	SM	US	<input checked="" type="radio"/> RO	Logged <input checked="" type="radio"/> Y / N	Examinee Signature
FOUR	10/23/16	3	8	1	FHS	SM	US	<input checked="" type="radio"/> RO	Logged <input checked="" type="radio"/> Y / N	Examinee Signature
FIVE	10/24/16	3	8	1	FHS	SM	US	<input checked="" type="radio"/> RO	Logged <input checked="" type="radio"/> Y / N	Examinee Signature
SIX*					FHS	SM	US	RO	Logged Y / N	
SEVEN*					FHS	SM	US	RO	Logged Y / N	

_____/_____
Operations Support Manager Date

KEY

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

***JPM Step 2 Reviews requirements to maintain an active license.**

Standard: Examinee determines that he/she does NOT have the minimum number of hours required to maintain their license in an active status past 12/31/16.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***JPM Step 3 Reviews requirements to maintain an active license.**

Standard: Examinee determines that he/she is NOT eligible to stand watch on 1/2/17.

Cue: When the examinee has determined that they will not be eligible to assume the watch on 1/2/17, ask him/her what additional requirements they will need to be able to stand the watch on 1/2/17.

Comments

SAT £ UNSAT £ Comment Number _____

***JPM Step 4 Reviews requirements to maintain their license active past 12/31/16.**

Standard: Examinee determines that a minimum of one more complete eight hour or twelve hour watch is needed to maintain their license active past 12/31/16.

Cue: When the student has completed OP-AA-105-102 Attachment 1 Active License Tracking Log and determined eligibility to stand watch on 1/2/17 state that the JPM is complete.

Comments

SAT £ UNSAT £ Comment Number _____

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

TERMINATING CUES:

The JPM is complete when the student has completed OP-AA-105-102 Attachment 1 Active License Tracking Log and determined eligibility to stand watch on 1/2/17.

STOP TIME: _____

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

INITIAL CONDITIONS:

You are a Reactor Operator with an active NRC license.

Today is 12/23/16.

You are currently assigned to relieve the “A” RO on 1/2/17.

During the current quarter (4th quarter of 2016) you worked a mixed shift schedule consisting of the following:

- You stood three complete 12-hour day shift watches as the “A” RO on October 12th, 13th, and 14th.
- You stood two 8-hour swing shift watches as the “B” RO on October 23rd and 24th.
- You split 8-hour day shifts working 4 hours as the “B” RO and the remaining 4 hours as a clearance writer on October 1st, 2nd, 8th, 9th, 15th, 16th, 22nd, 27th, 29th, and 30th.
- You split two 12-hour midnight shifts, working six hours as the “A” RO and the other six hours as a clearance writer during the outage on November 10th and 11th.
- The remaining days in the 4th quarter of 2016 were spent as a clearance writer (Monday through Friday).
- All shifts covered were entered in the Narrative log.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § Do NOT shine any type light into a panel.

You are to document your shift coverage for the 4th quarter of 2016 on OP-AA-105-102 Attachment 1 Active License Tracking Log, and determine your ability to assume shift for 1/2/17.

CLINTON POWER STATION

Job Performance Measure

**Print Reading – Determine Isolation Boundaries and Depressurize
1B21-F022A Accumulator**

JPM Number: JPM526

Revision Number: 01

Date: 8/26/16

Developed By:	T. Jennings Instructor	8/26/16 Date
Validated By:	Michael Antonelli SME or Instructor	10/26/16 Date
Reviewed By:	Jim Lucas Operations Representative	11/15/16 Date
Approved By:	T. Jennings Training Department	11/15/16 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 _____ Rev: _____
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ 9. Verify cues both verbal and visual are free of conflict.
- _____ 10. Verify performance time is accurate
- _____ 11. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ 12. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

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

Revision Record (Summary)

Revision	Date	Description
00	6/16/14	New JPM.
01	8/26/16	Corrected typographical error on page 5 and added revision numbers to the procedure references used for the JPM.

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

Simulator Setup Instructions

1. This is a RO Admin JPM and requires no simulator setup.

**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:

- The examinee determines isolation boundaries and depressurizes 1B21A001A Inboard MSIV 1B21-F022A accumulator using station mechanical drawings.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- M10-9002-5 Rev. D
- M05-1040-14 Rev. AB

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- Administer this JPM in a location with access to station drawings and a computer (if requested).

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

INITIAL CONDITIONS:

The station is in a refueling outage.

All Inboard and Outboard Main Steam Line Isolation Valve hand switches are in the CLOSED position.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

You are an extra RO.

The CRS has requested that you determine which valves are required to:

- 1) isolate air to accumulator 1B21-A001A (1B21-F022A Inbd MSIV Air Accumulator), and
- 2) depressurize accumulator 1B21-A001A

Report to the CRS after completing the task.

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 **BOLDED** 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

M10-9002-5

***1 Determines that accumulator 1B21-A001A is located on print M10-9002-5.**

Standard: The examinee can determine the correct print by using one of the following methods:

- Passport equipment search
- ESOMs equipment database
- M05-1000 P&ID Index

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***2 Determines that opening V3 (1B21-F083A) will depressurize accumulator 1B21-A001A.**

Standard: Examinee determines that V3 is the accumulator drain and uses the table at the top of M10-9002-5 to determine that V3 for 1B21-A001A is 1B21-F083A.

Cue:

Comments Steps 2 – 4 can be performed in any order.

SAT £ UNSAT £ Comment Number _____

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

- 3 Determines that opening V2 (1IA092A) will depressurize the air supply header upstream of accumulator 1B21-A001A.

Standard: Examinee determines that V2 is a drain that taps off of the IA supply line to 1B21-A001A upstream of check valve 1B21-F024A and determines that opening the valve will depressurize the IA supply line (but not the accumulator).

Cue:

Comments This is an optional step added in the event that the examinee determines that opening 1IA092A is appropriate in depressurizing the IA supply header upstream of check valve 1B21-F024A.

It is NOT a competency hit if the examinee includes or excludes 1IA092A in his/her answer. It would be a failure of a critical step, however, if the examinee determines that solely opening 1IA092A will depressurize accumulator 1B21-A001A and does not include 1B21-F083A in his/her answer.

SAT £ UNSAT £ Comment Number _____

- *4 Determines that closing 1IA077A will isolate instrument air to accumulator 1B21-A001A.**

Standard: Examinee determines that the IA supply line to accumulator 1B21-A001A is located on M05-1040 Sheet 14, and then determines that 1IA077A is the isolation valve for line 1IA80AA ½.

Cue:

Comments Steps 2 – 4 can be performed in any order.

SAT £ UNSAT £ Comment Number _____

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

- 3 Determines that closing 1IA078A will depressurize the actuator air supply header for 1B21-F022A.

Standard: Examinee determines that 1IA078A is the actuator air supply isolation valve supplying air to the actuator solenoids for 1B21-F022A.

Cue:

Comments This is an optional step added in the event that the examinee determines that closing 1IA078A is needed to isolate all air sources from 1B21-A001A.

With the MSIV control switch in the CLOSE position (provided in the initiating cue), actuator air via 1IA078A is isolated from 1B21-A001A by the 'A' and 'B' operating solenoids. It is NOT a competency hit if the examinee includes or excludes 1IA078A in his/her answer. It would be a failure of a critical step however, if the examinee determines that solely closing 1IA078A will isolate air to accumulator 1B21-A001A and does not include 1IA077A in his/her answer.

SAT £ UNSAT £ Comment Number _____

TERMINATING CUES:

The examinee has identified the IA isolation and drain valve for accumulator 1B21A001A using station mechanical drawings.

STOP TIME: _____

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

INITIAL CONDITIONS:

The station is in a refueling outage.

All Inboard and Outboard Main Steam Line Isolation Valve hand switches are in the CLOSED position.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

You are an extra RO.

The CRS has requested that you determine which valves are required to:

- 1) isolate air to accumulator 1B21-A001A (1B21-F022A Inbd MSIV Air Accumulator), and
- 2) depressurize accumulator 1B21-A001A

Report to the CRS after completing the task.

CLINTON POWER STATION

Job Performance Measure

Use CPS RP On-Line To Determine Radiological Requirements

JPM Number: JPM532

Revision Number: 01

Date: 8/29/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/29/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 RP-AA-210 Rev: 26
 Procedure RP-AA-376 Rev: 9
 Procedure RP-AA-403 Rev: 8
 Procedure RP-AA-460 Rev: 28
- _____ 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)

Revision	Date	Description
00	10/7/14	New JPM.
01	8/29/16	Updated procedure revisions and made editorial changes throughout.

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

Simulator Setup Instructions

1. There are no simulator setup instructions for this 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:

- Given a specific location in a Radiological Controlled Area (RCA), demonstrate the ability to obtain survey data and determine highest dose rate.
- Given a Radiological Work Permit (RWP), determine the RWP requirements for entering a specific location in an RCA.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- RP-AA-210, Rev. 26 DOSIMETRY ISSUE, USAGE, AND CONTROL
- RP-AA-376, REV. 9 RADIOLOGICAL POSTINGS, LABELING, AND MARKINGS
- RP-AA-403, Rev. 8 ADMINISTRATION OF THE RADIATION WORK PERMIT PROGRAM
- RP-AA-460, Rev. 28 CONTROLS FOR HIGH AND LOCKED HIGH RADIATION AREAS

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- This JPM can be performed in a classroom or other suitable setting that has access to a computer with LAN access. **CPS RP On-Line Main Screen will be displayed.**
- This JPM contains 2 attachments (RWP and Survey Map) in addition to the Initial Conditions and Initiating Cue page (last) page of the JPM. Do NOT provide the examinee with these attachments until prompted to do so.
- Provide the examinee with a copy of the Initial Conditions and Initiating Cue page (back page of the JPM) when providing the initiating cue.

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

INITIAL CONDITIONS:

It is 12/3/16.

The plant is operating at rated thermal power.

Annunciator 5130-6E O.G. Analyzer A Trouble Chk Status Lights has just been received on the 'A' OG Hydrogen Analyzer at 1H13-P845 Off Gas Control Panel.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

Retrieve and review the latest periodic survey data for the 'A' OG Hydrogen Analyzer using CPS RP On-Line in preparation for entering the 'A' OG Hydrogen Analyzer room to investigate the trouble alarm.

Determine requirements for entry and dose levels.

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 **BOLDED** 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

RP-AA-403 Administration of the Radiation Work Permit Program

RP-AA-460 Controls for High and Locked High Radiation Areas

RP-AA-1008 Unescorted Access To And Conduct In Radiologically Controlled Areas

- *1** **Examinee retrieves the latest periodic survey data for the ‘A’ OG Hydrogen Analyzer using the CPS RP On-Line computer program.**

Standard: Examinee clicks on the box labeled Turbine Building.

Examinee clicks on the box labeled 800’.

Examinee clicks the link for the latest periodic “Pre-Treatment A/E PRM” survey (in the “Survey” column).

- | | |
|------|---|
| Cue: | <ol style="list-style-type: none"> 1. When the examinee has retrieved the survey sheet in CPS RP On-Line, provide the examinee with Attachment 2 – Survey Map and then close the CPS RP On-Line program. 2. Ask the examinee to determine the highest dose rate in the walking path to the OG Hydrogen Analyzers. |
|------|---|

Comments	When the examinee clicks the link for the latest “Pre-Treatment A/E PRM” survey, a PDF document of the survey sheet for the room will open.
----------	---

SAT £ UNSAT £ Comment Number _____

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

***2 Examinee determines the highest dose rate in the walking path to the 'A' OG Hydrogen Analyzer Room.**

Standard: Identifies the intended location on the map and determines the highest dose rate in the walking path to the 'A' OG Hydrogen Analyzer is 2.2 mr/hr.

Cue: Ask the examinee to identify the location of the highest dose rate in the TB 805' EL. Pre-Treatment A/E PRM Room.

Comments The contamination levels in the room are all less than 1,000 dpm/100cm²; no contaminated area posting is required.

SAT £ UNSAT £ Comment Number _____

***3 Examinee determines the location of the area containing the highest dose rate in the TB 805' EL. Pre-Treatment A/E PRM Room.**

Standard: Examinee reviews the survey map and determines the highest dose rate is on a component in the HRA area by the A/E PRM (annotated by *1500/260).

Cue: Ask the examinee to identify the RWP requirements for entering the area with the highest dose rate.

Comments

SAT £ UNSAT £ Comment Number _____

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

***4 Examinee determines the RWP requirements for entering the HRA area.**

Standard: Examinee determines that entry into the HRA area requires a specific HRA briefing.

Cue: JPM is complete.

Comments

SAT £

UNSAT £

Comment Number _____

TERMINATING CUES:

The examinee has demonstrated the proper method to enter a specific location in a Radiological Controlled Area (RCA).

STOP TIME: _____

FOR TRAINING USE ONLY

Operator's Name: _____

Job Title: £ EO £ RO £ SRO £ STA £ SRO Cert

JPM Title: Use CPS RP On-Line To Determine Radiological Requirements

JPM Number: JPM532 Revision Number: 00

Task Number and Title: 102405.01 Apply the administrative requirements of ALARA program

K/A System	K/A Number	Importance (RO/SRO)	
Generic	2.3.7	3.5	3.6
Ability to comply with radiation work permit requirements during normal or abnormal conditions.			

Suggested Testing Environment: Classroom/Simulator

Actual Testing Environment: £ Simulator £ Plant £ Control Room

Testing Method:	<input type="checkbox"/> Simulate	Alternate Path:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Time Critical: £ Yes ¢ No

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

References:

- RP-AA-210, Rev. 26 Dosimetry Issue, Usage, and Control
- RP-AA-376, Rev. 9 Radiological Postings, Labeling, and Markings
- RP-AA-403, Rev. 8 Administration of the Radiation Work Permit Program
- RP-AA-460, Rev. 28 Controls For High and Locked High Radiation Areas

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: _____

FOR TRAINING USE ONLY

Attachment 1 – Radiation Work Permit (RWP)

Clinton Power Station

Radiation Work Permit

RWP#: 10010001

Rev: 0

Worker Information

RWP Description: 2016 Operations Department Generic

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

RWP Dose Approval:	25 mrem
ED Dose Alarm:	20 mrem
Dose Rate Alarm:	200 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 Area access: A specific HRA briefing is required to enter.

No LHRA access permitted on this RWP.

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 setpoints 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.

NO work to be done in pools of water on this RWP, ie 755 Fuel/828&737 CT and suppression pool.

Stop Work Limits:

1. GA dose rates \geq 200 mR/hr
2. GA contamination levels \geq 100K dpm/100cm²
3. Airborne radioactivity \geq 0.3 DAC

Protective Clothing Requirements

Protective Clothing (\leq 100,000 dpm/100 cm²)

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

Protective Clothing ($<$ 10,000 dpm/100 cm²)
RP APPROVAL REQUIRED

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

Company modesty garments shall be worn under PC's.

FOR TRAINING USE ONLY

Attachment 1 (cont'd) – Radiation Work Permit (RWP)

Clinton Power Station

Radiation Work Permit

Radiation Protection Information

RWP#: 10010001

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

RP Supervisor	ALARA Review By
Prepared By J. Smith 1/1/2015	Terminated By
Job Supervisor	

INITIAL CONDITIONS:

It is 12/3/16.

The plant is operating at rated thermal power.

Annunciator 5130-6E O.G. Analyzer A Trouble Chk Status Lights has just been received on the 'A' OG Hydrogen Analyzer at 1H13-P845 Off Gas Control Panel.

INITIATING CUE:**CAUTION**

§ All pre-job briefings are completed.

Retrieve and review the latest survey data for the 'A' OG Hydrogen Analyzer using CPS RP On-Line in preparation for entering the 'A' OG Hydrogen Analyzer room to investigate the trouble alarm.

Determine requirements for entry and dose levels.

CLINTON POWER STATION

Job Performance Measure

Review Surveillance 9820.01 Power Distribution Limits

JPM Number: JPM425

Revision Number: 02

Date: 8/23/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/23/16</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 9820.01 Rev: 34
Procedure CPS 9820.01D001 Rev: 32e
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)

Revision	Date	Description
00	7/26/10	New JPM number and updated revisions (10110001SAF01)
01	06/14/13	Converted to new template
02	8/23/16	Updated procedure references.

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

Simulator Setup Instructions

1. This JPM can be performed in a classroom or other secure area with the 3D cases generated per step 2.
2. The following can be used as necessary to recreate the 3D Case printouts with out of spec MFLCPR and MFLPD:
 - a. Initialize to a full power IC.
 - b. Insert Malfunction M3D_FLCPR_V_10 to a final value of 1.012 to raise MFLCPR for fuel assembly 21-18 to a value greater than 1.0.
 - c. Insert Malfunction M3D_FLPD_V_2 to a final value of 1.083 to raise MFLPD for fuel assembly 23-32 to a value greater than 1.0.
 - d. Print out a 3D case.
 - e. Verify MFLCPR and MFLPD are > 1.0.
3. Freeze Simulator.
4. Markup a copy of 9820.01D001 Power Distribution Limits Data Sheet to match the attached example.
5. Attach the 3D Monicore Case to the copy of 9820.01D001.

**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:

- The CRS review finds the two mistakes on the datasheet showing all thermal limits are in specification which is in conflict with the 3D Monicore Case showing a bundle with a MFLCPR and MFLPD of greater than one.
- CPS No. 9820.01 Power Distribution Limits, Revision 34.
- CPS No. 9820.01D001 Power Distribution Limits Data Sheet, Revision 32e.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 9820.01 Power Distribution Limits, Revision 34.
- CPS No. 9820.01D001 Power Distribution Limits Data Sheet, Revision 32e.
- Technical Specifications 3.2.2 Amendment 192
- Technical Specifications 3.2.3 Amendment 192

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- Provide the examinee with a copy of the Initial Conditions and Initiating Cue page (back page of the JPM) when providing the initiating cue.
- When the initiating cue is read, provide the student with the marked up copy of 9820.01D001 with the attached 3D Monicore Printout.
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

The unit is at full power. A rod shuffle was completed one hour ago. The B RO has just completed 9820.01 Power Distribution Limits surveillance.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § Do NOT shine any type light into a panel.

1. You are the CRS. Review the completed surveillance data sheet, CPS No. 9820.01D001, Power Distribution Limits Data Sheet.
2. Take any required actions.

The evaluator will act as all other crew members.

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 **BOLDED** 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

9820.01D001 Power Distribution Limits Data Sheet

- *JPM Step 1** **The examinee reviews the completed datasheet and notes that step 8.3 was**
8.3 **incorrectly marked indicating MFLCPR was less than 0.98 when the 3D**
 Monicore case shows a bundle with MFLCPR is greater than 1.00.

Standard: CRS determines that the data sheet was not correctly filled out and MFLCPR is out of specification.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

9820.01D001 Power Distribution Limits Data Sheet

- *JPM Step 2** **The examinee reviews the completed datasheet and notes that step 8.4 was**
8.4 **incorrectly marked indicating MFLPD was less than 0.98 when the 3D**
 Monicore case shows a bundle with MFLPD is greater than 1.00.

Standard: CRS determines that the data sheet was not correctly filled out and MFLPD is out of specification.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

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

***JPM Step 3 Technical Specifications – Minimum Critical Power Ratio (MCPR)**
3.2.2

Standard: **The examinee reviews Technical Specifications and enters Action 3.2.2 A.1 – Restore MCPR to within limits within 2 hours.**

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***JPM Step 4 Technical Specifications – Linear Heat Generation Rate (LHGR)**
3.2.3

Standard: **The examinee reviews Technical Specifications and enters Action 3.2.3 A.1 – Restore LHGR to within limits within 2 hours.**

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

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

JPM Step 5 Examinee contacts RE for instructions to restore MFLCPR and MFLPD to within limits within 2 hours.

Standard: Examinee contacts the RE for instructions.

Cue: If the examinee consults with the RE, tell him/her that the RE's are determining an appropriate course of action to restore MFLCPR and MFLPD to within limits.

Comments If the examinee requires a new 3D case, cue him/her that values are identical to the case used for the surveillance.

SAT £ UNSAT £ Comment Number _____

JPM Step 6 Examinee notifies the Shift Manager that MFLCPR and MFLPD are outside Technical Specification Limits.

Standard: Examinee notifies the Shift Manager that the ITS limits for MCPR and LHGR have been exceeded and that ITS LCO 3.2.2 A.1 and 3.2.3 A.1 have been entered.

Cue: Acknowledge report from the examinee.

Comments

SAT £ UNSAT £ Comment Number _____

TERMINATING CUES:

The JPM is complete when the student has determined that the MFLCPR and MFLPD limit has been exceeded and determines the appropriate Technical Specification actions that are required.

STOP TIME: _____

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

INITIAL CONDITIONS:

The unit is at full power. A rod shuffle was completed one hour ago. The B RO has just completed 9820.01 Power Distribution Limits surveillance.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § Do NOT shine any type light into a panel.

1. You are the CRS. Review the completed surveillance data sheet, CPS No. 9820.01D001, Power Distribution Limits Data Sheet.
2. Take any required actions.

The evaluator will act as all other crew members.

CLINTON POWER STATION

Job Performance Measure

Evaluation of Work Hours IAW 10CFR26

JPM Number: JPM483

Revision Number: 00

Date: 8/24/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/24/16</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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)

Revision	Date	Description
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 BOLDED 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>	SAT	UNSAT	Comment Number
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.	*5.1.1 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. <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)**

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
7	Reviews Week 6 of the proposed schedule.	<p>*5.1.1</p> <p>Determines that the scheduled hours <u>will</u> violate the following 10CFR26 work hour limits:</p> <ul style="list-style-type: none"> · 16 in 24 (0700 on Friday until 0700 on Saturday = 20 hours in a 24 hour period), or · 26 in 48 (0700 on Thursday until 0700 on Saturday = 28 hours in a 48 hour period), or · 10 hour break between successive work periods (the transition from training on Friday to night shift on Saturday is 4 hours) <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 Cert

JPM Title: Evaluation of Work Hours IAW 10CFR26

JPM Number: JPM483 Revision Number: 00

Task 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:	<input type="checkbox"/> Simulate	Alternate Path:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input type="checkbox"/> 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

CLINTON POWER STATION

Job Performance Measure

Tech Spec Call / Clearance Approval

JPM Number: JPM469

Revision Number: 01

Date: 7/8/16

Developed By:	<u>T. Jennings</u> Instructor	<u>7/8/16</u> Date
Validated By:	<u>Brian Glynn</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 OP-AA-109-101 Rev: 12
 Procedure CPS 3309.01E001 Rev: 8
 Procedure CPS 3309.01V001 Rev: 11b
 Procedure M05-1074 SH001 Rev: AH
 Procedure E02-1HP99 SH110 Rev: H
 Procedure E02-1HP99 SH505 Rev: N
- _____ 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)

Revision	Date	Description
00	6/15/15	New JPM.
01	7/8/16	Updated procedure references.

**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:

- Candidate reviews the Technical Specifications and determines the correct Technical Specification Action requirement(s).
- Candidate reviews the Clearance Order Checklist and determines:
 - that compartment/circuit breaker AB MCC 1C COMPT 2C (1E22-S002/2C) for HPCS Water Leg Pump 1E22-C003 must be added to the Clearance Order Checklist.
 - that EIN 1E22F356 is incorrect for the HPCS WTR LEG PUMP TEST LINE ISOL and that the correct EIN for the HPCS WTR LEG PUMP TEST LINE ISOL is 1E22F351.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- OP-AA-109-101, Rev 12 CLEARANCE AND TAGGING
- CPS 3309.01E001, Rev 008, HIGH PRESSURE CORE SPRAY ELECTRICAL LINEUP
- CPS 3309.01V001, Rev 011 B, HIGH PRESSURE CORE SPRAY VALVE LINEUP
- M05-1074 Sheet 001, Rev AH HIGH PRESSURE CORE SPRAY (HP)
- E02-1HP99 Sheet 110, Rev H HPCS Power Supply System
- E02-1HP99 Sheet 505, Rev N HPCS WATER LEG PUMP (1E22-C003) AND (DIV 3)

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- After providing the initiating cue, provide the examinee with a copy of:
 - Clearance Order Checklist
 - OP-AA-109-101, Rev 12 CLEARANCE AND TAGGING
- Allow candidate access to the remaining PROCEDURAL/REFERENCES listed above.

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

INITIAL CONDITIONS:

- The plant is operating at rated power.
- The High Pressure Core Spray (HPCS) Water Leg Pump was secured due to a report of a leak.
- HPCS Pump Breaker control power fuses were removed IAW CPS 3309.01 HIGH PRESSURE CORE SPRAY (HPCS).
- A Clearance Order Checklist has been prepared to isolate the HPCS Water Leg Pump leak and facilitate repairs.

INITIATING CUE:

As CRS you are tasked to:

- Provide an independent Tech Spec call based on the conditions above.
- Review the prepared Clearance Order Checklist for approval (Passport is NOT available).

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 BOLDED 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

Technical Specifications

- *1. The candidate reviews the Technical Specifications and determines the correct Technical Specification Action requirement.**

Standard: Determines the required action is TS 3.5.1 Action B.1 and B.2.

Cue:

Comments

SAT £

UNSAT £

Comment Number _____

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

Clearance Order Checklist**OP-AA-109-101, Rev 12 Clearance And Tagging****HPCS Water Leg Pump Drawing (E02-1HP99 Sheet 505) or equivalent**

- *2. The candidate reviews the Clearance Order Checklist and determines that the electrical isolation of the HPCS Water Leg Pump is incomplete. The HPCS Water Leg Pump Breaker must be added to the Clearance Order Checklist.**

Standard: Determines that compartment/circuit breaker AB MCC 1C COMPT 2C (1E22-S002/2C) for HPCS Water Leg Pump 1E22-C003 must be added to the Clearance Order Checklist.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

Clearance Order Checklist**High Pressure Core Spray (HP) Drawing (M05-1074 Sheet 001)**

- *3. The candidate reviews the Clearance Order Checklist and determines that the Equipment Identification Number (EIN) listed for the HPCS WTR LEG PUMP TEST LINE ISOL is incorrect.**

Standard: Determines that EIN 1E22F356 is incorrect for the HPCS WTR LEG PUMP TEST LINE ISOL and that the correct EIN for the HPCS WTR LEG PUMP TEST LINE ISOL is 1E22F351.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

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

4. Task Completion

Standard: Review is complete.

Cue: JPM is complete.

Comments

SAT £

UNSAT £

Comment Number _____

STOP TIME: _____

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

INITIAL CONDITIONS:

- The plant is operated at rated power.
- The High Pressure Core Spray (HPCS) Water Leg Pump was secured due to a report of a leak.
- HPCS Pump Breaker control power fuses were removed IAW CPS 3309.01 HIGH PRESSURE CORE SPRAY (HPCS).
- A Clearance Order Checklist has been prepared to isolate the HPCS Water Leg Pump leak and facilitate repairs.

INITIATING CUE:

As CRS you are tasked to:

- Provide an independent Tech Spec call based on the conditions above.
- Review the prepared Clearance Order Checklist for approval (Passport is NOT available).

CLINTON POWER STATION

Job Performance Measure

Review CPS 9038.70 Radiation
Monitoring Source Check Surveillance

JPM Number: JPM536

Revision Number: 01

Date: 8/23/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/23/16</u> Date
Validated By:	<u>Brian Glynn</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CY-CL-170-301 Rev: 25
 Procedure CPS 9038.70 Rev: 3e
 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)

Revision	Date	Description
00	10/9/14	New JPM.
01	8/23/16	Updated procedure references.

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

Simulator Setup Instructions

1. No simulator setup is required for this JPM.
2. This JPM should be conducted in a location that provides easy access to the required reference procedures (simulator, library, SM office, etc.).
3. The following procedures are required to be available should the candidate request them:
 - a. CY-CL-170-301 Offsite Dose Calculation Manual – Clinton Power Station

**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:

- ODCM Requirements for 1RIX-PR034 OG Pre-Treatment PRM and 1RIX-PR035/41 OG Post-Treatment PRMs identified.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CY-CL-170-301 Clinton Power Station Unit 1 Offsite Dose Calculation Manual (ODCM) Rev. 25
- CPS 9038.70 Radiation Monitoring Source Check Surveillance Rev. 3e

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

The plant is operating at 97% power.

NO LCOs are in effect.

1RIX-PR041 Off Gas Post-Treatment Monitor is currently NON-FUNCTIONAL for maintenance.

The OG Vault Refrigeration (VO) System has been shut down for repairs. The repairs have just been completed, and the VO system is being prepared for startup. The OG Charcoal Beds are in BYPASS to support VO system startup IAW CPS 3407.01 Off-Gas Vault Refrigeration (VO) step 4.1.

CPS 9038.70 Radiation Monitoring Source Check Surveillance has just been completed for the gaseous radiation monitors, OG Pre-treatment process radiation monitor, and the OG Post-Treatment process radiation monitors.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

As an on-shift SRO, perform the supervisory review of CPS 9038.70 Radiation Monitoring Source Check Surveillance.

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 BOLDED 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

CY-CL-170-301 Clinton Power Station Unit 1 Offsite Dose Calculation Manual

- 1 Examinee reviews section 5.0 Prerequisites of CPS 9038.70 Radiation Monitoring Source Check Surveillance.

Standard: Examinee reviews section 5.0 and determines section is filled out correctly.

Cue: Provide the examinee with the completed copy of CPS 9038.70 and attached data sheets for this step.

Comments

SAT £

UNSAT £

Comment Number _____

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

***2 Examinee evaluates surveillance data for 1RIX-PR034 Off-Gas Pre-treatment PRM.**

- Standard: Examinee reviews surveillance data for 1RIX-PR034 and determines the following:
- Monitor failed to reach the required value of 1.5 times the current cpm value during the surveillance.
 - 1RIX-PR034 is NON-FUNCTIONAL per ODCM 3.2.1.
 - 1RIX-PR034 is required to be FUNCTIONAL during operation of the main condenser air ejector(s) per ODCM 3.2.1.1 Applicability.
 - The following ODCM 3.2.1 Required Actions must be taken:
 - A.1, C.1, C.2.1.1, and C.2.1.2, OR
 - A.1, C.1, C.2.2.1, C2.2.2, and C2.2.3 (requires that the OG Charcoal Beds must immediately be placed in service)

Cue: If the examinee reports the failure, acknowledge the report and direct the examinee to complete the task.

 If the examinee attempts to check the calculations on the data sheets, inform the examinee that the calculations have already been verified and to assume the calculations are correct.

Comments The examinee may perform review steps in any order.

 Per the initiating cue, the OG Charcoal Beds are bypassed to support startup of the OG Vault Refrigeration System.

SAT £ UNSAT £ Comment Number _____

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

***3 Examinee evaluates surveillance data for 1RIX-PR035 Off-gas Post-treatment PRM #1.**

- Standard: Examinee reviews surveillance data for 1RIX-PR035 and determines the following:
- Monitor failed to reach 30 cpm and 1.5 times the current cpm value when the source check was performed.
 - 1RIX-PR035 is NON-FUNCTIONAL per ODCM 3.2.1.
 - 1RIX-PR035 or 1RIX-PR041 is required to be FUNCTIONAL during operation of the main condenser air ejector(s) per ODCM 3.2.1 Applicability.
 - With 1RIX-PR041 already NON-FUNCTIONAL for maintenance, the following ODCM Required Actions must be taken:
 - A.1, D.1, and D.2.1, OR
 - A.1, D.1, D.2.2.1, and D.2.2.2

Cue: If the examinee reports the failure, acknowledge the report and direct the examinee to complete the task.

 If the examinee attempts to check the calculations on the data sheets, inform the examinee that the calculations have already been verified and to assume the calculations are correct.

Comments The examinee may perform review steps in any order.

SAT £ UNSAT £ Comment Number _____

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

- 4 Examinee evaluates surveillance data for the remainder of the Gaseous Monitors in the surveillance.

Standard: Examinee reviews surveillance data for each of the remaining gaseous radiation monitors and determines the following:

- Each monitor passed channel functional testing with the exception of 0RIX-PR002 HVAC Exhaust PRM #2 Iodine channel.
- 0RIX-PR002 HVAC Exhaust PRM #2 Iodine Sampler is required to be FUNCTIONAL at all times, and that the non-ODCM failure does not impact functionality.

Cue: If the examinee reports the failure, acknowledge the report and direct the examinee to complete the task.

If asked, 0RIX-PR001 is in service.

If the examinee attempts to check the calculations on the data sheets, inform the examinee that the calculations have already been verified and to assume the calculations are correct.

Comments The examinee may perform review steps in any order.

SAT £

UNSAT £

Comment Number _____

TERMINATING CUES:

CPS 9038.70 Radiation Monitoring Source Check Surveillance has been reviewed and ODCM impact has been evaluated and appropriate actions taken.

STOP TIME: _____

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

INITIAL CONDITIONS:

The plant is operating at 97% power.

NO LCOs are in effect.

1RIX-PR041 Off Gas Post-Treatment Monitor is currently NON-FUNCTIONAL for maintenance.

The OG Vault Refrigeration (VO) System has been shut down for repairs. The repairs have just been completed, and the VO system is being prepared for startup. The OG Charcoal Beds are in BYPASS to support VO system startup IAW CPS 3407.01 Off-Gas Vault Refrigeration (VO) step 4.1.

CPS 9038.70 Radiation Monitoring Source Check Surveillance has just been completed for the gaseous radiation monitors, OG Pre-treatment process radiation monitor, and the OG Post-Treatment process radiation monitors.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

As an on-shift SRO, perform the supervisory review of CPS 9038.70 Radiation Monitoring Source Check Surveillance.

CLINTON POWER STATION

Job Performance Measure

Determine Protective Action Recommendations

JPM Number: JPM482

Revision Number: 00

Date: 08/24/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/24/16</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 EP-AA-111 Rev: 19
 Procedure EP-AA-1003 Addendum 3 Rev: 1
 Procedure EP-AA-111-F-07 Rev: G
 Procedure EP-AA-112-100-F-01 Rev: V
- _____ 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)

Revision	Date	Description
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 classifies the event, and determines appropriate PARs (evacuate Sub Area 1) within the required time frame.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- EP-AA-111, Emergency Classification and Protective Action Recommendations, Rev 19
- EP-AA-1003 Addendum 3, Emergency Action Levels For Clinton Station, Rev 1
- EP-AA-111-F-07, Clinton PAR Flowchart, Rev G
- EP-AA-112-100-F-01 Shift Emergency Director Checklist, Rev. V

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:
 - Shift Emergency Director Binder
 - EP-AA-1003, Addendum 3 EALs
 - EP-AA-1003, Addendum 3 Bases

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

INITIAL CONDITIONS:

You are the Shift Manager.

The plant was operating at rated thermal power when a transient occurred.

Plant conditions are as follows:

- Reactor Water level is –177 inches and lowering with no injection sources available.
- Radiation levels in the containment are 37 R/hr.
- Hydrogen concentration in the drywell is 9.2%.
- No release is in progress.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § No equipment or controls will be manipulated during this evaluation, only Simulated Actions will occur.
- § Do NOT shine any type light into a panel.

This JPM is time critical.

You are to determine if any Emergency Action Levels have been exceeded.

Evaluator: Log START TIME as soon as the Initiating Cue is read and acknowledged by the examinee.

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 **BOLDED** 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

EP-AA-1003 Radiological Emergency Plan Annex For Clinton Station

***JPM Step 1 Examinee determines that a Site Area Emergency EAL has been exceeded due to FS1 Loss or Potential Loss of ANY two barriers.**

Standard: Examinee reviews EP-AA-1003 Hot Matrix and determines that FS1 threshold has been exceeded due to:

- Potential Loss of Fuel Clad because RPV level cannot be restored and maintained > -162 inches (TAF).
- Loss of Reactor Coolant System because Containment Radiation Monitor is reading > 33 R/hr and RPV level cannot be restored and maintained > -162 inches (TAF).
- Potential Loss of Containment because Drywell hydrogen concentration \geq 9%

Cue: Acknowledge report from the examinee.

Comments 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 START TIME.

Record Time EAL Declared _____

Record Start Time (from Page 5) _____

NOT longer than 15 minutes between the time EAL Declared and Start Time:

YES / NO

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

SAT £ UNSAT £ Comment Number _____

JPM Step 2 Evaluator provides an additional cue.

Standard: Examinee acknowledges the additional information provided by the evaluator.

Cue: After the EAL call has been made, cue the examinee as follows:

- Hydrogen concentration in the Drywell is now 10.2%.
- Radiation level in the containment is now 103 R/hr.
- No release is in progress.

Determine if any Emergency Action Levels have been exceeded.

Comments Evaluator Note: A 15-minute clock to declare the EAL starts as soon as the initiating cue in JPM step 2 is read and acknowledged via 3-part communication by the examinee.

Record Start Time _____

SAT £ UNSAT £ Comment Number _____

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

***JPM Step 3 Examinee determines that a General Emergency EAL has been exceeded due to FG1 Loss of ANY two barriers AND Loss or Potential Loss of third barrier.**

Standard: Examinee reviews EP-AA-1003 Hot Matrix and determines that FG1 threshold has been exceeded due to:

- Loss of Fuel Clad because Containment Radiation Monitor is reading > 41.3 R/hr.
- Loss of Reactor Coolant System because Containment Radiation Monitor is reading > 33 R/hr and RPV level cannot be restored and maintained > - 162 inches (TAF).
- Potential Loss of Containment because Containment Radiation Monitor is reading > 97 R/hr and DW Hydrogen concentration is $\geq 9\%$.

Cue: Acknowledge report from the examinee. Ask examinee to determine what (if any) Protective Action Recommendations (PARs) are required.

Comments 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 START TIME.

Record Time EAL Declared _____

Record Start Time (from JPM Step 2) _____

NOT longer than 15 minutes between the time EAL Declared and Start Time:

YES / NO

SAT £ UNSAT £ Comment Number _____

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

***JPM Step 4 Examinee determines the protective action recommendation is to Evacuate Sub Area 1 for a 2 mile radius and 10 miles downwind.**

Standard: Examinee reviews EP-AA-111-F-07 Clinton PAR Flowchart and determines that a Rapidly Progressing Severe Accident is not in progress (primary containment has not be lost), requiring evacuation of Sub Area 1.

Cue: When requested, cue the examinee that wind direction is 159°.

Comments

SAT £ UNSAT £ Comment Number _____

TERMINATING CUES:

EAL thresholds evaluated and Protective Action Recommendations determined.

STOP TIME: _____

Task Number and Title: 997777.02, Determine a Protective Action Recommendation

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

INITIAL CONDITIONS:

You are the Shift Manager.

The plant was operating at rated thermal power when a transient occurred.

Plant conditions are as follows:

- Reactor Water level is –177 inches and lowering with no injection sources available.
- Radiation levels in the containment are 37 R/hr.
- Hydrogen concentration in the drywell is 9.2%.
- No release is in progress.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § No equipment or controls will be manipulated during this evaluation, only Simulated Actions will occur.
- § Do NOT shine any type light into a panel.

This JPM is time critical.

You are to determine if any Emergency Action Levels have been exceeded.

CLINTON POWER STATION

Job Performance Measure

Transfer RR Pumps from Fast to Slow Speed

JPM Number: JPM448

Revision Number: 02

Date: 9/14/16

Developed By:	<u>Tony Jennings</u> Instructor	<u>9/14/16</u> Date
Validated By:	<u>Brian Glynn</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 3302.01 Rev: 35f
 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)

Revision	Date	Description
00	2/23/11	Modified from JPM 215. Removed alternate path.
01	11/27/12	Updated procedure references.
02	8/29/16	Updated procedure references. Converted to new template. Made editorial changes throughout. Added new instructions for setting up the IC.

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

Simulator Setup Instructions

1. IC Setup
 - a. Reset the simulator to IC-7 or equivalent with power $\geq 33\%$.
 - b. Lower RR flow (if necessary) until reactor power is $\sim 33\%$.
 - c. Perform CPS 3006.01 Unit Shutdown steps 8.2.1 – 8.2.4.
 - d. Ensure plant is stable and then save to a different IC if JPM is being used more than once. IC-228 (pw: 76319) is saved for the ILT 15-1 NRC Exam.
2. JPM Setup
 - a. Reset the simulator to the IC saved in 1.d above with power $\sim 33\%$.
 - b. Open and execute Simulator Lesson Plan ILT 15-1 NRC Exam JPMs/JPM448 containing the following:
 - 1) RR_FBYPSA to Bypass on Remote1
 - 2) RR_FBYPSB to Bypass on Remote2
 - 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. This completes the setup for this 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 has successfully performed steps for transferring Reactor Recirculation Pumps to Slow Speed.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS 3302.01, Rev 35f Reactor Recirculation (RR)

EVALUATOR INSTRUCTIONS:

- 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 a copy of CPS 3302.01, Reactor Recirculation (RR) and applicable REMA with the cue sheet.
- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

A plant shutdown is in progress with power at approximately 33% of rated thermal power. One TDRFP is in operation with level control on the Master Level Controller (MLC).

INITIATING CUE:

As the Reactor Operator you are directed to transfer the Reactor Recirculation Pumps to Slow Speed per CPS 3302.01 Reactor Recirculation (RR) and the REMA.

Annunciators associated with Reactor Recirculation Pump transfer are to be considered “Expected Annunciators” and treated as such.

The Field Operator is available via PCS phone. RP has been notified.

The ‘B’ RO will respond to all back-panel annunciators.

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 **BOLDED** 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.

CPS 3302.01, REACTOR RECIRCULATION

- *8.1.3.1 1. Start both LFMG's:**
- **Close LFMG A Bkr 1A for RR pump 1A.**
 - **Close LFMG B Bkr 1B for RR pump 1B**

Standard: Examinee depresses the "CLOSE" pushbutton for LFMG A Mtr Bkr 1A and LFMG B Mtr Bkr 1B (red light is on and the green light is off for both breakers).

Cue: As CRS respond to 'A' RO report of start of the LFMGs. If candidate requests condition of LFMG's from the field, report "both LFMG's are operating normally".

Comments The field cue will be performed by the Simulator Booth Operator (Field Operator) if candidate uses PCS phone to contact the Field Operator.

SAT £ UNSAT £ Comment Number _____

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

8.1.3.2 (Local) At 1B33-P001A and B, LFMG Aux Relay Panel, place following keylock switches to BYPASS:

A pump: ° S126A, Power Interlock (Both on FB 781' East)
 ° S127A, Total Feedwater Low Flow Interlock

B pump: ° S126B, Power Interlock (Both on FB 781' West)
 ° S127B, Total Feedwater Low Flow Interlock

Standard: Examinee requests area operator to place S126A&B and S127A&B in BYPASS at panels 1B33-P001A and 1B33-P001B.

Cue: Insert **REMOTE 1 and REMOTE 2** and inform the examinee that S126A&B and S127A&B are in BYPASS.

Comments The cue will be performed by the Simulator Booth Operator (Field Operator) if candidate uses PCS phone to contact the Field Operator.

SAT £ UNSAT £ Comment Number _____

8.1.3.3 Make the following RR pump transfer notifications:
1) Notify RP of potential change in Rad levels.
2) Make a plant wide Gaitronics announcement that the RR pumps will be transferred to slow.

Standard: Simulates calling RP to notify them of potential rad level changes.
Simulates making Gaitronics announcement, "Transferring RR Pumps to Slow Speed".

Cue: Respond as RP acknowledging notification of changing rad levels.

Comments Part of initiating cue. Candidate should recognize condition met. Only respond if needed.

SAT £ UNSAT £ Comment Number _____

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

***8.1.3.4 Place both 1B33-F060A & B, Recirc FCVs at ~ 10%, but not > 10% position.**

Standard: Examinee positions both FCV slide levers (one at a time) to the left until both 1B33-F060A & B, Recirc FCVs are at ~ 10% (but not > 10%) position.

Cue:

Comments Alarms 5006-3D OPRM Enabled, 5004-3D & 5005-3D TCV/TSV Trip Bypassed, and 5006-3H Low Power Alarm Point are expected alarms.

SAT £ UNSAT £ Comment Number _____

***8.1.3.5 Transfer the RR pumps to the LFMG by depressing both TRANSFER TO LFMG A and B push-buttons simultaneously.**

Standard: Examinee simultaneously depresses both RECIRC PUMP A & B DRIVE MOTOR BKR 5A & 5B TRANS TO LFMG A and B push-buttons.

Cue: As CRS respond to 'A' RO report of RR Pump transfer to slow speed.

Comments

SAT £ UNSAT £ Comment Number _____

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

8.1.3.6 Observe that the 5A and 5B breakers open and when pump speed decreases, the 2A and 2B breakers close.

Standard: Examinee observes that the 5A and 5B breakers open (red light off, green light on) and when pump speed decreases the 2A and 2B breakers close (red light on, green light off).

Cue: State that the JPM is complete

Comments

SAT £

UNSAT £

Comment Number _____

TERMINATING CUES:

RR Pumps A and B have been shifted to slow speed.

STOP TIME: _____

Clinton Power Station
Job Performance Measure (JPM)

Operator's Name: _____

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

JPM Title: Transfer RR Pumps from Fast to Slow Speed

JPM Number: JPM448

Revision Number: 02

Task Number and Title: 330201.24 RR Pump Transfer To Slow Speed

K/A System	K/A Number	Importance (RO/SRO)	
202001	A4.01	3.7	3.7
Ability to manually operate and/or monitor in the control room: Recirculation pumps.			

Suggested Testing Environment: Simulator

Actual Testing Environment: ☒ Simulator ☐ Plant ☐ Control Room

Testing Method: ☐ Simulate
 ☒ Perform

Alternate Path: ☐ Yes ☒ No

SRO Only: ☐ Yes ☒ No

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 20 minutes

Actual Time Used: _____ minutes

References:

- CPS No. 3302.01, Rev 35f REACTOR RECIRCULATION (RR)

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:

A plant shutdown is in progress with power at approximately 33% of rated thermal power. One TDRFP is in operation with level control on the Master Level Controller (MLC).

INITIATING CUE:

As the Reactor Operator you are directed to transfer the Reactor Recirculation Pumps to Slow Speed per CPS 3302.01 Reactor Recirculation (RR) and the REMA.

Annunciators associated with Reactor Recirculation Pump transfer are to be considered "Expected Annunciators" and treated as such.

The Field Operator is available via PCS phone. RP has been notified.

The 'B' RO will respond to all back-panel annunciators.

CLINTON POWER STATION

Job Performance Measure

Turbine Driven Reactor Feed Pump (TDRFP) 'B' Startup (Alternate Path)

JPM Number: JPM530

Revision Number: 01

Date: 9/16/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/16/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/25/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 3103.01 Rev: 31
 Procedure CPS 5002.02 Rev: 29e
 Procedure CPS 5002.03 Rev: 28b
- _____ 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)

Revision	Date	Description
00	7/25/14	New JPM.
01	9/16/16	Updated procedure references.

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

Simulator Setup Instructions

1. IC Setup
 - a. Initialize to any suitable IC (comparable with IC-26) with TDRFP 'A' on the MLC in auto and the TDRFP 'B' in rolling standby.
 - b. Save to a different IC if JPM is being used more than once. IC-**225** is saved for the ILT 15-1 NRC Exam (password 76319).
2. JPM Setup
 - a. Reset the simulator to the IC saved in step 1 above.
 - b. Open and execute Simulator Lesson Plan ILT 15-1 NRC Exam JPMs.
 - c. Release JPM530 which will perform the following:
 - Disable TDRFP 'B' trips from 1H13-P680.
 - Insert vibration alarms and indications when TDRFP 'B' speed is increased above 2800 rpm.
 - Insert seat leakage into the HPSV & HPCV (9% & 2% respectively)
 - a. MS0ASLVALVE41 9%
 - b. MS0ASLVALVE40 2%
3. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
4. This completes the setup for this JPM.
5. Freeze Simulator.

**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:

- Mitigating actions have been taken for high vibrations on the 'B' TDRFP and the RFP has been secured.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 3103.01, Rev 31 Feedwater (FW)
- CPS No. 5002.02, Rev 29e Alarm Panel 5002 Annunciators – Row 2
- CPS No. 5002.03, Rev 28b Alarm Panel 5002 Annunciators – Row 3

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 a marked up copy of CPS 3103.01 Feedwater (FW) with section 8.1.4.2 TDRFP NORMAL Startup to Rolling STANDBY marked complete.

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

INITIAL CONDITIONS:

A reactor startup / power ascension is in progress.

Reactor power is ~ 50%.

Turbine Driven Reactor Feed Pump (TDRFP) 'A' is operating on the Master Level Controller (MLC) in auto feeding the RPV.

TDRFP 'B' is in rolling standby IAW CPS 3103.01 Feedwater (FW) section 8.1.4.2 TDRFP NORMAL Startup to Rolling STANDBY.

5 Condensate Polishers (A – E) are in service.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS has directed you to place TDRFP 'B' in service feeding the RPV using the 'AUTO' method IAW CPS 3103.01 Feedwater (FW) section 8.1.4.4. Transfer rolling STANDBY TDRFP to feeding RPV through 1FW002A (B).

Permission has been granted to perform all critical steps required to perform the task.

Report to the CRS after completing the task.

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 BOLDED 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

CPS 3103.01 Feedwater (FW) section 8.1.4.4 Transfer rolling STANDBY TDRFP to feeding RPV through 1FW002A (B)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*8.1.4.4	Transfer rolling STANDBY TDRFP B to feeding RPV through 1FW002B.	8.1.4.4.1 Examinee determines TDRFP 'B' is in rolling standby per the initiating cue.			
		8.1.4.4.2 Examinee determines that 5 Condensate Polishers are adequate to perform the evolution. <i>Cue: 5 Condensate Polishers are in service.</i>			
		8.1.4.4.3 Examinee observes Red 'M' on the Digital Feedwater Display for 1FW010B and the 1FW010B valve icon is red.			
		8.1.4.4.4 Examinee clicks on: <ul style="list-style-type: none"> • FPB • TDRFP B (and observes the blue outline on the control box) • ↓ (and observes TDRFP B RPM decreasing to ~ 2370 rpm) • Exit 			
		*8.1.4.4.5 Examinee clicks on: <ul style="list-style-type: none"> • Valve icon for 1FW002B • TDRFP Main Discharge Valve 1FW002B (and observes the blue outline on the control box) • Open (and then verifies indication changes to 'Intermediate' and then 'Full Open') • Exit 			

Clinton Power Station
Job Performance Measure (JPM)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*8.1.4.4 (cont.)	Transfer rolling STANDBY TDRFP B to feeding RPV through 1FW002B	*8.1.4.4.6 Examinee clicks on: <ul style="list-style-type: none"> · Valve icon for 1FW010B · 1FW010B Min Flow (and observes the blue outline on the control box) · Close · Exit Note: 1FW010B will not physically close with TDRFP 'B' reset and 1FW002B full open. If the examinee depresses the 1FW010B close pushbutton before 1FW002B is full open, 1FW010B will close. If this happens, the error should be considered a failure of a critical step.			
<p style="text-align: center;"><u>NOTE</u> Step 8.1.4.4.7 is N/A.</p>					
*8.1.4.4 (cont.)		*8.1.4.4.8 Examinee observes that TDRFP 'B' indicates 'FPB Speed Setter'. Examinee clicks on: <ul style="list-style-type: none"> · FPB Speed Setter · TDRFP B Speed Setpoint Mode (and observes the blue outline on the control box) · Bring Pump On-Line (and then verifies TDRFP 'B' speed increasing) · Exit 			

Clinton Power Station
Job Performance Measure (JPM)

ALTERNATE PATH BEGINS

Annunciator 5002-2F High Vibr RFP 1B Shaft will be received when TDRFP 'B' speed increases above 2800 rpm.
Annunciator 5002-3F High Vibr RFPT 1B Shaft will be received 30 seconds later.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8.1.4.4.8 5002-2F 5002-3F	Reduce Turbine Speed to clear vibration alarms (fails)	8.1.4.4.8.c Examinee clicks on: <ul style="list-style-type: none"> · FPB Speed Setter · TDRFP B Speed Setpoint Mode (and observes the blue outline on the control box) · Speed Setter Mode · Exit 			
		Examinee clicks on: <ul style="list-style-type: none"> · FPB (pump icon) · TDRFP B (and observes the blue outline on the control box) · ↓ until setpoint (SP) indicates 0 RPM (and then observes that TDRFP 'B' speed begins to lower, but stabilizes at ~ 2000 RPM and that annunciators 5002-2F and 3F remain locked in) · Exit <p>Cue: <i>If the examinee requests an Equipment Operator to investigate, acknowledge the order and then cue the examinee, "Vibrations can be felt on the floor of TB 800. I'm leaving due to safety concerns."</i></p>			

Clinton Power Station
Job Performance Measure (JPM)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8.1.10	TDRFP Shutdown	8.1.10.1 Examinee discusses with the CRS the need to lockout the RR FCVs during the TDRFP S/D. <i>Cue: "Do <u>not</u> lockout the RR FCVs".</i> Note: If the examinee elects to trip 'B' TDRFP based on the report from the Equipment Operator, this step is NA.			
		8.1.10.4 Examinee clicks on: <ul style="list-style-type: none"> · FPB Trip/Reset pushbutton · TDRFP B (and observes the blue outline on the control box) · TDRFP B Trip (and then observes that the HP and LP Stop Valves remain full open) · Exit (may or may not perform) Examinee reports failure of the 'B' TDRFP to trip to the CRS.			
*8.3.14	Securing A TDRFP That Will Not Trip From P680	8.3.14.1 On 1H13-P680-5002, the examinee depresses the 'L' pushbutton on the 'B' TDRFP SLIM Controller and verifies the 'L' pushbutton red light illuminates.			
		8.3.14.2 No action required; the SLIM is at 0% output.			
		*8.3.14.3 Examinee locates control switch for 1B21-F303B on 1H13-P870-5016, rotates the control switch counter clockwise to the close position, and then verifies the green light illuminates and the red light extinguishes. Examinee verifies TDRFP 'B' RPM lowering, and that the high vibration annunciators clear. <i>Cue: the JPM is complete.</i>			

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

TERMINATING CUES:

The 'B' TDRFP is secured IAW CPS No. 3103.01 section 8.3.14 Securing A TDRFP That Will Not Trip From P680.

STOP TIME: _____

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

INITIAL CONDITIONS:

A reactor startup / power ascension is in progress.

Reactor power is ~ 50%.

Turbine Driven Reactor Feed Pump (TDRFP) 'A' is operating on the Master Level Controller (MLC) in auto feeding the RPV.

TDRFP 'B' is in rolling standby IAW CPS 3103.01 Feedwater (FW) section 8.1.4.2 TDRFP NORMAL Startup to Rolling STANDBY.

5 Condensate Polishers (A – E) are in service.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS has directed you to place TDRFP 'B' in service feeding the RPV using the 'AUTO' method IAW CPS 3103.01 Feedwater (FW) section 8.1.4.4. Transfer rolling STANDBY TDRFP to feeding RPV through 1FW002A (B).

Permission has been granted to perform all critical steps required to perform the task.

Report to the CRS after completing the task.

CLINTON POWER STATION

Job Performance Measure

Steam Bypass Valve Tests

JPM Number: JPM419

Revision Number: 00

Date: 2/18/15

Developed By:	<u>T. Jennings</u> Instructor	<u>2/18/15</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/25/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 9072.01 Rev: 32e____
 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)

Revision	Date	Description
00	2/18/15	New JPM.

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

Simulator Setup Instructions

1. Reset the simulator to an IC with the Main Turbine On-line.
2. No Simulator Lesson Plan is required for this JPM.
3. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
4. This completes the setup for this JPM.
5. Save to a different IC if JPM is being used more than once. IC-225 is saved for the ILT 15-1 NRC Exam (password 76319).
6. Freeze Simulator.
7. Station a training instructor to monitor Main Turbine Bypass Valve Positions at 1H13-P678 and to initial IV blanks in 9072.01 Table 2: BPV Test Data when requested.

**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:

- The Steam Bypass Valve Tests are complete IAW CPS 9072.01 Steam Bypass Valve Tests.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 9072.01, Rev 32e Steam Bypass Valve Tests

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- This JPM contains cues provided to the examinee from the instructor stationed at 1H13-P678. Review these cues with the instructor to ensure the communications between the instructor and examinee are clear and coordinated.

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

INITIAL CONDITIONS:

The reactor is in Mode 1 at ~ 50% power.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

You are an extra RO. The CRS has directed you to perform CPS 9072.01 Steam Bypass Valve Tests.

CPS 9072.01 Section 5.0 Prerequisites are complete.

The activity has been screened for production risk.

Another operator will monitor BPV positions at 1H13-P678.

Report to the CRS after completing the task.

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 **BOLDED** 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

CPS 9072.01 Steam Bypass Valve Tests

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1	Performs pre-test verifications.	<p>Step 8.2</p> <p>Examinee locates the position meters for Bypass Valves 1-6 on 1H13-P678 and verifies they read 0% and then initials step 8.2 of the surveillance.</p> <p>*Note to evaluator – if the examinee requests the training instructor stationed at P678 to perform the verification, cue the examinee to perform the verifications instead.</p>			
Procedure step 8.3 is NA – step only applies if the plant is shutdown with a low vacuum condition present.					

*2	Aligns system for testing.	<p>Step 8.4</p> <p>Examinee locates <u>and</u> depresses the BPV testing push-button on 1H13-P680-5006, and then verifies the:</p> <ul style="list-style-type: none"> · TESTING light energizes · READY TO SELECT light energizes · OFF light de-energizes <p>Examinee initials blanks for steps 8.4.1, 8.4.2, and 8.4.3.</p>			
----	----------------------------	--	--	--	--

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	Strokes #1 BPV from fully open to fully shut.	<p>8.5.1.3 Examinee depresses <u>and</u> holds the TEST BPV 1 push-button on 1H13-P680-5006 and observes the following:</p> <ol style="list-style-type: none"> 1. Annunciator 5006-5M BYPASS VALVE OPEN CHECK LPSP alarms 2. The #1 BPV fast acting solenoid energizes during the last 5-15% of of travel. 3. The #1 BPV CLOSED light is de-energized. 4. The #1 BPV FULL OPEN light is energized. 5. 1H13-P678 meter indication for #1 BPV indicates ~ 100% and stops moving. <p>Cue – When #1 BPV reaches 100% open, the Training Instructor stationed at 1H13-P678 should cue the examinee that #1 BPV opened quickly the last 10% of opening travel and that the meter stopped moving.</p>			
		<p>8.5.1.4 Examinee releases the TEST BPV 1 push-button on 1H13-P680-5006 and observes the following:</p> <ol style="list-style-type: none"> 1. The #1 BPV FULL OPEN light is de-energized. 2. The #1 BPV OPEN light is de-energized. 3. The #1 BPV CLOSED light is energized. 4. 1H13-P678 meter indication for #1 BPV indicates ~ 0% and stops moving. 5. Annunciator 5006-5M BYPASS VALVE OPEN CHECK LPSP resets <p>Cue – When #1 BPV reaches 0% open, the Training Instructor stationed at 1H13-P678 should cue the examinee that #1 BPV meter is indicating 0% and has stopped moving.</p>			

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

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number															
<div>Evaluators</div> <div><div><div>JPM Step #4 is optional – if desired, cue the examinee to proceed to CPS 9072.01 step 8.6 and perform step 8.6 and remaining steps of the surveillance.</div><div>If performing JPM step #4 on the remaining Bypass Valves, the examinee should allow a 7 minute stabilization period between cycling each BPV (procedure recommendation only).</div></div></div>																				
<div>*4 (optional)</div>	<div>Strokes #2 - 6 BPVs fully open, and then fully shut.</div> <div><table><tr><th colspan="5">Evaluator placekeeping table – check after each BPV is tested.</th></tr><tr><th>BPV #2</th><th>BPV #3</th><th>BPV #4</th><th>BPV #5</th><th>BPV #6</th></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table></div>	Evaluator placekeeping table – check after each BPV is tested.					BPV #2	BPV #3	BPV #4	BPV #5	BPV #6						<div>8.5.2.3 (8.5.3.3, 8.5.4.3, 8.5.5.3, 8.5.6.3) Examinee depresses <u>and</u> holds the TEST BPV 2-6 push-buttons (one at a time) on 1H13-P680-5006 and observes the following:</div> <div><div><div>1. Annunciator 5006-5M BYPASS VALVE OPEN CHECK LPSP alarms for each valve tested.</div><div>2. The respective BPV fast acting solenoid energizes during the last 5-15% of of travel.</div><div>3. The respective BPV CLOSED light is de-energized.</div><div>4. The respective BPV FULL OPEN light is energized.</div><div>5. 1H13-P678 meter indication for the respective BPV indicates ~ 100% and stops moving.</div></div><div>Cue – When respective BPV reaches 100% open, the Training Instructor stationed at 1H13-P678 should cue the examinee that #1 BPV opened quickly the last 10% of opening travel and that the meter stopped moving.</div></div>			
Evaluator placekeeping table – check after each BPV is tested.																				
BPV #2	BPV #3	BPV #4	BPV #5	BPV #6																
		<div>8.5.2.4 (8.5.3.4, 8.5.4.4, 8.5.5.4, 8.5.6.4) Examinee releases the TEST BPV 1 push-button on 1H13-P680-5006 and observes the following:</div> <div><div><div>1. The respective BPV FULL OPEN light is de-energized.</div><div>2. The respective BPV OPEN light is de-energized.</div><div>3. The respective BPV CLOSED light is energized.</div><div>4. 1H13-P678 meter indication for #1 BPV indicates ~ 0% and stops moving.</div><div>5. Annunciator 5006-5M BYPASS VALVE OPEN CHECK LPSP resets</div></div></div>																		

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		Cue – When the respective BPV reaches 0% open, the Training Instructor stationed at 1H13-P678 should cue the examinee that the BPV meter is indicating 0% and has stopped moving.			
*5	Restores system alignment.	<p>8.6 - When all bypass valves have been tested, examinee momentarily depresses the OFF push-button on 1H13-P680-5006, and then verifies the following:</p> <ul style="list-style-type: none"> · TESTING light de-energizes · READY TO SELECT light de-energizes · OFF light energizes <p>8.7 – Notifies the Electrical Supply Dispatcher and the Exelon Power Team of the test completion.</p> <p>Cue – Notify the examinee that the JPM is complete.</p>			

TERMINATING CUES:

The Steam Bypass Valves have been tested IAW CPS 9072.01 Steam Bypass Valve Tests.

STOP TIME: _____

Clinton Power Station Job Performance Measure (JPM)

Operator's Name: _____

Job Title: £ EO £ RO £ SRO £ STA £ SRO Cert

JPM Title: Steam Bypass Valve Tests

JPM Number: JPM419 Revision Number: 00

Task Number and Title: 907201.01 Steam Bypass Valve Tests

K/A System	K/A Number	Importance (RO/SRO)	
241000	A4.06	3.9	3.9
Reactor Turbine Pressure Regulating System – Ability to manually operate and/or monitor in the control room: Bypass valves (operation).			

Suggested Testing Environment: Simulator

Actual Testing Environment: ₤ Simulator ₤ Plant ₤ Control Room

Testing Method:	<input type="checkbox"/> Simulate	Alternate Path:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Time Critical: £ Yes ¢ No

Estimated Time to Complete: 10 minutes* **Actual Time Used:** minutes

*only if JPM step 4 is omitted, otherwise 60 minutes

References: CPS No. 9072.01, Rev 32e Steam Bypass Valve Tests

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 reactor is in Mode 1 at ~ 50% power.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

You are an extra RO. The CRS has directed you to perform CPS 9072.01 Steam Bypass Valve Tests.

CPS 9072.01 Section 5.0 Prerequisites are complete.

The activity has been screened for production risk.

Another operator will monitor BPV positions at 1H13-P678.

Report to the CRS after completing the task.

CLINTON POWER STATION

Job Performance Measure

Perform a HPCS Pump Operability Test
(Alternate Path)

JPM Number: JPM288

Revision Number: 02

Date: 8/29/16

Developed By:	<u>Tony Jennings</u> Instructor	<u>8/29/16</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/25/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 9051.01 Rev: 48
 - Procedure CPS 9051.01D001 Rev: 48
 - Procedure CPS 5062.04 Rev: 27b
- _____ 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)

Revision	Date	Description
0	6/21/12	New JPM
1	8/4/14	Updated procedure references.
2	8/29/16	Updated procedure references.

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

Simulator Setup Instructions

1. IC Setup
 - a. Reset the simulator to any at power IC with HPCS Suction aligned to the RCIC Storage Tank (E22F001 open, E22F015 shut).
 - b. Place the HPCS Out of Service Switch to INOP.
 - c. Place the HPCS Test Prep Switch to TEST.
 - d. Save to a different IC if JPM is being used more than once. IC-225 (pw: 76319) is saved for the ILT 15-1 NRC Exam.
2. Simulator Setup
 - a. Reset the simulator to the IC established in step 1 above.
 - b. Open and execute Simulator Lesson Plan ILT 15-1 NRC Exam JPMs.
 - c. Release JPM288 to cause the following:
 - Energizes 1E22-F010 (completed prerequisite in 9051.01)
 - Fails 1E22-F001 Green light to off and Red light to on
 - Close 1E22-F001 (simulates suction clogging/collapsing) when HPCS flow is approximately greater than 2000 gpm.
 - Fails 1E22-F015 Control Switch to the Close position.
 - d. Verify HPCS “Out of Service” Switch to INOP.
 - e. Verify HPCS Test Prep Switch to TEST.
3. **WHEN IC IS RESET, OVERRIDE SWITCH CHECK FOR A05-A02-A15S23 (if necessary).**

**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:

- HPCS Pump has been tripped due to loss of suction source.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 9051.01, Rev 48 HPCS Pump HPCS Water Leg Pump Operability
- CPS No. 9051.01D001, Rev 48 HPCS Pump HPCS Water Leg Pump Operability Data Sheet
- CPS No. 5062.04, Rev 27b Alarm Panel 5062 Annunciators – Row 4

EVALUATOR INSTRUCTIONS:

- 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 marked up copies of :
 - CPS No. 9051.01, HPCS Pump & HPCS Water Leg Pump Operability - up to and including step 8.2.7.1.
 - CPS No. 9051.01D001, HPCS Pump & HPCS Water Leg Pump Operability Data Sheet - up to and including any data collected up to step 8.2.7.1.
- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

You are the Extra RO assuming the shift.

CPS 9051.01, HPCS Pump & HPCS Water Leg Pump Operability is in progress.

An Equipment Operator is stationed locally at the HPCS Pump and has established communication with the Main Control Room.

INITIATING CUE:

Continue performing CPS 9051.01, HPCS Pump & HPCS Water Leg Pump Operability commencing at step 8.2.7.2.

Inform the CRS when section 8.2 is complete.

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 **BOLDED** 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.

9051.01 HPCS PUMP & HPCS WATER LEG PUMP OPERABILITY

8.2.7.2 Verify HPCS WATER LEG DISCHARGE PRESSURE LOW annunciator 5062-7D is cleared.

Standard: Examinee observes annunciator 5062-7D is clear (not illuminated).

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***8.2.7.3 Start HPCS Pump, 1E22-C001.**

Standard: Examinee places control switch for 1E22-C001 to the 'START' position. Verifies RED light ON, GREEN light OFF. Observes HPCS motor current pegging high and then lowering into the meter green band.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

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

8.2.7.4.1 Observe/perform (Record): Verify 1E22-F012, HPCS Pump Min Flow To Suppr Pool, indicates open.

Standard: Examinee observes RED light ON, GREEN light OFF for 1E22-F012. Records “SAT” on the data sheet for step 8.2.7.4.1 (D001 page 6).

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***8.2.7.4.2 Alternately slowly throttle open both 1E22-F010 and 1E22-F011, HPCS First and Second Test Vlv To Storage Tank, and increase flow to ~ 5050 gpm as read on Comp Pt HP-DA301.**

Standard: Examinee alternately places both control switches for 1E22-F010 and 1E22-F011 to the throttle open position.

Cue: If examinee reports receipt of Annunciator 5062-4D, acknowledge report.

Comments The suction line will start clogging when HPCS flow exceeds approximately 2000 gpm. HPCS Pump amps and flow will rapidly oscillate.

SAT £ UNSAT £ Comment Number _____

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

BEGINS ALTERNATE PATH

5062-4D, HPCS PUMP SUCTION PRESSURE ABNORMAL

NOTE: Steps 1 and 2 may be performed in any order.

1. Verify/establish an available HPCS Suction Path (1E22-F001 preferred unless RCIC Tank/Suction Piping is not available) per CPS 3309.01, High Pressure Core Spray (HPCS). Refer to CPS 3309.01 (HPCS) CLOC PRECAUTION criteria.

Standard: Examinee verifies 1E22-F001 is full open (red light ON, green light OFF).

Cue:

Comments Examinee may elect to trip the HPCS Pump based on abnormal indications without referring to the Annunciator Response Procedure. This is an acceptable action.

SAT £ UNSAT £ Comment Number _____

- *2 If HPCS pump is running for testing, and normal suction pressure was not restored by the previous step, trip the HPCS pump.**

Standard: Examinee trips the HPCS Pump using the associated control switch.

Cue: If an operator is dispatched to investigate, cue the examinee that loud 'surging' noises are coming from the HPCS Pump.

Comments

SAT £ UNSAT £ Comment Number _____

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

 Informs Control Room Supervisor.

Standard: Examinee informs Control Room Supervisor the HPCS was tripped per
 Annunciator Response Procedure.

Cue: Acknowledge the report. State JPM is complete.

Comments

SAT £ UNSAT £ Comment Number _____

TERMINATING CUES:

HPCS Pump has been tripped due to loss of suction source.

STOP TIME: _____

Clinton Power Station Job Performance Measure (JPM)

Operator's Name: _____

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

JPM Title: Perform a HPCS Pump Operability Test (Alternate Path)

JPM Number: JPM288 Revision Number: 02

Task Number and Title: 905101.06 – HPCS Pump & HPCS Water Leg Pump Operability

K/A System	K/A Number	Importance (RO/SRO)	
209002	A4.01	3.7	3.7
Ability to manually operate and/or monitor in the control room: HPCS pump.			

Suggested Testing Environment: Simulator

Actual Testing Environment: ⌚ Simulator ⌚ Plant ⌚ Control Room

Testing Method:	<input type="checkbox"/> Simulate	Alternate Path:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Time Critical: £ Yes ¢ No

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

References:

- CPS No. 9051.01, Rev 47e HPCS Pump HPCS Water Leg Pump Operability
- CPS No. 9051.01D001, Rev 48 HPCS Pump HPCS Water Leg Pump Operability Data Sheet
- *CPS No. 5062.04, Rev 27B Alarm Panel 5062 Annunciators – Row 4

*Procedures with an asterisk do not need to be copied for the JPM administration.

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:

You are the Extra RO assuming the shift.

CPS 9051.01, HPCS Pump & HPCS Water Leg Pump Operability is in progress.

An Equipment Operator is stationed locally at the HPCS Pump and has established communication with the Main Control Room.

INITIATING CUE:

Continue performing CPS 9051.01, HPCS Pump & HPCS Water Leg Pump Operability commencing at step 8.2.7.2.

Inform the CRS when section 8.2 is complete.

CLINTON POWER STATION

Job Performance Measure

Place Feedwater Leakage Control (FWLC) In-Service

JPM Number: JPM473

Revision Number: 00

Date: 9/14/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/14/16</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/26/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 3312.01 Rev: 45b
 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)

Revision	Date	Description
00	9/14/16	New JPM.

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

Simulator Setup Instructions

1. IC Setup
 - a. Reset the simulator 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) YPXMALSE_510 RR03B-RR B SUCTION LINE LEAK (51%)
 - d. Allow ADS to automatically initiate and depressurize the RPV.
 - e. Ensure plant is stable and then save to a different IC if JPM is being used more than once. IC-**227** (pw: 76319) is saved for the ILT 15-1 NRC Exam.
2. JPM Setup
 - a. Reset the simulator to the IC saved in Section 1 above with the reactor shutdown, a LOCA present, and RHR 'A' and 'B' operating in LPCI injection mode.
 - b. No Simulator Lesson Plan is required once the IC has been established.
 - 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. This completes the setup for this JPM.
 - e. Place the simulator in freeze.

**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 has successfully placed the Feedwater Leakage Control System (FWLCS) in service.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS 3312.01, Rev 45b RESIDUAL HEAT REMOVAL (RHR)

EVALUATOR INSTRUCTIONS:

- 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 a copy of CPS 3312.01, RESIDUAL HEAT REMOVAL (RHR) with the cue sheet.
- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

A Loss of Coolant Accident has occurred.

FW/CB/CD injection is no longer available.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

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.

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 **BOLDED** 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

CPS 3312.01, Residual Heat Removal (RHR) Section 8.3.1

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*1	Aligns RHR 'A' and 'B' to the Feedwater Leakage Control (FWLC) System.	8.3.1.1 Examinee determines FW/CB/CD injection is no longer available. <i>Cue: If asked, cue the examinee that FW/CB/CD injection is no longer available.</i> Evaluator – Record current time: _____			
		*8.3.1.2 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.			
		8.3.1.3 Examinee observes that RPV pressure is < 330 psig using PPC or MCR meter indications.			
		8.3.1.4 Examinee observes that RHR Pumps A and B are operating in LPCI mode.			
		*8.3.1.5 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.			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*1 (cont'd)		<p>*8.3.1.6</p> <p>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.</p> <p>Evaluator – Record current time: _____</p> <p>Evaluator – Verify times recorded in step 8.3.1.6 and 8.3.1.1 does <u>not</u> exceed 20 minutes.</p> <p>Cue: <i>State the JPM is complete.</i></p>			

TERMINATING CUES:

RHR 'A' and 'B' are aligned to the Feedwater Leakage Control (FWLC) System.

STOP TIME: _____

Clinton Power Station Job Performance Measure (JPM)

Operator's Name: _____

Job Title: £ EO £ RO £ SRO £ STA £ SRO Cert

JPM Title: Place Feedwater Leakage Control (FWLC) In-Service

JPM Number: JPM473 Revision Number: 00

Task Number and Title: 331201.22 Feedwater Leakage Control System (FWLCS)

K/A System	K/A Number	Importance (RO/SRO)	
223001	A2.01	4.3	4.4
Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of coolant accident			

Suggested Testing Environment: Simulator

Actual Testing Environment: ₤ Simulator ₤ Plant ₤ Control Room

Testing Method:	<input type="checkbox"/> Simulate	Alternate Path:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Time Critical: ☐ Yes ☐ No

Estimated Time to Complete: 10 minutes **Actual Time Used:** minutes

References: CPS 3312.01, Rev 45b RESIDUAL HEAT REMOVAL (RHR)

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:

A Loss of Coolant Accident has occurred.

FW/CB/CD injection is no longer available.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

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.

CLINTON POWER STATION

Job Performance Measure

Re-energize 4160V Bus 1A

JPM Number: JPM503

Revision Number: 01

Date: 9/16/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/16/16</u> Date
Validated By:	<u>Brian Glynn</u> SME or Instructor	<u>10/25/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 4200.01 Rev: 24
 Procedure CPS 3501.01 Rev: 28c
 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)

Revision	Date	Description
00	11/17/12	New JPM.
01	9/16/16	Updated procedure references. Updated to new template.

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

Simulator Setup Instructions

1. IC Setup
 - 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. Save to a different IC if JPM is being used more than once. IC-**226** (IC Password: 76319) is saved for ILT 15-1 NRC Exam. When IC-226 is reset, override switch check for A04_A23_S06 (if necessary).
2. JPM Setup
 - a. Reset the simulator to the IC saved in Section 1 above.
 - b. Open and execute simulator lesson plan ILT 15-1 NRC Exam JPMs.
 - c. Release JPM503 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 Simulator.

**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:

- 4160 Volt Bus 1A is re-energized per CPS 4200.01 Loss of AC Power section 4.3 and CPS 3501.01 High Voltage Auxiliary Power System section 8.1.2 Energizing 4160V Bus 1A, 1AP06E.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 4200.01, Rev 24 Loss Of AC Power
- CPS No. 3501.01, Rev 28c High Voltage Auxiliary Power System

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 copies of CPS 4200.01 Loss of AC Power and CPS 3501.01 High Voltage Auxiliary Power System marked up as follows:
 - CPS 4200.01, section 4.3, all steps complete up to and including step 4.3.3.2.
 - CPS 3501.01 (blank)

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

INITIAL CONDITIONS:

A scram has occurred.

4160V Bus 1A failed to transfer to the reserve source due to a breaker failure.

The breaker failure has been corrected.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

You are the 'B' RO.

The CRS has directed you to re-energize 4160V Bus 1A IAW CPS 4200.01 Loss of AC Power, section 4.3 Loss of Non-ECCS Busses.

In CPS 4200.01 section 4.3, all steps are complete up to and including step 4.3.3.2 (completed by another Reactor Operator). Equipment control switches listed in CPS 4200.01 Appendix A for 4160V Bus 1A have been placed in PULL-TO-LOCK or LOCKED and verified.

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.

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 **BOLDED** 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

CPS 4200.01 Loss of AC Power
CPS 3501.01 High Voltage Auxiliary Power

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*1	Prepares 4160V Bus 1A for re-energization.	*CPS 4200.01 step 4.3.3.3 On 1H13-P870-5012, examinee places the following control switches in PTL: <ul style="list-style-type: none"> · 4160V Bus 1A Mn Bkr 1A 1AP06EK · 4160V Bus 1A Res Bkr 1A 1AP06EM Cue: If asked about the availability of DC control power to 4160V Bus 1A, cue the examinee that DC control power was unaffected by the failure.			
		CPS 4200.01 step 4.3.3.4 Examinee proceeds to CPS 3501.01 High Voltage Auxiliary Power System to re-energize 4160V Bus 1A.			
		CPS 3501.01 step 8.1.2.1 Examinee verifies that 4160V Bus 1A Mn Bkr 1A 1AP06EK and 4160V Bus 1A Res Bkr 1A 1AP06EM are in the Pull-To-Lock position (performed in CPS 4200.01 step 4.3.3.3 above).			
		CPS 3501.01 step 8.1.2.2 On 1H13-P870-5012, examinee opens/verifies open (green light illuminated, red light extinguished) the following breakers: <ul style="list-style-type: none"> · 480V XFMR Q & I BKR, 1AP06EJ · 480V XFMR G & K BKR, 1AP06EQ 			
		CPS 3501.01 steps 8.1.2.3 & 8.1.2.4 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>			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*2	Re-energizes 4160V Bus 1A	*CPS 3501.01 step 8.1.2.5 On 1H13-P870-5012, examinee places 4160V Bus 1A Res Bkr Sync switch to ON.			
		*CPS 3501.01 step 8.1.2.6 On 1H13-P870-5012, examinee places 4160V Bus 1A Res Bkr 1AP06EM in CLOSE (red light illuminated and green light extinguished).			
		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"> · Bus energized red light · 4160 V Bus 1A Voltage Meter on P870 · Annunciator 5012-1D AC Undervoltage 4160V Bus reset. 			
		CPS 3501.01 step 8.1.2.8 On 1H13-P870-5012, examinee places 4160V Bus 1A Res Bkr Sync switch to OFF.			
		CPS 3501.01 step 8.1.2.9 Examinee may place 4160V Bus 1A Mn Bkr, 1AP06EK C/S to AUTO. 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 not be considered a competency hit.			
		CPS 3501.01 step 8.1.2.10 Re-energize 480V Unit Subs No action required by examinee. <i>Cue – State that the JPM is complete.</i>			

TERMINATING CUES:

4160V Bus 1A is re-energized IAW CPS 4200.01 Loss of AC Power and CPS 3501.01 High Voltage Auxiliary Power System.

STOP TIME: _____

Clinton Power Station Job Performance Measure (JPM)

Operator's Name: _____

Job Title: £ EO £ RO £ SRO £ STA £ SRO Cert

JPM Title: Re-energize 4160V Bus 1A

JPM Number: JPM503

Revision Number: 01Task Number and Title: 350101.17 Energize 4160V Bus 1A 1AP06E

K/A System	K/A Number	Importance (RO/SRO)	
295003	AA1.01	3.7	3.8
Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: A.C. electrical distribution system.			

Suggested Testing Environment: Simulator

Actual Testing Environment: ₤ Simulator ₤ Plant ₤ Control Room

Testing Method: £ Simulate
 ¢ Perform

Alternate Path: £ Yes ¢ No

SRO Only: £ Yes ¢ No

Time Critical: Ⓢ Yes Ⓢ No

Estimated Time to Complete: 15 minutes

Actual Time Used: _____ minutes

References:

- CPS 4200.01, Rev 24 Loss of AC Power
- CPS 3501.01, Rev 28c High Voltage Auxiliary Power System

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:

A scram has occurred.

4160V Bus 1A failed to transfer to the reserve source due to a breaker failure.

The breaker failure has been corrected.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

You are the 'B' RO.

The CRS has directed you to re-energize 4160V Bus 1A IAW CPS 4200.01 Loss of AC Power, section 4.3 Loss of Non-ECCS Busses.

In CPS 4200.01 section 4.3, all steps are complete up to and including step 4.3.3.2 (completed by another Reactor Operator). Equipment control switches listed in CPS 4200.01 Appendix A for 4160V Bus 1A have been placed in PULL-TO-LOCK or LOCKED and verified.

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.

CLINTON POWER STATION

Job Performance Measure

Restore ADS Air Supply To Normal Source

JPM Number: JPM427

Revision Number: 02

Date: 8/29/16

Developed By:	<u>T. Jennings</u> Instructor	<u>8/29/16</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/25/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 3101.01 Rev: 23e
 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)

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.

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

Simulator Setup Instructions

Simulator Setup

1. Initialize to any suitable shutdown IC.
2. Place ADS Backup Air Bottles in service with 1IA012A & 13A open, and 1IA012B & 13B shut IAW 3101.01 Steps 8.2.4.1 through 8.2.4.2.
3. Save to a different IC if JPM is being used more than once. **IC-226** (PW 76319) is saved for the ILT 15-1 NRC Exam.

JPM Administration

1. Initialize to IC-226 (PW 76319).
2. Open and execute Simulator Lesson Plan ILT 15-1 NRC Exam JPMs.
3. Release JPM427 which will insert the following instructor overrides and malfunctions:
 - Fail 1PI-IA079 to 125 psig (0.5) on a 2 minute ramp when 1IA013A is shut.
 - Fail 1PI-IA078 to 125 psig (0.5) on a 2 minute ramp when 1IA012A is shut.
 - Delete the 1PI-IA079 (P601) instructor override when 1IA013A is reopened.
 - Delete the 1PI-IA078 (P601) instructor override when 1IA012A is reopened.
 - Bring in Annunciator 5040-6F when either 1PI-IA079 or 1PI-IA078 less than 150 psig (0.6).
 - Clear Annunciator 5040-6F when both 1IA013A and 1IA012A open.
4. Prepare a (blank) administration copy of CPS 3101.01 MAIN STEAM (MS, IS & ADS) for candidate place-keeping.
5. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
6. This completes the setup for this JPM.
7. Freeze Simulator.

**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:

- ADS Backup Air Bottles are on service IAW CPS No. 3101.01 MAIN STEAM (MS, IS & ADS)

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 3101.01, Rev 23e, MAIN STEAM (MS, IS & ADS)

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.

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

INITIAL CONDITIONS:

You are the 'B' RO.

Due to a loss of IA, the ADS backup air bottles were placed in service.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

Instrument Air has been restored.

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

Report to the CRS after completing the task.

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 **BOLDED** 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

CPS No. 3101.01 MAIN STEAM (MS, IS & ADS)

***8.2.4.5.1 Place Control Switches for 1IA012A AND 1IA013A, ADS IA CNMT Outbd Isol Vlv to CLOSE.**

- Standard: At 1H13-P800-5041, examinee:
- locates the control switch for 1IA012A and rotates the switch counter clockwise to the CLOSE position and then verifies the Green light comes ON and the Red light goes OFF.
 - locates the control switch for 1IA013A and rotates the switch counter clockwise to the CLOSE position and then verifies the Green light comes ON and the Red light goes OFF.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

***8.2.4.5.2 Place Control Switches for 1IA012B AND 1IA013B, ADS IA CNMT Inbd Isol Vlv to OPEN.**

- Standard: At 1H13-P800-5041, examinee:
- locates the control switch for 1IA012B and rotates the switch clockwise to the OPEN position and then verifies the Red light comes ON and the Green light goes OFF.
 - locates the control switch for 1IA013B and rotates the switch clockwise to the OPEN position and then verifies the Red light comes ON and the Green light goes OFF.

Cue:

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

Comments

SAT £ UNSAT £ Comment Number _____

8.2.4.5.3 Return Control Switches for 1IA012A **AND** 1IA013A to AUTO.

Standard: At 1H13-P800-5041, examinee:

- Locates the control switch for 1IA012A and rotates the switch clockwise to the AUTO position.
- Locates the control switch for 1IA013A and rotates the switch clockwise to the AUTO position.

Cue:

Comments No valve movement will occur when the 1IA012A and 13A control switches are restored to AUTO.

SAT £ UNSAT £ Comment Number _____

8.2.4.5.4 Verify ADS Air Hdr Pressure on 1H13-P601 (1PI-IA078 / 79) is 160 – 170 psig.

Standard: Locates 1PI-IA078 / 79 on 1H13-P601-5067 and determines air pressure is less than 160 psig.

Cue: If the examinee requests an Equipment Operator to check air amplifier operation, cue him/her that the Containment is not accessible.

Comments

SAT £ UNSAT £ Comment Number _____

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

ALTERNATE PATH BEGINS HERE

Annunciator 5040-6F High/Low Press ADS IA Supply Div 1 or 2.

Alternate Path Step 1 Responds to Annunciator 5040-6F High/Low Press ADS IA Supply Div 1 or 2.

OPERATOR ACTIONS

4. As appropriate, shift to 'ADS Backup Air Bottles' or 'Normal IA'

Standard: Examinee refers to Annunciator Response Procedure 5040-6F and determines that Operator Action 4 applies.

Cue: If the examinee reports receipt of annunciator 5040-6F, acknowledge the report.

Comments

SAT £ UNSAT £ Comment Number _____

CPS No. 3101.01 MAIN STEAM (MS, IS & ADS)

*** Alternate Path Step 2** **Shut 1IA012B, ADS IA CNMT Inbd Isol Vlv. Verify 1IA012A, ADS IA CNMT Outbd Isol Vlv opens.**
***8.2.4.1**

Standard:

- **Examinee locates the control switch for 1IA012B ADS IA CNMT Inbd Isol Vlv on 1H13-P800-5041, rotates the switch counter clockwise and then verifies the Green light comes ON and the Red light goes OFF.**
- Examinee locates the control switch for 1IA012A and verifies the Red light comes ON and the Green light goes OFF.

Cue:

Comments Closing 1IA012B is the only portion of the step that is critical.

SAT £ UNSAT £ Comment Number _____

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

*** Alternate Path Step 3**
8.2.4.2 **Shut 1IA013B, ADS IA CNMT Inbd Isol Vlv. Verify 1IA013A, ADS IA CNMT Outbd Isol Vlv opens.**

- Standard:
- **Examinee locates the control switch for 1IA013B ADS IA CNMT Inbd Isol Vlv on 1H13-P800-5041, rotates the switch counter clockwise and then verifies the Green light comes ON and the Red light goes OFF.**
 - Examinee locates the control switch for 1IA013A and verifies the Red light comes ON and the Green light goes OFF.

Cue:

Comments Closing 1IA013B is the only portion of the step that is critical.

SAT £ UNSAT £ Comment Number _____

JPM Step 8 Verify (1H13-P601, 5067):

8.2.4.3

- ADS Instrument Air Hdr Pressure, 1PI-IA078/79 > 147.5 psig.
- ADS Backup Air Hdr Pressure, 1PI-IA080/81 > 2300 psig.

- Standard:
- Examinee locates 1PI-IA078 / 79 on 1H13-P601-5067 and determines Instrument Air Header Pressure is > 147.5 psig.
 - Examinee locates 1PI-IA080 / 81 on 1H13-P601-5067 and determines Backup Air Header Pressure is > 2300 psig.

Cue: If the examinee reports that the ADS Backup Air Bottles have been placed on service, acknowledge the report.

Comments

SAT £ UNSAT £ Comment Number _____

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

TERMINATING CUES:

ADS Backup Air Bottles have been placed in service IAW CPS No. 3101.01 Main Steam (MS, IS, & ADS) section 8.2.4 Placing ADS Backup Air Bottles On Service.

STOP TIME: _____

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

INITIAL CONDITIONS:

You are the 'B' RO.

Due to a loss of IA, the ADS backup air bottles were placed in service.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

Instrument Air has been restored.

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

Report to the CRS after completing the task.

CLINTON POWER STATION

Job Performance Measure

VF Trip During Swap of VC Trains (Alternate Path)

JPM Number: JPM474

Revision Number: 00

Date: 9/14/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/14/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/25/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 3402.01P001 Rev: 6b
 Procedure CPS 3319.01 Rev: 17
 Procedure CPS 3404.01 Rev: 13e
- _____ 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)

Revision	Date	Description
00	9/14/16	New JPM.

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

Simulator Setup Instructions

1. IC Setup
 - a. Reset the simulator to any shutdown or at power IC with VC Train 'A' in service and VC Train 'B' secured.
 - b. Insert Remote Function VC10VC_CHILLERATCC OFF to secure VC Chiller 'A'.
 - c. Ensure plant is stable and then save to a different IC if JPM is being used more than once. IC-**225** (pw: 76319) is saved for the ILT 15-1 NRC Exam.
2. JPM Setup
 - a. Reset the simulator to the IC saved in Section 1 above.
 - b. Open and execute Simulator Lesson Plan ILT 15-1 NRC Exam JPMs.
 - c. Release JPM474 which will trigger the following when the 0VC03CB Cont Rm Sply Fan is started:
 - 1) A12_A06_DS164_1 OFF (1VF06Y/7Y Green Light Off)
 - 2) A12_A06_DS142_1 ON (1VF07Y Green Light On)
 - 3) A12_A05_S24 OFF (VF Exhaust Fans Off)
 - 4) A12_A05_DS124_1 ON (1VF04CA/B Amber Light On)
 - 5) A12_A05_DS70_1 OFF (1VF03CA/B Red Light Off)
 - 6) A12_A05_DS68_1 ON (1VF03CA/B Amber Light On)
 - 7) A12_A05_DS69_1 ON (1VF03CA/B Green Light 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.

**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 has successfully placed one of the two Standby Gas Treatment Trains in service to restore secondary containment differential pressure.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS 3402.01P001, Rev 6b CONTROL ROOM HVAC (VC) TRAIN SHIFTING
- CPS 5042.05 (5D), Rev 31a ALARM PANEL 5042 ANNUNCIATORS – ROW 5
- CPS 3319.01, Rev. 17 STANDBY GAS TREATMENT (VG)
- CPS 3404.01, Rev. 13e FUEL BUILDING HVAC (VF)

EVALUATOR INSTRUCTIONS:

- This JPM was developed from events detailed in LER 2014-001-00 Premature Failure Of Air Supply Solenoid Results in Isolation of Fuel Building Ventilation System and Loss of Secondary Containment Pressure.
- During performance of this JPM, when 0VC03CB Main Control Room Ventilation (VC) System 'B' Supply fan is started, the resultant voltage transient will result in a trip of the Fuel Building Supply and Exhaust Fans and high differential pressure in the Secondary Containment. These conditions will require the examinee to pursue the alternate path task to start one of the two Standby Gas Treatment (VG) Trains to restore Secondary Containment differential pressure.
- 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 a marked up copy of CPS 3402.01P001, CONTROL ROOM HVAC (VC) TRAIN SHIFTING with the cue sheet ONLY. Do NOT provide copies of CPS 3319.01 or CPS 3404.01 until prompted to do so after JPM step 3 and step 4.
- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

Main Control Room Ventilation (VC) Train 'A' is in-service.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS has directed you to shift Control Room HVAC (VC) trains to 'B' in service and 'A' secured in accordance with CPS 3402.01P001 CONTROL ROOM HVAC (VC) TRAIN SHIFTING starting at step 8.1.7.4.2.

The following steps have already been completed:

- 8.1.7.1 – 8.1.7.3 (all steps)
- 8.1.7.4.1
- 8.1.7.5.1 – 8.1.7.5.6
- 8.1.7.6.1 – 8.1.7.6.6

Report to the CRS when the task has been completed.

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 **BOLDED** 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

CPS 3402.01P001, Control Room HVAC (VC) Train Shifting Section 8.1.7.4

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*1	Secures VC Ventilation Train 'A'.	8.1.7.4.2 On panel 1H13-P801-5050, examinee shuts 0VC69Y Locker Rm Exh Fan 11C Isol Dmpr.			
		8.1.7.4.3 On panel 1H13-P801-5052, examinee shuts 0VC70Y Locker Rm Exh Fan 11C Isol Dmpr.			
		8.1.7.4.4 On panel 1H13-P801-5050, examinee verifies 0VC11C Cont Rm Locker Rm Exhaust Fan not running (green light illuminated, red light extinguished).			
		8.1.7.4.5 On panel 1H13-P801-5050, examinee either secures or leaves running Cont Rm HVAC Eq Rm Sply Fan 0VC18CA. <i>Cue: If asked, cue the examinee to leave 0VC18CA running.</i>			
		8.1.7.4.6 Examinee verifies CPS 3402.01P001 section 8.1.7.3 Chiller Shutdown is complete.			
		*8.1.4.7 On panel 1H13-P801-5050, examinee secures 0VC03CA, Cont Rm Trn A Supply Fan.			

Clinton Power Station
Job Performance Measure (JPM)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*1 (cont'd)		<p>8.1.7.4.8</p> <p>On 1H13-P801-5050, examinee verifies the following VC 'A' Ventilation components automatically realign:</p> <ul style="list-style-type: none"> ÿ 0VC03YA damper shuts ÿ 0VC115YA damper shuts ÿ 0VC04CA, Cont Rm Rtrn Fan stops ÿ 0VC08YA damper shuts ÿ 0VC08PA, Cont Rm Ch Wtr Pump A stops ÿ 0VC21YA damper shuts ÿ 0VC24YA damper shuts ÿ 0VC27YA damper shuts ÿ 0VC30YA damper shuts ÿ 0VC33YA damper shuts ÿ 0VC36YA damper shuts ÿ 0VC39YA damper shuts ÿ 0VC04YA damper shuts 			
*2	Starts VC Ventilation Train 'B'.	<p>8.1.7.5.7</p> <p>On 1H13-P801-5050 and 5052, examinee verifies 0VC01YA, Cont Rm Trn A Min OS Air Dmpr and 0VC01YB, Cont Rm Trn B Min OS Air Dmpr are open (red light illuminated, green light extinguished)</p>			
		<p>*8.1.7.5.8</p> <p>On 1H13-P801-5052, examinee starts 0VC03CB, Cont Rm Trn B Supply Fan (red light illuminated, green light extinguished).</p>			

Begin Alternate Path

CPS 5042-5D High Diff Press Fuel Bldg

Clinton Power Station
Job Performance Measure (JPM)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
3	Responds to High Differential Pressure in the Fuel Building (Secondary Containment)	<p>Operator Action 1</p> <p>Dispatches an operator to local panel 1PL44J to determine cause of the high differential pressure condition.</p> <p><i>Cue: If the examinee does not respond to 1H13-P800-5042 alarms, cue him/her to report 1H13-P800 alarms and take appropriate actions.</i></p> <p><i>Cue: when examinee reports trip of the Fuel Building Ventilation System to the CRS, acknowledge the report and direct the examinee to respond to annunciators as appropriate.</i></p> <p><i>Cue: (when asked to investigate local panel alarm), acknowledge the order and state, "I am on my way to the panel to investigate".</i></p>			
		<p>Operator Action 3</p> <p>Starts the Standby Gas Treatment System.</p> <p><i>Cue - If the examinee reports to the CRS that 5042-5D references ITS LCO 3.6.4.1 and may be reportable per SAF 1.8, acknowledge the report and state that you will refer to Technical Specifications and the Reportability Manual.</i></p>			

CPS 3319.01 STANDBY GAS TREATMENT (VG) (Provide copy to the examinee) (hard card use is acceptable)

4	Makes preparations for starting one of the two Standby Gas Treatment System trains.	<p>8.2.1.1</p> <p>Verify/secure all diesel exhaust sources (i.e., truck engines in the Fuel Bldg) which have the potential of being drawn into VG charcoal beds.</p> <p><i>Cue - If asked about diesel exhaust sources in the Fuel Building, cue the examinee that there are no diesel exhaust sources in the Fuel Building.</i></p>			
		<p>8.2.1.2</p> <p>Examinee verifies either ORIX-PR003 or PR004, SGTS Stack PRM in-service and operable.</p> <p><i>Cue - If asked about the operability status of ORIX-PR003 and/or PR004, state that both monitors are operable.</i></p>			

Clinton Power Station
Job Performance Measure (JPM)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*4 (cont'd)		8.2.1.3 Examinee notifies RP that VG will be manually started. <i>Cue – When examinee reports that VG will be manually started, acknowledge the report.</i>			
		8.2.1.4 Notifies Chemistry after SGTS flow is initiated to perform sampling per CPS 9940.01, Weekly Chemistry Surveillance Log. <i>Cue – when the examinee requests Chemistry to perform sampling per CPS 9940.01 acknowledge the order.</i>			
		8.2.1.5 Examinee monitors Secondary Containment pressure using Secondary CNMT DP (Div 1 - 5050) or Secondary CNMT DP (Div 2 - 5052) on 1H13-P801 as needed through the remainder of this section.			
		8.2.1.6 Examinee performs manual shutdown and isolation of VF using CPS 3404.01, Fuel Building HVAC (VF) to prevent tripping on high differential pressure.			

CPS 3404.01 Fuel Building HVAC (VF) (Provide copy to the examinee)

5	Performs manual shutdown and isolation of VF.	8.3.1.1 Notifies RP of pending VF system shutdown. <i>Cue – when the examinee reports pending VF system shutdown, acknowledge the report.</i>			
		8.3.1.2 Examinee directs equipment operator to turn Heater 1VF02A H/S to OFF. <i>Cue – as the Area Operator, report that the 1VF02A handswitch was already off.</i>			

Clinton Power Station
Job Performance Measure (JPM)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
5 (cont'd)		8.3.1.3 – 8.3.1.7 Examinee directs equipment operator to perform local panel 1PL44J shutdown actions for the Fuel Building Ventilation System. <i>Cue – as the Area Operator, report that steps CPS 3404.01 steps 8.3.1.3 – 8.3.1.7 are complete.</i>			
		8.3.1.8 On 1H13-P801-5050, examinee closes 1VF04Y/9Y Fuel Bldg Sply Outbd Isol Dmprs (green lights illuminated, red lights extinguished).			
		8.3.1.9 On 1H13-P801-5052, examinee closes 1VF06Y/7Y Fuel Bldg Sply Inbd Isol Dmprs (green lights illuminated, red lights extinguished).			
		8.3.1.10 If desired, place 1RIX-PR019, Fuel Bldg CAM (EOP-8 Monitor) in STANDBY per CPS 3315.03 (AR/PR). <i>Cue – as the CRS, state that another operator will place 1RIX-PR019 in standby and to proceed with placing Standby Gas Treatment in service.</i>			

CPS 3319.01 STANDBY GAS TREATMENT (VG)

Clinton Power Station
Job Performance Measure (JPM)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*6	Manually initiates either train of the Standby Gas Treatment System.	<p>*8.2.1.7</p> <p>On 1H13-P801-5050 or 5052, the examinee places the selected SGTS train in service by starting SGTS Trn A(B) Exh Fan, 0VG02CA(B), and then performs the following verifications:</p> <ul style="list-style-type: none"> ÿ 1VG17YA(B) Closes ÿ 1VG16YA(B) Closes ÿ 1VG04YA(B) Opens ÿ 1VG05YA(B) Opens ÿ 1VG06YA(B) Opens ÿ 1VG02YA(B) Opens ÿ 0VG01YA(B) Opens (modulates) ÿ 0VG04AA(B) Energizes ÿ 0VG02YA(B) Opens ÿ 0VG05YA(B) Opens ÿ 0VG03CA(B) Stops (if running) ÿ 0VG05CA(B) Starts (local indication) <p><i>Cue – when directed to verify status of 0VG05CA(B)(depending on which VG train was started), report that 0VG05CA(B) is running.</i></p> <p><i>Cue – State that the JPM is complete when verifications are completed.</i></p>			

TERMINATING CUES:

The Standby Gas Treatment System has been manually initiated to restore Secondary Containment differential pressure.

STOP TIME: _____

Clinton Power Station Job Performance Measure (JPM)

Operator's Name: _____

Job Title: £ EO £ RO £ SRO £ STA £ SRO Cert

JPM Title: VF Trip During Swap of VC Trains (Alternate Path)

JPM Number: JPM474 Revision Number: 00

Task Number and Title: 340401.05 Respond to High or Low Fuel Building Differential Pressure

K/A System	K/A Number	Importance (RO/SRO)	
288000	A4.01	3.1	2.9
Ability to manually operate and/or monitor in the control room: Start and stop fans.			

Suggested Testing Environment: Simulator

Actual Testing Environment: ₤ Simulator ₤ Plant ₤ Control Room

Testing Method:	<input type="checkbox"/> Simulate	Alternate Path:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Time Critical: £ Yes ¢ No

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

References:

- CPS 3402.01P001, Rev 6b CONTROL ROOM HVAC (VC) TRAIN SHIFTING
- CPS 5042.05 (5D), Rev 31a ALARM PANEL 5042 ANNUNCIATORS – ROW 5
- CPS 3319.01, Rev. 17 STANDBY GAS TREATMENT (VG)
- CPS 3404.01, Rev. 13e FUEL BUILDING HVAC (VF)

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:

Main Control Room Ventilation (VC) Train 'A' is in-service.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS has directed you to shift Control Room HVAC (VC) trains to 'B' in service and 'A' secured in accordance with CPS 3402.01P001 CONTROL ROOM HVAC (VC) TRAIN SHIFTING starting at step 8.1.7.4.2.

The following steps have already been completed:

- 8.1.7.1 – 8.1.7.3 (all steps)
- 8.1.7.4.1
- 8.1.7.5.1 – 8.1.7.5.6
- 8.1.7.6.1 – 8.1.7.6.6

Report to the CRS when the task has been completed.

CLINTON POWER STATION

Job Performance Measure

RCIC Startup at the RSP – Alternate Path

JPM Number: JPM247

Revision Number: 03

Date: 9/19/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/19/16</u> Date
Validated By:	<u>Brian Glynn</u> SME or Instructor	<u>10/25/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 4003.01 Rev: 17c
Procedure CPS 4003.01C002 Rev: 5a
Procedure CPS 4003.01C003 Rev: 1
Procedure OP-AA-101-111 Rev: 9
- _____ 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)

Revision	Date	Description
00	08/08/09	Updated numbering convention and technically corrected. Old JPM number: 40030104LSA01.
01	06/06/12	Updated format, aligned with procedure revision and revision numbers.
02	10/09/12	Revision due to procedure and template revision.
03	9/19/16	Updated procedure references.

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

Simulator Setup Instructions

1. IC Setup

a. To establish initial conditions for JPM247, perform the following actions:

- 1) Reset to any at power IC.
- 2) Place Reactor Mode Switch in Shutdown and stabilize RPV level below level 3 but above level 2 with the Motor Driven Reactor Feed Pump. May have to secure RD Pumps to get level down.
- 3) Open and execute Simulator Lesson Plan JPM247 to cause the RSP RCIC Flow Controller to be overridden in Manual.
- 4) Place the simulator in Run.
- 5) Depress the RCIC Flow Controller Close Pushbutton until controller output is at zero.
- 6) Save to a different IC if JPM is being used more than once. IC-**226** (PW-76319) is saved for the ILT 15-1 NRC Exam.

2. JPM Administration

- 1) Reset the simulator to the IC saved in step 1 above.
- 2) Verify command A17_A01_A02_4 RSP RCIC Turb Flow Controller – Man/Auto = Manual is active.
- 3) Place book of Remote Shutdown procedures in RSP Room.
- 4) Verify RCIC is not initiated.
- 5) Verify the RCIC controller at the Remote Shutdown Panel is in Auto set at 620 gpm.
- 6) Verify the RCIC suction is aligned to the RCIC Storage Tank.
- 7) No simulator lesson plan is required for this JPM once initial conditions have been established per step 1.
- 8) Freeze Simulator.

**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:

- The RCIC System is started from the Remote Shutdown Panel and injecting to the Reactor Vessel to restore and control RPV water level, Level 3 to Level 8 per CPS 4003.01C002 RSP – RCIC Operation.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS 4003.01, REMOTE SHUTDOWN (RS)
- CPS 4003.01C002, RSP – RCIC OPERATION
- CPS 4003.01C003, RSP – RCIC ALARM LIGHT RESPONSES
- OP-AA-101-111, ROLES AND RESPONSIBILITIES OF ON-SHIFT PERSONNEL

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.
- When the examinee has acknowledged the initiating cue, provide him/her with the following procedures:
 - CPS 4003.01 Remote Shutdown (RS) – place kept with step 4.1.1 marked N/A.
 - CPS 4003.01C002 RSP – RCIC Operations (blank)
 - CPS 4003.01C003 RSP – RCIC Alarm Light Responses (blank)

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

INITIAL CONDITIONS:

A plant transient has resulted in a reactor scram, loss of Feedwater, and loss of RCIC control from 1H13-P601.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS directs you to startup the RCIC system from the Remote Shutdown Panel and inject to the Reactor Vessel to restore and control RPV water level from Level 3 to Level 8 per CPS 4003.01 Remote Shutdown (RS) section 4.3, CPS 4003.01C002, RSP - RCIC Operation and CPS 4003.01C003, RSP – Alarm Light Responses.

Inform the CRS when the task is complete.

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 BOLDED 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

4003.01C002 RSP – RCIC Operation
4.0 RCIC TRANSFER TO THE RSP

- 4.1 Verify:
1. Power to 4160V Bus 1A1 available as indicated by the following energized blue lights:
 - BOP 120V CONTROL POWER CKT. 22 AB MCC 1A1
 - 120 VAC CONTROL POWER CKT #12, AB MCC 1A1
 2. RCIC TURBINE TRIP in NORM.
 3. RCIC TURB FLOW CONTROLLER, C61-R001 set to A (Automatic)/620 gpm.

- Standard · For substep 1, the examinee verifies two blue lights lit on the upper left hand side of the Remote Shutdown Panel.
- For substep 2, the examinee verifies the RCIC Turbine Trip switch in Norm (vertical) in the center of the Remote Shutdown Panel.
- For substep 3, the examinee verifies the RCIC Turbine Flow Controller M/A slide switch is positioned to the right and the tape set is set to 620 gpm.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

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

***4.2 Verify / Place following TRANSFER SWITCHES to EMERG:**

- 1. C61-S3**
- 2. C61-S2**
- 3. C61-S11**

Standard: Examinee places the above 3 switches in the EMERG position.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

4.3 Verify GLAND SEAL COMPRESSOR, 1E51-C002F in STOP if compressor is off, or in START if the compressor is running.

Standard Examinee verifies control switch for the RCIC Gland Seal Compressor, 1E51-C002F is in the vertical position (STOP).

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

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

***4.4 Verify / Place TRANSFER SWITCH C61-S4 to EMERG.**

Standard Examinee places Transfer Switch C61-S4 in the EMERG position.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

4.5 Place/verify 1E51-F068, RCIC TURB EXH TO SUPPR POOL STOP VLV switch in OPEN.

Standard Examinee verifies 1E51-F068, RCIC Turb Exh To Suppr Pool Stop Vlv is in the OPEN position by verifying the control switch is rotated clockwise to the OPEN position and observing the RED status light is lit and the green status light is extinguished.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

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

***4.6 Verify / Place TRANSFER SWITCH C61-S5 to EMERG.**

Standard Examinee places Transfer Switch C61-S5 in the EMERG position.

Cue: None

Comments

SAT £

UNSAT £

Comment Number _____

4.7.1 Verify open 1E51-F063, RHR & RCIC STM SUPP INBD ISOL VALVE.

Standard Examinee verifies 1E51-F063 is OPEN by observing the RED status light is lit and the GREEN status light is off.

Cue: None

Comments

SAT £

UNSAT £

Comment Number _____

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

4.7.2 Verify open 1E51-F064, RHR & RCIC STM SUPP OUTBD ISOL VALVE.

Standard Examinee verifies 1E51-F064 is OPEN by observing the RED status light is lit and the GREEN status light is off.

Cue: None

Comments Step 4.7.3 is N/A.

SAT £ UNSAT £ Comment Number _____

4.8 Check RCIC status:
· RCIC TURB SPEED, C61-R003.
· RCIC PUMP FLOW, C61-R001-1.

Standard Examinee observes meters C61-R003 and C61-R001-1 read 0 and determines RCIC is Shutdown.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

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

- 4.8.1 **IF** RCIC is running,
 THEN verify that Section 5.0, RCIC STARTUP actions have occurred.
 OTHERWISE, proceed to 5.0, RCIC STARTUP to startup RCIC.

Standard Examinee proceeds to Section 5.0 of 4003.01C002.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

5.0 RCIC STARTUP

- 5.1 At DC MCC 1A-12A (1DC13E12A), Shut circuit #21.
 [Energizes AOV 1E51-F005/F026 to allow for steam line/condensate pot drain down. Circuit will be deenergized in step 5.9.]

Standard Examinee states they would perform or dispatches an Equipment Operator to shut circuit #21 at DC MCC 1A-12A (1DC13E12A)

Cue: Acknowledge request/dispatch and state the component is in the position requested.

Comments

SAT £ UNSAT £ Comment Number _____

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

5.2 Open 1E51-C002E, TURBINE TRIP THROTTLE VALVE.
[Trips on Mechanical Overspeed]

Standard Examinee verifies 1E51-C002E, Turbine Trip Throttle Valve is open by observing the RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

5.3 **IF** RCIC Cond Stor Tnk Lvl, C61-R505 ³ 3.2 ft, or
Suppression Pool Level, C61-R504 £ 19.9 ft,
THEN Open 1E51-F010, RCIC STORAGE TANK SUCTION VALVE,
OTHERWISE Open 1E51-F031, RCIC SUPPR POOL SUCTION VALVE.

Standard Examinee observes RCIC Cond Stor Tnk Lvl and Suppression Pool Level indicators on the RSP and determines that RCIC tank level is > 3.2 ft and Suppression Pool Level is <19.9 ft and then determines 1E51-F010 is Open by observing the RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

Clinton Power Station
Job Performance Measure (JPM)

- 5.4 Open / Verify Open:
 1.1E51-F077, RCIC EXH VAC BKR OUTBD ISOL VALVE.
 2.1E51-F078, RCIC EXH VAC BKR INBD ISOL VALVE.

Standard Examinee verifies 1E51-F077, RCIC Exh Vac Bkr Outbd Isol Valve and 1E51-F078, RCIC Exh Vac Bkr Inbd Isol Valve are open by observing RED status lights are lit and GREEN status lights are extinguished.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

- 5.5 Start GLAND SEAL COMPRESSOR, 1E51-C002F.

Standard Examinee rotates the control switch for the Gland Seal Compressor, 1E51-C002F clockwise to the start position and and verifies the RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments This step is not critical because RCIC will perform its intended safety function without the Gland Seal Air Compressor running.

SAT £ UNSAT £ Comment Number _____

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

***5.6 Open 1E51-F019, RCIC PMP MIN FLOW RECIRC TO SUPPR POOL.**

Standard Examinee rotates the control switch for 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr Pool clockwise to the open position and verifies the RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

5.7 Open / Verify Open 1E51-F068, RCIC TURB EXH TO SUPPR POOL STOP VLV.

Standard Examinee verifies 1E51-F068, RCIC Turb Exh To Suppr Pool Stop Vlv open by observing the RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

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

***5.8 Open 1E51-F045, RCIC TURB STM SUPP SHUTOFF VALVE.**

Standard Examinee opens 1E51-F045, RCIC Turb Stm Supp Shutoff Valve and observes RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments Due to RCIC Turbine Speed being low because of C61-R001 Controller failure, it is acceptable for the examinee to take manual control and adjust the C61-R001 Controller (manual actions for failed Auto Actions).

SAT £ UNSAT £ Comment Number _____

5.9 While continuing with steps 5.10 or 5.11:
At DC MCC 1A-12A (1DC13E12A), open circuit #21.
[Deenergizes AOV 1E51-F005/F026 to prevent possible steam releases (temp/rad concerns) into RCIC room and Turbine Bldg.]

Standard Examinee state they would perform or dispatches an equipment operator to open circuit #21 at DC MCC 1A-12A.

Acknowledge request/dispatch and state the component is in the position requested.

Comments

SAT £ UNSAT £ Comment Number _____

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

***5.10.1 IF RCIC is required for RPV water level control,
THEN
 Open 1E51-F013, RCIC PUMP DISCH TO RX OUTBD ISOL VALVE.**

Standard Examinee turns the control switch for 1E51-F013, RCIC Pump Disch To Rx Outbd Isol Valve clockwise to the open position and observes the RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments Per limitation 3.5, the minimum flow orifice is sized for 60 to 76 gpm. RCIC pump operation under this condition should be limited to < 20 seconds to prevent potential degradation of internal pump parts.

SAT £ UNSAT £ Comment Number _____

5.10.2 Shut 1E51-F022, RCIC PMP FIRST TEST VALVE TO STOR TNK.

Standard Examinee verifies 1E51-F022, RCIC Pmp First Test Valve To Stor Tnk is shut by observing the RED status light is extinguished and the GREEN status light is lit.

Cue: None

Comments Valve is normally shut.

SAT £ UNSAT £ Comment Number _____

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

5.10.3 Shut 1E51-F059, RCIC PMP SECOND TEST VALVE TO STOR TNK.

Standard Examinee verifies 1E51-F059, RCIC Pmp Second Test Valve To Stor Tnk is shut by observing the RED status light is extinguished and the GREEN status light is lit.

Cue: None

Comments Valve is normally shut.

SAT £ UNSAT £ Comment Number _____

5.10.4 Adjust RCIC TURB FLOW CONTROLLER, C61-R001 to maintain flow 80 to 700 gpm.

NOTE: Avoid AUTO when < 450 gpm (see Precaution 1.4).

Standard Reports to SRO failure of RCIC controller or takes manual control of controller.

Cue: When the student reports the controller has failed, cue the Examinee: "RCIC is needed to restore vessel level, inject with RCIC."

Comments Expected response it to take manual control to establish injection flow.
Cue/direction to restore level.

SAT £ UNSAT £ Comment Number _____

BEGIN ALTERNATE PATH

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

*** Places controller C61-R001 selector to 'M' (MANUAL).**

Standard Examinee positions Controller C61-R001 mode selector to the left in 'M' position.

Cue: None

Comments OP-AA-101-111 step 4.7.2.5 directs taking manual control.

SAT £ UNSAT £ Comment Number _____

*** Adjusts controller in MANUAL to raise RCIC turbine speed and pump flow above minimum requirements and to achieve rising RPV level.**

Standard Examinee adjusts Controller to establish >60 gpm flow and >1500 rpm and rising RPV level.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

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

5.10.5 Shut 1E51-F019, RCIC PMP MIN FLOW RECIRC TO SUPPR POOL.

Standard Examinee shuts 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr Pool and observes the RED status light is extinguished and the GREEN status light is lit.

Cue: None

Comments Valve is normally shut.

SAT £ UNSAT £ Comment Number _____

5.10.6 Verify 1VY04C, RCIC PMP RM SPLY FAN has started.

Standard Examinee verifies 1VY04C, RCIC Pmp Rm Sply Fan has started by observing the RED status light is lit and the GREEN status light is extinguished.

Cue: None

Comments

SAT £ UNSAT £ Comment Number _____

Task Completion

Standard: Informs Control Room Supervisor he/she has commenced RCIC injection into the Reactor Pressure Vessel.

Cue: Acknowledge the report. State JPM is complete.

Comments

SAT £ UNSAT £ Comment Number _____

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

STOP TIME: _____

Clinton Power Station Job Performance Measure (JPM)

Operator's Name: _____

Job Title: £ EO £ RO £ SRO £ STA £ SRO Cert

JPM Title: RCIC Startup at the RSP – Alternate Path

JPM Number: JPM247

Revision Number: 02

Task Number and Title: 40030104, Remote Shutdown tasks that DO require MCR evacuation

K/A System	K/A Number	Importance (RO/SRO)	
217000	A2.10	3.1	3.1
Ability to (a) predict the impacts of the following on the RCIC ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Turbine control system failures			

Suggested Testing Environment: Simulator

Actual Testing Environment: ₤ Simulator ₤ Plant ₤ Control Room

Testing Method:	<input type="checkbox"/> Simulate	Alternate Path:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Time Critical: £ Yes ¢ No

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

References:

CPS 4003.01, REMOTE SHUTDOWN (RS), Rev. 17c

CPS 4003.01C002, RSP – RCIC OPERATION, Rev. 5a

CPS 4003.01C003, RSP – RCIC ALARM LIGHT RESPONSES, Rev. 1

OP-AA-101-111, ROLES AND RESPONSIBILITIES OF ON-SHIFT PERSONNEL, Rev. 9*

* Procedure is not required to be copied for JPM administration.

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:

A plant transient has resulted in a reactor scram, loss of Feedwater, and loss of RCIC control from 1H13-P601.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS directs you to startup the RCIC system from the Remote Shutdown Panel and inject to the Reactor Vessel to restore and control RPV water level from Level 3 to Level 8 per CPS 4003.01 Remote Shutdown (RS) section 4.3, CPS 4003.01C002, RSP - RCIC Operation and CPS 4003.01C003, RSP – Alarm Light Responses.

Inform the CRS when the task is complete.

CLINTON POWER STATION

Job Performance Measure

High Containment Pool Level Protective Actions

JPM Number: JPM222

Revision Number: 02

Date: 09/19/2016

Developed By:	<u>Tony Jennings</u> Instructor	<u>09/19/16</u> Date
Validated By:	<u>Brian Glynn</u> SME or Instructor	<u>10/27/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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 CPS 4411.05 Rev: 4b
 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)

Revision	Date	Description
00	07/11/2007	Updated numbering convention. Old JPM number: 44110502NSN01.
01	08/02/2010	Updated format and task number
02	06/14/13	Updated to new template

**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.

No equipment or controls will be manipulated during this evaluation, only **Simulated** Actions will occur.

TASK STANDARDS:

- Complete the Outside MCR portion of CPS No. 4411.05 High Containment Pool Level Protective Actions, Table 1,

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None.

PROCEDURAL/REFERENCES:

- CPS No. 4411.05 Rev 4b, High Containment Pool Level Protective Actions.

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- Do NOT allow examinee to shine any type of light into any panel.
- Provide the Initiating Cue in the R&S Line in the Radwaste Building.
- Provide the examinee with a copy of the Initial Conditions and Initiating Cue page (back page of the JPM) when providing the initiating cue.
- Once the initiating cue has been acknowledged by the examinee, provide him/her with a marked up copy of CPS 4411.05 High Containment Pool Level Protective Actions with the following notations:
 - Page 2, step 2.1, TABLE 1 STARTED: <10 minutes prior to current time>
 - Page 4, STARTED: <today's date> / <10 minutes prior to current time>
 - Page 4, step 1) MCR – fill in initials for MCR actions in Table 1

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

INITIAL CONDITIONS:

The decision has been made to flood the Primary Containment. Current level in the Primary Containment is 22~~0~~5² and rising at ~1" every 5 minutes.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § No equipment or controls will be manipulated during this evaluation, only **Simulated** actions will occur.
- § Do NOT shine any type light into a panel.

You are directed to deenergize electrical loads per CPS No. 4411.05 High Containment Pool Level Protective Actions, Table 1, Section 2, OUTSIDE MCR.

Report to the CRS after completing the task.

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 **BOLDED** 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

CPS No. 4411.05 High Containment Pool Level Protective Actions

Deenergizes electrical equipment per Table 1, Section 2 Outside MCR.

At AB 7810East

*** At AB MCC 1A1, Cubicle 1D place both breakers to the OFF position for Drywell Cooling Fan 1A.**

- Standard:
- Examinee wears the following PPE(as a minimum):
 - Gripper gloves
 - Safety glasses or safety goggles
 - Hard Hat
 - Natural fiber long sleeve shirt and pants
 - Examinee simulates rotating both breaker handles to the OFF position.

Cue: The breaker handles are in the position described.

Comments The critical element of this step is to turn the required breakers to OFF. Wearing less than the minimum PPE should be considered a competency hit.

SAT £

UNSAT £

Comment Number _____

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

At AB 7620East

- * At AB MCC 1F, Cubicle 3D place both breakers to the OFF position for Drywell Equip Drain Sump Pump 1A.**

- Standard:
- Examinee wears the following PPE(as a minimum):
 - Gripper gloves
 - Safety glasses or safety goggles
 - Hard Hat
 - Natural fiber long sleeve shirt and pants
 - Examinee simulates rotating both breaker handles to the OFF position.

Cue: The breaker handles are in the position described.

Comments The critical element of this step is to turn the required breakers to OFF. Wearing less than the minimum PPE should be considered a competency hit.

SAT £

UNSAT £

Comment Number _____

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

At AB 7620East

- * At AB MCC 1F, Cubicle 5B place both breakers to the OFF position for Drywell Floor Drain Sump Pump 1A.**

- Standard:
- Examinee wears the following PPE(as a minimum):
 - Gripper gloves
 - Safety glasses or safety goggles
 - Hard Hat
 - Natural fiber long sleeve shirt and pants
 - Examinee simulates rotating both breaker handles to the OFF position.

Cue: The breaker handles are in the position described.

Comments The critical element of this step is to turn the required breakers to OFF. Wearing less than the minimum PPE should be considered a competency hit.

SAT £

UNSAT £

Comment Number _____

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

At AB 762 West

- * At AB MCC 1G, Cubicle 4A place both breakers to the OFF position for Drywell Equip Drain Sump Pump 1B.**

- Standard:
- Examinee wears the following PPE(as a minimum):
 - Gripper gloves
 - Safety glasses or safety goggles
 - Hard Hat
 - Natural fiber long sleeve shirt and pants
 - Examinee simulates rotating both breaker handles to the OFF position.

Cue: The breaker handles are in the position described.

Comments The critical element of this step is to turn the required breakers to OFF. Wearing less than the minimum PPE should be considered a competency hit.

SAT £

UNSAT £

Comment Number _____

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

At AB 762 West

- * At AB MCC 1G, Cubicle 4C place both breakers to the OFF position for Drywell Floor Drain Sump Pump 1B.**

- Standard:
- Examinee wears the following PPE(as a minimum):
 - Gripper gloves
 - Safety glasses or safety goggles
 - Hard Hat
 - Natural fiber long sleeve shirt and pants
 - Examinee simulates rotating both breaker handles to the OFF position.

Cue: The breaker handles are in the position described.

Comments The critical element of this step is to turn the required breakers to OFF. Wearing less than the minimum PPE should be considered a competency hit.

SAT £ UNSAT £ Comment Number _____

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

At AB 781 West

- * At AB MCC 1B1, Cubicle 2C place both breakers to the OFF position for Drywell Cooling Fan 1B.**

- Standard:
- Examinee wears the following PPE(as a minimum):
 - Gripper gloves
 - Safety glasses or safety goggles
 - Hard Hat
 - Natural fiber long sleeve shirt and pants
 - Examinee simulates rotating both breaker handles to the OFF position.

Cue: The breaker handles are in the position described.

Comments The critical element of this step is to turn the required breakers to OFF. Wearing less than the minimum PPE should be considered a competency hit.

SAT £ UNSAT £ Comment Number _____

TERMINATING CUES:

All breakers simulated being placed in the OFF position per CPS No. 4411.05 High Containment Pool Level Protective Actions, Table 1, Section 2, Outside MCR.

STOP TIME: _____

Clinton Power Station Job Performance Measure (JPM)

Operator's Name: _____

Job Title: £ EO £ RO £ SRO £ STA £ SRO Cert

JPM Title: High Containment Pool Level Protective Actions

JPM Number: JPM222 Revision Number: 02

Task Number and Title: 441105.01 High Containment Pool Level Protective Actions

K/A System	K/A Number	Importance (RO/SRO)	
295029	2.4.35	3.8	4.0
Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.			

Suggested Testing Environment: Plant

Actual Testing Environment: £ Simulator ¢ Plant £ Control Room

Testing Method:	<input checked="" type="checkbox"/> Simulate	Alternate Path:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	<input type="checkbox"/> Perform	SRO Only:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Time Critical: £ Yes ¢ No

Estimated Time to Complete: 18 minutes **Actual Time Used:** minutes

*The JPM task would normally be assigned in the OSC; therefore 3 minutes were added on to the JPM Estimated Time to account for the transient time between the OSC and the R&S Line location

References: CPS No. 4411.05 Rev 4b, High Containment Pool Level Protective Actions.

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 decision has been made to flood the Primary Containment. Current level in the Primary Containment is 22~~0~~5² and rising at ~1" every 5 minutes.

INITIATING CUE:

CAUTION

- § All pre-job briefings are completed.
- § No equipment or controls will be manipulated during this evaluation, only **Simulated** actions will occur.
- § Do NOT shine any type light into a panel.

You are directed to deenergize electrical loads per CPS No. 4411.05 High Containment Pool Level Protective Actions, Table 1, Section 2, OUTSIDE MCR.

Report to the CRS after completing the task.

CLINTON POWER STATION

Job Performance Measure

Startup the Fuel Building HVAC VF System
to support Emergency Containment Venting

JPM Number: JPM431

Revision Number: 02

Date: 9/19/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/19/16</u> Date
Validated By:	<u>Matt Baker</u> SME or Instructor	<u>10/27/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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.

- _____ a) Task description and number, JPM description and number are identified.
- _____ b) Knowledge and Abilities (K/A) references are included.
- _____ c) Performance location specified. (in-plant, control room, simulator, or other)
- _____ d) Initial setup conditions are identified.
- _____ e) Initiating cue (and terminating cue if required) are properly identified.
- _____ f) Task standards identified and verified by SME review.
- _____ g) Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- _____ h) Verify the procedure(s) referenced by this JPM reflects the current revision:
 Procedure CPS 3404.01 Rev: 13e
 Procedure _____ Rev: _____
 Procedure _____ Rev: _____
- _____ i) Verify cues both verbal and visual are free of conflict.
- _____ j) Verify performance time is accurate
- _____ k) If the JPM cannot be performed as written with proper responses, then revise the JPM.
- _____ l) 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)

Revision	Date	Description
00	7/28/10	New JPM.
01	6/14/14	Updated to new JPM template and updated procedure revisions.
02	9/19/16	Updated procedure references.

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

Simulator Setup Instructions

1. This is an in-plant JPM and requires no simulator setup..

**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:

- The Fuel Building HVAC system is in operation IAW CPS No. 3404.01 Fuel Building HVAC (VF)

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 340401, Rev 13e FUEL BUILDING HVAC (VF)

EVALUATOR INSTRUCTIONS:

- 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 a copy of CPS 3404.01 Fuel Building HVAC (VF) when providing the initiating cue.
- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.

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

INITIAL CONDITIONS:

A condition exists which requires Emergency Venting of the Containment.

VF System is shutdown IAW CPS 3404.01 FUEL BUILDING HVAC (VF) section 8.3 Shutdown.

The Standby Gas Treatment System (VG) is shut down.

EOP checklist CPS No. 4410.00C011, DEFEATING LOW RPV WATER LEVEL AND HIGH DRYWELL PRESSURE FUEL BUILDING VENTILATION ISOLATIONS, has been completed.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS has directed you to restart the Fuel Building HVAC system to support the venting process per the normal startup section of CPS 3404.01 FUEL BUILDING HVAC (VF), section 8.1.7.

MCR actions per steps 8.1.1 through 8.1.6 are complete.

Report to the CRS after completing the task.

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 **BOLDED** 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

CPS 3404.01 FUEL BUILDING HVAC (VF)

***8.1.7.1 For all available Exhaust/Supply fan(s):**

- a) **Place 1VF04CA, Exhaust Fan H/S [1HS-VF005] to AFTER-STOP.**
- b) **Place 1VF04CB, Exhaust Fan H/S [1HS-VF006] to AFTER-STOP.**
- c) **Place 1VF03CA, Supply Fan H/S [1HS-VF002] to AFTER-STOP.**
- d) **Place 1VF03CB, Supply Fan H/S [1HS-VF003] to AFTER-STOP.**

Standard: Examinee locates the control switches for 1VF04CA, 4CB, 3CA, and 3CB at 1PL44J and simulates taking each control switch out of PTL and into AFTER-STOP.

Cue: The components are in the position you've described.

Comments

SAT ☐

UNSAT ☐

Comment Number _____

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

***8.1.7.2 Start 1VF04CA(CB), Exhaust Fan [1HS-VF005(006)].**

Observe the following:

- a) 1VF11YA(YB), Exh Fan Disch Dmpr opens.
- b) Fuel Bldg Average Pressure (1PDI-VF035B) begins to go negative.

Standard: Examinee locates control switches for 1VF04CA or 1VF04CB, simulates turning the respective control switch 1HS-VF005 or 1HS-VF006 clockwise to the START position and then releases.

Examinee verifies the following:

- 1VF04CA(B) RED light ON and GREEN light OFF.
- 1VF11YA(YB) RED light ON and GREEN light OFF.
- Verifies 1PDI-VF035B moves in the negative direction.

Cue: If the examinee asks which set of supply and/or exhaust fans to start, cue him/her that the MCR has no preference on which fans are started.

When the exhaust fan is started, cue the indicator needle (with an ink pen or similar device) on 1PDI-VF035B trending slowly in the negative direction.

Cue the examinee that components and indications are as you've described.

Comments If checked INITIALLY, 1PDI-VF035B reads 0 inches water.

SAT £ UNSAT £ Comment Number _____

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

***8.1.7.3** **WHEN** Fuel Bldg Average Pressure reaches -0.5" H₂O,
THEN Start 1VF03CA(CB), Supply Fan [1HS-VF002(003)].

Observe the following:

- a) 1VF02YA(YB), Supply Fan Disch Dmpr opens.
- b) 1VF01Y, Supply Fan Intake Dmpr opens.
- c) Fuel Bldg Average Pressure steadies out at ~ -0.7 inches water (1PDI-VF035B)

Standard: Examinee locates control switches for 1VF03CA or 1VF03CB, simulates turning the respective control switch 1HS-VF002 or 1HS-VF003 clockwise to the START position and then releases.

Examinee verifies the following:

- 1VF03CA(B) RED light ON and GREEN light OFF.
- 1VF02YA(YB) RED light ON and GREEN light OFF.
- Verifies 1VF01Y RED light ON and GREEN light OFF.
- 1PDI-VF035B steadies out at -0.7 inches water.

Cue: After the VF supply fan has been started, cue the indicator needle on 1PDI-VF035B trending slowly in the negative direction and then steadying out at ~ -0.7 inches water.

Cue the examinee that components and indications are as you've described.

Comments

SAT £ UNSAT £ Comment Number _____

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

- 8.1.7.4 4) IF Needed to maintain building temperature,
THEN Place Heater, 1VF02A, H/S to ON (1HS-VF028).

Standard: No action required.

Cue: If examinee asks whether to energize heater 1VF02A, respond as MCR “Do NOT start building heater”.

Comments

SAT £ UNSAT £ Comment Number _____

- 8.1.8 Place/verify 1RIX-PR019, Fuel Bldg CAM (EOP-8 Monitor) in NORMAL per CPS 3315.03, Radiation Monitoring (AR/PR).

Standard: No action required (MCR Action).

Cue: May contact RP or MCR to perform this action.

Comments

SAT £ UNSAT £ Comment Number _____

- 8.1.9 Following system stabilization, position supply and exhaust fan switches to agree with running and standby status of the respective fan(s) (red flag/green flag).

Standard: No action required; switch positions should be in agreement with the running and standby status of each fan.

Cue:

Comments

SAT £ UNSAT £ Comment Number _____

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

TERMINATING CUES:

Fuel Building HVAC is in service IAW CPS No. 3404.01 FUEL BUILDING HVAC (VF).

STOP TIME: _____

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

INITIAL CONDITIONS:

A condition exists which requires Emergency Venting of the Containment.

VF System is shutdown IAW CPS 3404.01 FUEL BUILDING HVAC (VF) section 8.3 Shutdown.

The Standby Gas Treatment System (VG) is shut down.

EOP checklist CPS No. 4410.00C011, DEFEATING LOW RPV WATER LEVEL AND HIGH DRYWELL PRESSURE FUEL BUILDING VENTILATION ISOLATIONS, has been completed.

INITIATING CUE:

CAUTION

§ All pre-job briefings are completed.

The CRS has directed you to restart the Fuel Building HVAC system to support the venting process per the normal startup section of CPS 3404.01 FUEL BUILDING HVAC (VF), section 8.1.7.

MCR actions per steps 8.1.1 through 8.1.6 are complete.

Report to the CRS after completing the task.

Exelon Nuclear

ILT 15-1 NRC Exam

**Scenario Number:
NRC Exam Scenario 1**

Revision Number: 0

Date: 10/28/16

Developed By:	<u>T. Jennings</u> Instructor	<u>10/28/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/28/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</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>2017-301</u>
Examiners: _____ _____	Operators: _____ _____	
<p>Initial Conditions:</p> <ul style="list-style-type: none"> • Mode 1 at ~78% power to support performance of CPS 9031.07 Main Turbine Control Valve Tests on the next shift. • Thunderstorms are expected in the area within the next hour. • CY Pump 'B' (0CY01PB) is OOS for maintenance. Not expected back this shift. • CPS 9080.03 DG 1C Operability – Manual and Quick Start Operability is in progress. DG 1C is running in parallel with RAT 'B'. <p>Turnover:</p> <ul style="list-style-type: none"> • Priorities for the shift are as follows: <ul style="list-style-type: none"> • Secure Division 3 Diesel Generator (DG 1C) per CPS 9080.03 DG 1C Operability – Manual and Quick Start Operability, starting at step 8.2.16 – First Priority. CPS 9082.01 Offsite Source Power Verification was completed one (1) hour ago. • Maintain power at 78% throughout the shift. 		

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N-BOP	Secure DG 1C
2	YP_XMFTB_3986 A05_A02_A104_3_TVM A05_A02_A105_3_TVM A05_A02_A106_3_TVM	TS-SRO	DG 1C Overspeeds When Unloaded
3	A02_A05_01_7_TVM=2	C-ATC	CRD high temperature
4	CAM0PR001IA_PUMP to 1 CAM0PR001TV_VALUE15 to 0	C-BOP TS-SRO	Failure of 0RIX-PR001 Ch 15 - Low flow due to sample pump failure
5	A01_A02_01_8_TVM	C-ATC	Clogged oil filter Condensate Booster Pump 'A'
6	YPXMALSE_77 to 50	C-BOP	Inadvertent opening of a SRV
7	YFFWPPSS_11 YAFWPPDE_9	R-ATC	Loss of CY – Rapid Plant Shutdown
8	RAT_B_OVERCURRENT YARIMVFP_2 = 0 ED17B221C1FO YPXMALSE_511	M-All	LOCA/RAT trip/E51-F013 Failure/Div 3 ERAT Feed Breaker Failure/TAF Blowdown
9	YP_XMFTB_4106 lp11acld001fsp=True	C-BOP	LPCS Fails To Auto Start LPCS Injection Valve 1E21F005 Fails to Auto Open at 472 psig RPV pressure

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

Scenario No.: 1

Operating Test No.: 2017-301

Narrative Summary

Event #	Description
1. Secure DG 1C	Division 3 DG is running in parallel with RAT 'B' IAW CPS 9080.03, Diesel Generator 1C Operability – Manual and Quick Start Operability. Following shift turnover, the SRO will direct the BOP operator to unload and secure DG 1C and place it back in standby.
2. DG 1C Overspeeds When Unloaded	When the BOP opens the output breaker for DG 1C in event 1, annunciators 5062-2C TRIP/LOCKOUT DIESEL GEN 1C, 5062-4C OVERSPEED DIESEL GEN 1C, 5062-5C TRIPPED DIESEL GEN 1C ENGINE and 5062-6C TROUBLE DIESEL GEN 1C come in due to an overspeed trip of the Div 3 DG. The overspeed trip will result in a lockout of the Div 3 DG, rendering the DG inoperable and unavailable. The field operator stationed in the Div 3 DG Room will confirm MCR indications. Technical Specification 3.8.1 Condition B (one required DG inoperable) will be entered and appropriate actions taken.
3. CRD high temperature	Annunciator 5006-1G CRD HYDR TEMP HI is received. The ATC operator will dispatch a field operator to the local recorder on 1H22-P007 to determine rod 52-25 is alarming. The ATC operator will note that rod 52-25 is currently at position 48 and IAW CPS 3304.01 Control Rod Hydraulic & Control (RD) perform an extended coupling check. The annunciator will clear for ~ 30 seconds and then alarm again. The ATC operator will then insert rod 52-25 to position 46 which will clear the high temperature condition.
4. Failure of 0RIX-PR001 Ch 15 - Low flow due to sample pump failure	A channel (15) trouble - flow out of limit is received on the MCR AR/PR LAN for 0RIX-PR001 HVAC Exhaust Stack PRM #1. The BOP will identify a low flow condition. The SRO will declare 0RIX-PR001 inoperable and enter ODCM 3.2.2 Conditions A and C. The SRO will direct the BOP to place 0RIX-PR002 in service and exit ODCM actions.
5. Clogged Oil Filter Condensate Booster Pump 'A'	Annunciator 5001-1H CLOGGED OIL FILTER CB PUMP 1A will be received. An Equipment Operator will be dispatched to turn the CUNO filter handle several times in an attempt to clear the alarm, but will be unsuccessful. The SRO will direct the ATC to start a non-running Condensate Booster Pump and secure CB Pump 1A per CPS 3104.01 Condensate/Condensate Booster (CD/CB), section 8.2.2 Starting Additional/Shifting Condensate Booster Pumps.
6. Inadvertent opening of a SRV	Annunciators 5066-5B ADS OR SAFETY RELIEF VALVE LEAKING and 5067-8L SRV MONITORING SYSTEM TROUBLE come in due to SRV 1B21-F041G failing ~ 50 % open. The BOP operator will diagnose and determine the problem is with 1B21-F041G. The SRO will direct the BOP operator to sound the containment evacuation alarm and 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. SRV 1B21-F041G will shut when the first fuse is <u>simulated</u> removed for the associated 'A' solenoid at 1H13-P661.
7. Loss of CY – Rapid Plant Shutdown	The scenario starts with the 'B' CY Pump out of service. In this event the shaft shears on the running CY Pump (0CY01PC). The BOP operator will start the 'A' CY Pump and secure the 'C' CY Pump. However, the 'A' CY pump capacity begins to degrade and annunciator 5014-2B Low Press Cycle Cond Xfer Pump Disch Hdr will be received. Due to the complete loss of CY system pumps, the crew will perform a Rapid Plant Shutdown and attempt to scram the reactor per CPS 3208.01 Cycled / Makeup Condensate (CY/MC).

Narrative Summary (cont.)

Event #	Description
8.	<p>LOCA/RAT Trip/E51-F013 Failure/Div 3 ERAT Feed Breaker Failure/TAF Blowdown</p> <p>When the unit is scrammed in event 7, the Main Generator will trip on reverse power (normal post-scram response). When Generator Output Gas Circuit Breaker (GCB) 4506 opens, a lockout of RAT 'B' results in a loss of non-vital 4160 and 6900 volt power, resulting in a loss of Feedwater and Control Rod Drive as injection sources. Additionally, the ERAT Feed Breaker to 4160V Bus 1C1 fails to close, resulting in de-energization of 4160V Bus 1C1 resulting in loss of HPCS as a feed source, and the RCIC injection valve will fail to open remotely and manually. This will complete the loss of all high pressure feed sources to the RPV. A LOCA will then commence, resulting in a loss of RPV inventory and causing DW pressure to increase. The LOCA will escalate, causing RPV level to fall to TAF, requiring an emergency depressurization to be performed (ADS fails to automatically initiate).</p>
9.	<p>LPCS Fails To Auto Start / LPCS Injection Valve 1E21F005 Fails to Auto Open at 472 psig RPV pressure</p> <p>The Low Pressure Core Spray Pump will fail to auto start when DW pressure reaches 1.68 psig and will have to be manually started (critical task). In addition, 1E21-F005 LPCS Injection Valve will fail to automatically open at 472 psig RPV pressure, requiring the injection valve to be manually opened to recover RPV level above TAF.</p>

EOP
1, 3, 6

Critical tasks:

- RPV-1.1 Enter EOP-3 and blowdown on a failure of the Automatic Depressurization System to automatically initiate within 17.5 minutes of RPV level reaching -145.5 inches.
- RPV-1.2 Maximize injection to restore water level above -162" (TAF). For this scenario, the magnitude of the leak is such that RPV water level will not recover above TAF if LPCS is not manually initiated within 17.5 minutes of RPV level reaching -145.5 inches.

Operator Actions

Event No.(s): 1		Page 1 of 1
Description: Secure DG 1C		
Initiation: Following shift turnover and when directed by the Lead Examiner		
Cues: Directed by SRO		
Time	Position	Applicant's Actions or Behavior
<p style="text-align: center;"><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"> "Expected alarms" will be flagged When the annunciator comes in the operator will announce "Expected Alarm" The annunciator response procedure (ARP) need not be entered since it has already been reviewed in the pre-brief. <p>If a pre-brief was not conducted the operator should perform the following:</p> <ul style="list-style-type: none"> When an annunciator comes in the ARP should be referred to. The annunciator may then be identified as an "Expected Alarm", flagged, and from that point on the ARP need not be referred to. 		
<p><u>Key Parameter Response:</u> None</p> <p><u>Expected Annunciators:</u> None</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> Monitors reactor to ensure operations remain within established bands. Monitors control room panels, notifies the SRO of unusual/unexpected conditions.
	BOP	<ul style="list-style-type: none"> Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <p>Per CPS 9080.03, performs steps 8.2.16.2 – 8.2.16.4 to unload and secure DG 1C from surveillance (DG 1C will trip when the output breaker is opened in step 8.2.16.4):</p> <ul style="list-style-type: none"> Slowly lowers DG 1C load to 100-200 KW using the DG 1C Governor Control Switch. Adjusts DG 1C VARs to ~ 0 KVAR using the DG 1C Voltage Regulator Control Switch. Opens DG 1C Output Bkr, 1E22-S001. Reports DG 1C tripped to the SRO (annunciators 5062-2C, 4C, 5C, 6C).
	SRO	<ul style="list-style-type: none"> Directs actions listed above. Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.
Terminus: DG 1C unloaded and tripped.		

NOTES:

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

Operator Actions

Event No.(s):		2	Page	1	of	1
Description: DG 1C Overspeeds When Unloaded						
Initiation: When DG 1C Output Breaker is opened in Event 1.						
Cues: Annunciators 5062-2C TRIP/LOCKOUT DIESEL GEN 1C, 5062-4C OVERSPEED DIESEL GEN 1C, 5062-5C TRIPPED DIESEL GEN 1C ENGINE, 5062-6C TROUBLE DIESEL GEN 1C						
Time	Position	Applicant's Actions or Behavior				
<p><u>Key Parameter Response:</u> None</p> <p><u>Expected Annunciators:</u> 5062-2C, 5062-4C, 5062-5C, 5062-6C</p> <p><u>Automatic Actions:</u> None</p>						
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Dispatches Equipment Operator to investigate. 				
	BOP	<ul style="list-style-type: none"> • Reports receipt of annunciators 5062-2C, 4C, 5C, and 6C to the SRO. • Refers to ARPs for 5062-2C, 4C, 5C, and 6C. ○ Informs SRO to refer to CPS 4200.01 Loss of AC Power. ○ Informs SRO to refer to ITS 3.8.1, 3.8.2, and 3.8.3. ○ Informs SRO of possible need to notify Ameren of Div 3 DG UNAVAILABILITY. ○ Dispatches Equipment Operator to investigate. 				
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. ○ Enters and executes CPS 4200.01 Loss of AC Power. • Evaluates and enters ITS 3.8.1 AC Sources – Operating, Condition B Required Actions B.1, B.2, B.3.1 (or B.3.2), and B.4. ○ Informs Shift Manager. ○ Contacts Maintenance to investigate. ○ Conducts a brief. 				
Terminus: ITS 3.8.1 evaluated.						

NOTES:

Operator Actions

Event No.(s): 3		Page 1 of 1
Description: CRD high temperature		
Initiation: Following Event 2 and upon direction of the Lead Examiner, insert REMOTE 1 .		
Cues: Annunciator 5006-1G, CRD Hydr Temp Hi		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> CRD 52-25 operating temperature <u>Expected Annunciators:</u> 5006-1G, CRD Hydr Temp Hi <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> • Reports issue to SRO. • Refers to ARP. <ul style="list-style-type: none"> ○ Directs Field Operator to investigate. • Monitors reactor to ensure operations remain within established bands. <p>Per 3304.01, Control Rod Hydraulic & Control (RD):</p> <ul style="list-style-type: none"> • Determines CRD 52-25 is alarming. • Performs extended coupling check of rod 52-25 (10-15 seconds). • Inserts control rod 52-25 to position 46.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels and notifies the SRO of any unusual or unexpected conditions. <ul style="list-style-type: none"> ○ Initiates an Issue Report and contacts the Reactor Engineer regarding the uncoupled rod event.
	SRO	<ul style="list-style-type: none"> • Acknowledges report from ATC. • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. <ul style="list-style-type: none"> ○ Informs Shift Manager. ○ Contacts Maintenance to investigate. ○ Conducts a brief.
Terminus: Control rod 52-25 inserted to position 46. Annunciator 5006-1G clear		

NOTES:

Operator Actions

Event No.(s):	4	Page	1	of	1
Description: Failure of 0RIX-PR001 Ch 15 - Low flow due to sample pump failure					
Initiation: Following Event 3 and upon direction of the Lead Examiner, insert REMOTE 2					
Cues: MCR AR/PR LAN Alarm					
Time	Position	Applicant's Actions or Behavior			
<u>Key Parameter Response:</u> 0RIX-PR001 Channel 15 Flow <u>Expected Annunciators:</u> None <u>Automatic Actions:</u> None					
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. 			
	BOP	<ul style="list-style-type: none"> • Reports issue to SRO. • Refers to the ARP. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. • Determines 0RIX-PR001 sample pump is OFF. <p>Per CPS 3315.03, Radiation Monitoring section 8.4, places 0RIX-PR002 in service :</p> <ul style="list-style-type: none"> ○ Directs Chemistry to perform CY-CL-6954-01, HVAC Stack Effluent-Iodine and Particulate. ○ At Channel Status screen for monitor 0RIX-PR002 ; <ul style="list-style-type: none"> • Starts the pump by selecting ON under Pump Command. • Verifies Channel 14 pressure is indicating < 14.9 psia AND is <u>not</u> DELETED. • Observes sample flow (Ch 15) stabilizes (53-57 LPM). • Places 0RIX-PR002 in Normal by selecting NRML under Stdbby Cmnd. ○ At Channel Status screen for monitor <u>to be placed in STANDBY (0RIX-PR001):</u> <ul style="list-style-type: none"> • Places monitor in STANDBY by selecting STBY under Stdbby Cmnd. ○ Resets/verifies reset all alarms for 0RIX-PR002. • Performs a channel check of monitor 0RIX-PR002 per CPS 9000.01, Control Room Surveillance Log. 			
	SRO	<ul style="list-style-type: none"> • Acknowledge reports from BOP. • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. • Enters ODCM 3.2.2 Required Actions A.1, C.1, C.2.2.1, C2.2.2, D.1, and D.2. ○ Contacts Maintenance to investigate. ○ Informs Shift Manager. ○ Conducts a brief. 			
Terminus: 0RIX-PR001 secured, 0RIX-PR002 started, tech specs evaluated.					

NOTES:

Operator Actions

Event No.(s): 5		Page 1 of 1
Description: Clogged oil filter Condensate Booster (CB) Pump ‘A’		
Initiation: Following Event 4 and upon direction of the Lead Examiner, insert REMOTE 3		
Cues: Annunciator 5001-1H Clogged Oil Filter CB Pump 1A		
Time	Position	Applicant’s Actions or Behavior
<u>Key Parameter Response:</u> <u>Expected Annunciators:</u> 5001-1H Clogged Oil Filter CB Pump 1A <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands <ul style="list-style-type: none"> ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. • Reports issue to SRO. <p>Per CPS 5001-1H, Clogged Oil Filter Condensate Booster Pump 1A:</p> <ul style="list-style-type: none"> ○ Directs Equipment Operator to turn CUNO filter handle several turns for the 1A CB Pump. <p>Per ARP or CPS 3104.01, Condensate/Condensate Booster (CD/CB) step 8.2.2:</p> <ul style="list-style-type: none"> • Starts CB Pump 1C. • Secures CB Pump 1A.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <ul style="list-style-type: none"> ○ Monitors reactor to ensure operations remain within established bands ○ Directs Equipment Operator to turn CUNO filter handle several turns for the 1A CB Pump.
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. <ul style="list-style-type: none"> ○ Informs Shift Manager. ○ Conducts a brief. ○ Contacts Maintenance to investigate.
Terminus: CB Pumps shifted.		

NOTES:

Operator Actions

Event No.(s): 6		Page 1 of 1
Description: Inadvertent opening of a SRV		
Initiation: Following Event 5 and upon direction of the Lead Examiner, insert REMOTE 4		
Cues: Annunciators 5067-8L, SRV Monitoring System Trouble and 5066-5B, ADS Or Safety Relief Valve Lifting		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Reactor Power, RPV Level</p> <p><u>Expected Annunciators:</u> 5067-8L, SRV Monitoring System Trouble and 5066-5B, ADS Or Safety Relief Valve Lifting</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> ○ Reports issue to SRO. ● Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <p>Per CPS 4005.01 Loss Of Feedwater Heating</p> <ul style="list-style-type: none"> ● Reduces RR flow with FCV(s) to restore and maintain power <u>at or below</u> the original power level.
	BOP	<ul style="list-style-type: none"> ○ Reports issue to SRO. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <p>Per CPS 4009.01 Inadvertent Opening Safety/Relief Valves:</p> <ul style="list-style-type: none"> ● Sounds the containment evacuation alarm. ● (Attempts) to SHUT open SRV (F041G) by placing control switch to OPEN, and then back to OFF (from 1H13-P601 <u>or</u> P642 control switches as necessary). ● Removes fuses for the "A" and "B" solenoids (for F041G) at panels 1H13-P661/P662, using Table 1 for fuse location.
	SRO	<ul style="list-style-type: none"> ● Acknowledges report from ATC/BOP. ● Directs actions listed above. ● Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. ● Enters CPS 4009.01 Inadvertent Opening Safety/Relief Valves and CPS 4005.01 Loss Of Feedwater Heating. ○ May review ITS 3.4.4 Safety/Relief Valves (S/RVs) and verify entry conditions are NOT met. ○ Informs Shift Manager. ○ Conducts a brief.
Terminus: SRV F041G is SHUT		

NOTES:

Operator Actions

Event No.(s): 7		Page 1 of 1
Description: Loss of CY – Rapid Plant Shutdown		
Initiation: Following Event 6 and upon direction of the Lead Examiner, insert REMOTE 5		
Cues: Annunciator CPS 5014-2B Low Press Cycle Cond Xfer Pump Disch Hdr		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> None <u>Expected Annunciators:</u> CPS 5014-2D, Low Press Cycled Cond Xfer Pumps Disch Hdr <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> ○ For the Rapid Plant Shutdown, evacuates the containment and makes a plant announcement, "Performing a Rapid Plant Shutdown due to loss of CY Pumps". • When directed by the SRO, performs a Rapid Plant Shutdown IAW CPS 3005.01 Unit Power Changes by lowering core flow using RR FCVs until core flow is ~ 43 mlbm/hr. • Places the mode switch in SHUTDOWN and carries out Scram Choreography by reporting: <ul style="list-style-type: none"> • Rod status is... • Reactor Power is... and trend • Reactor pressure is... and trend • Reactor level is... and trend • Any EOPs with entry conditions (no values required). ○ Stops all running condensate pumps 1CD01PA (B) (C) (D). • Performs EOP actions as directed by SRO.
	BOP	<ul style="list-style-type: none"> • Reports annunciator 5014-2D Low Press Cycled Cond Xfer Pumps Disch Hdr to the SRO. • Refers to the ARP for 5014-2D. <p>Per CPS 5014-2D, Low Press Cycled Cond Xfer Pumps Disch Hdr:</p> <ul style="list-style-type: none"> • Operates CY transfer pumps consistent with system demand to maintain normal header pressure per CPS 3208.01, Cycled/Makeup Condensate (CY/MC) ○ Operator may go to CPS 3208.01 Section 8.2.2 directly or to 8.3.1 which will then direct him/her to section 8.2.2. <p>Per CPS 3208.01, Cycled/Makeup Condensate (CY/MC):</p> <ul style="list-style-type: none"> • Starts the 'A' CY Pump: <ul style="list-style-type: none"> • Observes an increase in Cyc Cond Xfer Pmp Disch Hdr Pressure followed by a decrease in Cyc Cond Xfer Pmp Disch Hdr Pressure on 1H13-P870-5014. • Reports annunciator 5014-2D Low Press Cycled Cond Xfer Pumps Disch Hdr has been received again. • Reports loss of CY to the SRO. ○ For the Rapid Plant Shutdown, evacuates the containment and makes a plant announcement, "Performing a Rapid Plant Shutdown due to loss of CY Pumps". • Carries out Scram Choreography by reporting: <ul style="list-style-type: none"> • Reactor Scram • MDRFP may start • Evacuate the RCIC room • Evacuate the Containment • Determines rod status and reports it to the SRO • Performs EOP actions as directed by SRO.
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations standards and approved procedures. • Per CPS 3005.01 Unit Power Changes, directs ATC to perform a Rapid Plant Shutdown or Reactor Scram when it has been determined that CY has been lost. ○ Directs ATC to stop all running condensate pumps 1CD01PA (B) (C) (D)

		<ul style="list-style-type: none"> • Enters and executes CPS 4100.01 Reactor Scram. • Carries out Scram Choreography by performing an Update: <ul style="list-style-type: none"> • Update: • Entering EOP-1 • Entering the Scram Off-Normal • End of Update
Terminus: Reactor has been scrambled and scram actions are in progress.		

NOTES:

Operator Actions

Event No.(s): 8, 9		Page 1 of 2
Description: LOCA/RAT trip/E51-F013 Failure/Div 3 ERAT Feed Breaker Failure/TAF Blowdown/LPCS Fails to Auto Start		
Initiation: Triggered by the Main Generator trip in Event 7.		
Cues: Multiple annunciators on 1H13-P680, 1H13-P870, and 1H13-P601, rising DW pressure and temperature indications		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Rising DW temperature and pressure, loss of 4160 and 6900 V Non-vital busses.</p> <p><u>Expected Annunciators:</u> Multiple annunciators on 1H13-P680, 1H13-P870, and 1H13-P601</p> <p><u>Automatic Actions:</u> ECCS systems and DGs start on high DW pressure (1.68 psig)</p>		
[CT] [CT]	ATC	<ul style="list-style-type: none"> ○ Reports trip of the RAT transformers/loss of non-vital AC power. ○ Reports that the RCIC Injection valve failed to open remotely and manually. Performs EOP actions as directed by SRO. ● Performs EOP actions as directed by SRO. ○ Reports that the LPCS Pump failed to automatically start and manually starts the pump. ○ Coordinates with BOP operator to monitor and control RPV level and pressure. ○ Reports failure of ADS to automatically initiate when RPV level reaches Level 1 (-145.5"). <p>Per EOP-3, Emergency RPV Depressurization (may be performed by BOP):</p> <ul style="list-style-type: none"> ○ When TAF (-160 inches) is reached, initiates ADS to Blowdown the reactor within 17.5 minutes after RPV level reaches -145.5" (Level 1) when directed by the SRO. ○ Maximizes ECCS injection (including starting LPCS Pump) to restore RPV water level above TAF within 17.5 minutes after RPV level reaches -145.5" (Level 1).
[CT] [CT]	BOP	<ul style="list-style-type: none"> ○ Reports trip of the RAT transformers/loss of non-vital AC power. ○ Performs a manual Group 1 Isolation. ○ Reports that the RCIC Injection valve failed to open remotely and manually. ● Performs EOP actions as directed by SRO. ○ Reports that the LPCS Pump failed to automatically start and manually starts the pump. ● Starts Containment Spray, as directed by the SRO. ● Secures Containment Spray when RPV water level is ≤ -100 inches WR. ○ Reports failure of ADS to automatically initiate when RPV level reaches Level 1 (-145.5"). <p>Per EOP-3, Emergency RPV Depressurization (may be performed by BOP):</p> <ul style="list-style-type: none"> ○ When TAF (-160 inches) is reached, initiates ADS to Blowdown the reactor within 17.5 minutes after RPV level reaches -145.5" (Level 1) when directed by the SRO. ○ Maximizes ECCS injection (including starting LPCS Pump and opening 1E12-F005) to restore RPV water level above TAF within 17.5 minutes after RPV level reaches -145.5" (Level 1). ● Verifies ADS actuation using the following indications: <ul style="list-style-type: none"> ○ SPDS ○ DCS Display 122 (2H) [Acoustic Monitor Input] ○ DCS Display 186 (7B) ['A' Solenoid Input] ○ 1H13-P601/P642 Solenoid Indicator Lights ○ 1H13-P866, Valve Flow Monitor Control Panel ○ 1H13-P614, ADS Safety Valve Temperature recorder 1B21-R614 ○ Indirect indication via changes in RPV pressure, RPV level, MSL flows & suppression pool temperatures.

Event No.(s):		8, 9	Page	2	of	2
[CT] [CT]	SRO	<ul style="list-style-type: none"> Acknowledges reports from ATC/BOP. Directs actions listed above. Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. Enters and executes the following off-normal procedures: <ul style="list-style-type: none"> CPS 4001.01 Reactor Coolant Leakage CPS 4001.02 Automatic Isolation Enters and executes EOP-1 RPV Control. Enters and executes EOP-6 Primary Containment Control Enters and executes EOP-3 Emergency RPV Depressurization (Blowdown) when RPV Level reaches TAF. When TAF (-160 inches) is reached, directs: <ul style="list-style-type: none"> initiating ADS to Blowdown the reactor within 17.5 minutes after RPV level reaches -145.5" (Level 1). maximizing ECCS injection (including starting LPCS Pump and opening 1E12-F005) to restore RPV water level above TAF within 17.5 minutes after RPV level reaches -145.5" (Level 1). 				
		Terminus: The scenario can be terminated when a blowdown has been initiated and RPV level has being raised above TAF.				

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. Reset to IC-221 (PW 76319) @ 78% Power. If this is the first reset after swapping simulator loads, reset the IC twice.
4. Load the lesson plan for this scenario.
5. Verify the following commands are active:
 - **A05_A02_A0508 TVM 5066-8A ADS B Out of Service (OFF)**
 - **A05_A02_A0608 TVM 5067-8A ADS A Out of Service (OFF)**
 - **A05_A02_A13DS47_1 ADS A&E Inhibit Wht Light (OFF)**
 - **A05_A02_A13DS48_1 ADS B&F Inhibit Wht Light (OFF)**
 - **A05_A02_A13S63 ADS A&E Inhibit PB (Inhibited)**
 - **A05_A02_A13S64 ADS B&F Inhibit PB (Inhibited)**
 - **YARIMVFP_2 E51F013 (immediate) Fail-To Position (FV = 0)**
 - **YP_XMFTB_4106 LPCS Fail to Auto Start**
 - **Ip11acld001fsp=True (LPCS Injection Valve Auto Open Failure)**
6. Place simulator in RUN.
7. Turn on and advance recorders.
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 29 is in progress – Gang 10A is at Position 10.
12. Make sure Sequence A is selected.
13. Make sure Individual Drive Mode is selected on the OCM.
14. Remove EST Tags from the following control switches:
 - 1H13-P877-5014 - MC Pump 'B'
 - 1H13-P877-5016 - 1TD004A RFPT 1A HP Stop Vlv Before SDV
 - 1H13-P877-5019 - 1B21-BSFV-1 Aux Stm to MSR 1B Inlet Vlv
 - 1H13-P877-5019 - 1GS02CB SPE Blower 1B2
 - 1H13-P800-5042 - 0VQ03CC DW Prg Low Flow Exh Fan
 - 1H13-P801-5050 - 1VY03C RHR Hx Rm A Sply Fan
 - 1H13-P801-5050 - 1VY04C RCIC Pmp Rm Sply Fan
 - 1H13-P801-5050 - 0VC69Y Locker Rm Exh Fan 11C Isol Dmpr
 - 1H13-P801-5052 - 0VC70Y Locker Rm Exh Fan 11C Isol Dmpr
 - 1H13-P601-5064 - 1SX011A Div 1 Cross Tie Valve
 - 1H13-P601-5065 - 1SX011B Div 2 Cross Tie Valve
 - 1H13-P601-5067 - 1B21-F067B MSL B Outbd MSIV Before Seat Drain Vlv
15. Procedures that are expected to be used during this scenario are:
 - CPS 9080.03 DG 1C Operability – Manual and Quick Start Operability (provided in the Crew Docs binders)
 - CPS 5062 Annunciator Response Procedures
 - CPS 4200.01 Loss of AC Power
 - ITS 3.8.1 AC Sources - Operating
 - CPS 5006 Annunciator Response Procedures
 - CPS 3304.01 Control Rod Hydraulic and Control (RD)
 - CPS 3304.02 Rod Control and Information System (RC&IS)

- CPS 5140 Annunciators (MCR AR/PR LAN)
- CPS 3315.03 Radiation Monitoring (AR/PR)
- ODCM 3.9.2 Radioactive Gaseous Effluent Monitoring Instrumentation
- CPS 5001 Annunciator Response Procedures
- CPS 3104.01 Condensate/Condensate Booster (CD/CB)
- CPS 5066 Annunciator Response Procedures
- CPS 5067 Annunciator Response Procedures
- CPS 4005.01 Loss of Feedwater Heating
- CPS 4009.01 Inadvertent Opening Safety/Relief Valves
- ITS 3.4.4 Safety/Relief Valves (S/RVs)
- CPS 5014 Annunciator Response Procedures
- CPS 3208.01 Cycled/Makeup Condensate (CY/MC)
- CPS 3005.01 Unit Power Changes
- CPS 4100.01 Reactor Scram
- EOP-1 RPV Control
- CPS 4001.01 Reactor Coolant Leakage
- CPS 4001.02 Automatic Isolation
- EOP-6 Primary Containment Control
- EOP-3 Emergency RPV Depressurization

16. Hang OOS tags on: CY Pump 'B' (0CY01PB)
17. Identify T/S issues associated with OOS and turnover: ITS 3.8.1 AC Sources – Operating, Condition B (with Division 3 DG speed droop set to 50%).
18. Operating Equipment: None
19. Marked up copies: CPS 9080.03 (all step up to and including 8.2.16.1)
20. Verify simulator conditions match the turnover.

Event Triggers and Role Play

Event #

1. **Secure DG 1C**
 - a. Event Trigger – None
 - b. Role Play – **Field Operator**: If the BOP reports commencing to unload DG 1C, acknowledge the report.
2. **DG 1C Overspeeds When Unloaded**
 - a. Event Trigger - None
 - b. Role Play – **Field Operator**: If requested to report local panel 1E22-S001B status following the DG 1C trip, report the following:
 - (1) Annunciator 5286-1B Overspeed locked in
 - (2) Annunciator 5286-2C Engine Tripped locked in
 - (3) Both DG 1C 86 lockout relays tripped
3. **CRD high temperature**
 - a. Event Trigger – Following Event 2 and when directed by the Lead Examiner, **Activate Remote 1** and verify the following command(s):
 - (1) **A02_A05_01_7_TVM=2** (Annunciator 5006-1G CRD Hydr Temp Hi).
 - b. Role play:
 - (1) **Field Operator** (if requested):
 - a) Report, “CRD 52-25 is alarming at 255°F and trending up at 1°F every five minutes. All other CRD temperatures appear to be normal”
 - b) After rod 52-25 has been repositioned to position 46, report “CRD 52-25 temperature is ~ 240°F and slowly lowering.
4. **Failure of 0RIX-PR001 Ch 15 - Low flow due to sample pump failure**
 - a. Event Trigger - Following Event 3 and when directed by the Lead Examiner, **Activate Remote 2** and verify the following command(s):
 - (1) **CAM0PR001IA_PUMP to 1.** (PR001 Sample Pump Status)
 - (2) **CAM0PR001TV_VALUE15 to 0.** (PR001 Ch 15 input)
 - b. Role play
 - (1) **Field Operator/Chemistry** (if directed to check the status of the sample pump for 0RIX-PR001A) – “The pump is not running. No other abnormalities exist locally at the PRM.”
5. **Clogged oil filter Condensate Booster Pump ‘A’**
 - a. Event Trigger - When directed by the Lead Examiner, **Activate Remote 3** and verify the following command(s):
 - (1) **A01_A02_01_8_TVM Steady**
 - b. Role play
 - (1) **Field Operator** (If requested):
 - a) (when directed to turn the handle on the CB 1A CUNO Filter) – acknowledge request. Wait ~ one minute and report “I turned the handle on Condensate Booster Pump 1A CUNO Filter several times”.
 - b) (if asked for CB Pump ‘A’ oil pressure) – report “13 psig and slowly lowering”.
 - c) (when directed to perform startup checks for the standby CB pump) – report “Pre-starts are complete”.
 - d) (when directed for local indications during prestart checks) – report “Lube oil pressure is > 8 psi and lube oil temperature is >75°F”.
 - e) (when asked if CB Pump C is operating normally locally) – report “CB Pump C is running normally”.

6. **Inadvertent opening of a SRV**

- a. Event Trigger – Following Event 5 and when directed by the Lead Examiner, **Activate Remote 4** and verify the following command(s):
 - (1) **YPXMALSE_77 to 50** (F041G MS Relief Failure)
- b. Role play
 - (1) **Booth Operator** (if requested by BOP and not performed at the V-Panel):
 - a) cycle the Div 2 CS for SRV 41G to Open and then Off - Release **41G P642 CS to Open / Off** (YP_HP101_7 Open and YP_HP101_7 Off)
 - b) remove fuses for F041G 'A' Solenoid – Release **41G 'A' Fuse Removed** (YP_XREMT_371 = OFF)
 - c) remove fuses for F041G 'B' Solenoid – Release **41G 'B' Fuse Removed** (YP_XREMT_387 = OFF)

7. **Loss of CY – Rapid Plant Shutdown**

- a. Event Trigger - Following Event 6 and when directed by the Lead Examiner, **Activate Remote 5** and verify the following command(s):
 - (1) **YFFWPPSS_11**. (CY Pump C Shaft Shear)
 - (2) **YAFWPPDE_9**. (CY Pump A Pumping Efficiency)
- b. Role play
 - (1) **Field Operator:**
 - a) When directed to check operation of CY Pump 'C' – “The motor is running, but the pump shaft is not turning, and the motor is making noise and vibrating.”
 - b) When directed to perform CY Pump 'A' prestart checks – “CY Pump 'A' prestart checks are complete”. When directed to Shut/verify shut 0CY004A CY Pump 'A' Discharge – “0CY004A is Shut”. When directed to slowly open 0CY004A CY Pump 'A' Discharge – “0CY004A is Open”.
 - c) When directed to check operation of CY Pump 'A' – “CY Pump 'A' discharge pressure indicates 30 psig locally. The pump is not making any unusual noises. There is no evidence of leakage locally.”
 - (2) **ROC Operator:**
 - a) When informed that the CY system has been lost (3208.01 step 8.3.1.5 - acknowledge report.
 - b) If directed to check for indications of CY leakage – “There are no indications of increased inleakage in the ROC.”

8. **LOCA/RAT trip/E51-F013 Failure/Div 3 ERAT Feed Breaker Failure/TAF Blowdown**

- a. Event Trigger – triggered by GCB 4506 opening during Event 7. Verify the following command(s):
 - (1) **RAT_B_OVERCURRENT**
 - (2) **ED17B221C1FO 1ETR4C1 Bkr Tripped**
 - (3) **YPXMALSE_511 RR03C Lower Plenum Leak**
- b. Role play:
 - (1) **Maintenance** (after 2 minutes from scram announcement) – report to the MCR as IMD.
 - (2) **Field Operator:**
 - a) (If requested to check the status of Div 3 ERAT feeder breaker) – “The overcurrent relay is tripped”.
 - b) (If requested to manually open the RCIC injection valve) – “Heading to WEC for a brief”.

9. **LPCS Fails to Auto Start / LPCS Injection Valve 1E21F005 Fails to Auto Open at 472 psig RPV pressure**

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

Turnover

1. **Day of week and shift**
 - Today day shift
2. **Weather conditions**
 - Thunderstorms are expected in the area within the next hour.
3. **Plant power level**
 - The plant is in Mode 1, operating at ~ 78% power to support performance of CPS 9031.07 Main Turbine Control Valve Tests on the next shift.
 - RR Pumps A and B are operating in fast speed with FCVs at 53%/54%. 2714 MWt, 872 MWe, 71.02 Mlbm/hr Core Flow.
 - Control rods - Step 29 / Gang 10A is at position 10.
4. **Thermal Limit Problems/Power Evolutions**
 - Power will be maintained at 78% throughout the shift.
 - CPS 3005.01 Unit Power Changes section 8.2 Power Decrease in progress. Step 8.2.5 is complete.
 - On Step 2 of ReMA C16-001
 - RE and Rod Verifier are available on request.
5. **LCO's in effect**
 - ITS 3.8.1 AC Sources – Operating, Condition B (with Division 3 DG speed droop set to 50%).
6. **Surveillances in progress**
 - Div 3 DG has been operating at full load for > 60 minutes IAW CPS 9080.03 DG 1C Operability – Manual and Quick Start Operability step 8.2.16.1.
 - CPS 9082.01 Offsite Source Power Verification was completed one hour ago.
7. **Status of Tagged Out Equipment**
 - CY Pump 'B' (0CY01PB) is OOS for maintenance. Not expected back this shift.
8. **Previous Shift Evolutions completed**
 - Power was lowered to 78%. Div 3 DG was started and paralleled to RAT 'B' IAW CPS 9080.03 DG 1C Operability – Manual and Quick Start Operability.
 - CPS 9082.01 Offsite Source Power Verification was completed one (1) hour ago.
9. **Evolutions planned for the shift**
 - Unload DG 1C and complete CPS 9080.03 DG 1C Operability – Manual and Quick Start Operability starting at step 8.2.16.2.
10. **Risk Levels**
 - Green
 - Protected Equipment: FC 'B'
11. **Dose equivalent Iodine 131**
 - reading 1.5 E-6 µcuries per gram

Exelon Nuclear

ILT 15-1 NRC Exam

**Scenario Number:
NRC Exam Scenario 2**

Revision Number: 1

Date: 10/28/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/22/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/28/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</u> Date

Appendix D

Scenario Outline

Form ES-D-1

Facility: <u>Clinton Power Station</u>	Scenario No.: <u>2</u>	Operating Test No.: <u>2017-301</u>
Examiners: _____ _____	Operators: _____ _____	
<p>Initial Conditions:</p> <ul style="list-style-type: none"> Mode 1 Rx Power at 99%. Weather conditions are calm and clear. <p>Turnover:</p> <ul style="list-style-type: none"> Priorities for the shift are as follows: <ul style="list-style-type: none"> Shift Generator Stator Cooling Pumps IAW CPS 3110.01 01Generator Stator Cooling (GC) section 8.2.4 Shifting GC Water Pumps (MCR) to support upcoming corrective maintenance on GC Pump B. Maintain power at 99% throughout the shift. 		

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N-BOP	Shift Generator Stator Cooling (GC) Pumps.
2	YP_XMFTB_4102	I-BOP TS-SRO	Spurious HPCS auto initiation
3	A02_A01_02_10_TVM	C-ATC TS-SRO	RR Pump B high vibration
4	N/A	R-ATC	Reduce power with Control Rods
5	YP_XMFTB_3917	C-BOP	CCW Pump 1A trip
6	YP_XMFTB_4965 YP_XMFTB_4963	C-ATC	RR Pump A trip/ATWS
7	YPXFALSE_256 0.08% YAMSSIFP_4 YVMSSILK_8 YPXFALSE_256 0.5%	M-All	Unisolable MSL 'D' Leak / Multiple Secondary Containment Areas above max safe temperatures requiring blowdown
8	YP_XREMT_739	C-All	MSIVs fail to close on Group 1 isolation signal

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

Scenario No.: 2

Operating Test No.: 2017-301

Narrative Summary

Event #	Description
1. Shift Generator Stator Cooling (GC) Pumps	The BOP will shift GC Water Pumps IAW CPS 3110.01 Generator Stator Cooling (GC) section 8.2.4 Shifting GC Water Pumps (MCR) to support upcoming maintenance on 1GC01PB.
2. Spurious HPCS auto initiation	High Pressure Core Spray (HPCS) initiates with no operator action. The following annunciators are received: 5062-3C RUNNING DIESEL GEN 1C, 5062-4E HPCS PUMP AUTO START, 5064-1B AUTO START SSW PUMP 1C and 5064-4B AUTO START DG FUEL OIL XFER PUMP 1C. IAW CPS 3309.01 High Pressure Core Spray (HPCS), the crew will verify by at least <u>two</u> independent indications that misoperation in automatic is confirmed or adequate core cooling is assured. Once confirmed, the SRO will direct the BOP operator to secure HPCS. Technical Specification LCO 3.5.1 Actions B.1 and B.2 will be evaluated requiring verification by administrative means that the RCIC system is operable when required AND the HPCS system is restored to operable status within 14 days.
3. RR Pump B high vibration	Annunciator 5003-2K RECIRC PMP B MTR VIBR HI is received. BOP will determine 'B' RR Pump vibration levels are ≥ 20 mil P-P 'steady' on both probes. ATC will perform RR Loop 'B' Emergency Shutdown. SRO will enter CPS 4008.01 Abnormal Reactor Coolant Flow, CPS 4002.01 Abnormal RPV Level/Loss of Feedwater At Power and ITS LCO 3.4.1 B.1 and C.1.
4. Reduce power with Control Rods	Due to the RR Pump 'B' Emergency Loop Shutdown and using CPS 3005.01 Unit Power Changes (Figure 1: Stability Control & Power/Flow Operating Map), the crew will identify a MELLA Limit violation. Per CPS 3005.01 Unit Power Changes, section 6.5 MELLA Limit Operational Concerns, the SRO will enter Action A.1 for ITS 3.2.1, 3.2.2 and 3.2.3 to restore power distribution limits within 2 hours and direct the ATC to promptly lower power via reverse rod sequence or CRAM RODS. Additionally, the SRO may direct ATC to lower reactor power to $\leq 58\%$ RTP IAW TS LCO 3.4.1 B.1 based on having one recirculation loop in operation.
5. CCW Pump 1A trip	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 are received. BOP will observe that CCW Pump 1A has tripped, review the ARP and start a standby CCW pump.
6. RR Pump A trip/ATWS	Annunciator 5003-1F RECIRC PMP A MTR BRKR Trip is received due to a trip of the 'A' RR Pump. With no RR Pumps operating with the mode switch in RUN, the ATC will insert a manual scram (IAW CPS 4008.01 Abnormal Reactor Coolant Flow) and shut 1B33-F023A RR Pmp Suction Vlv. When the mode switch is placed in shutdown, the reactor will fail to scram requiring entry into EOP-1 RPV Control and then transition 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 RPV Control.
7. Unisolable MSL 'D' Leak / Multiple Secondary Containment Areas above max safe temperatures requiring blowdown	Multiple annunciators are received due to an unisolable MSL 'D' leak into the Aux Building Steam Tunnel (secondary containment). The SRO will enter 4001.01 Reactor Coolant Leakage off-normal and EOP-8 Secondary Containment Control. Temperatures will continue to rise in the Secondary Containment, and when two or more areas exceed max safe temperatures, the SRO will enter EOP-3 Emergency RPV Depressurization and will direct a blowdown to be performed.
8. MSIVs fail to close on Group 1 isolation signal	Condenser vacuum will continue to degrade causing the Main Turbine and the TDRFPs to trip. The MSIVs fail to automatically close but can be manually closed from the MCR.

EOP

1, 3, 8

Critical tasks:

- RPV-5.1/6.1 ATC/BOP inserts control rods and/or starts Standby Liquid Control Pumps to shutdown the reactor.
- SC-1.2 SRO enters EOP-3 and performs a blowdown when 2 or more areas are above the max safe value of the same parameter (Table T, U, W), and a Primary System is discharging into the Secondary Containment, which cannot be isolated. If the crew Anticipates Blowdown using bypass valves, and in doing so two areas do not reach a max safe condition, then this critical task is considered to be met. (PRA)

Operator Actions

Event No.(s): 1		Page 1 of 1
Description: Shift Generator Stator Cooling (GC) Pumps		
Initiation: Following shift turnover and when directed by the Lead Examiner		
Cues: Directed by SRO		
Time	Position	Applicant's Actions or Behavior
<p style="text-align: center;"><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"> • "Expected alarms" will be flagged • When the annunciator comes in the operator will announce "Expected Alarm" • The annunciator response procedure (ARP) need not be entered since it has already been reviewed in the pre-brief. <p>If a pre-brief was not conducted the operator should perform the following:</p> <ul style="list-style-type: none"> • When an annunciator comes in the ARP should be referred to. • The annunciator may then be identified as an "Expected Alarm", flagged, and from that point on the ARP need not be referred to. 		
<p><u>Key Parameter Response:</u> GC Pump indicator lights on 1H13-P870-5017</p> <p><u>Expected Annunciators:</u> 5017-5A Auto Start Stator Cooling Water Pump (when the standby pump auto start feature is tested)</p> <p><u>Automatic Actions:</u> GC Pump 1B will auto start when the when the standby pump auto start feature is tested.</p>		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Performs Plant Announcement.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. ○ Performs Plant Announcement. <p>IAW CPS 3110.01 Generator Stator Cooling (GC) section 8.2.4:</p> <ul style="list-style-type: none"> • BOP obtains authorization from the Control Room Supervisor to perform critical steps ({CS}) before performing CPS 3110.01 Section 8.2.4. • {CS} Starts standby GC Pump 1A (1GC01PA). • {CS} Stops GC Pump 1B (1GC01PB). Allows the control switch to spring return to AUTO. • Tests the standby GC pump auto start by: <ul style="list-style-type: none"> • Depressing the Generator Cooling Water Pump Test push-button. • Verify the AUTO START STATOR COOLING WATER (5017-5A) annunciator illuminates. • {CS} Places control switch for the GC Pump 1B (1GC01PB) in the STOP position, AND lets it spring return to AUTO.
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Authorizes BOP to perform the critical steps contained in CPS 3110.01 Section 8.2.4 (denoted by {CS}). • Provides direct oversight of the GC Pump shift. • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.
Terminus: GC Pumps shifted and the auto start feature of the standby GC pump has been tested.		

NOTES:

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

Operator Actions

Event No.(s): 2		Page 1 of 1
Description: Spurious HPCS Auto Initiation		
Initiation: Following Event 1 and upon direction of the Lead Examiner, insert REMOTE 1 .		
Cues: Annunciator 5062-4E, HPCS Pump Auto Start		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> None <u>Expected Annunciators:</u> Multiple annunciators <u>Automatic Actions:</u> DG 1C Auto Starts, HPCS To CNMT Outbd Isln Valve (1E22-F004) OPEN		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Performs Plant Announcements. ○ Dispatches an Equipment Operator to investigate.
	BOP	<ul style="list-style-type: none"> • Reports issue to SRO. • Refers to ARPs. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Performs Plant Announcements. ○ Dispatches an Equipment Operator to investigate. <p>Per CPS 3309.01 High Pressure Core Spray (HPCS):</p> <ul style="list-style-type: none"> • Verifies by at least <u>two</u> independent indications that: <ul style="list-style-type: none"> • Misoperation in automatic is confirmed, <u>or</u> • Adequate core cooling is assured. • Performs shutdown of HPCS (Initiation Signal Present): <ul style="list-style-type: none"> • Shuts 1E22-F004 HPCS To CNMT Outbd Isln Valve. • Stops HPCS Pump, 1E22-C001. ○ Verifies 1E22-F012, HPCS Min Flow To Suppr Pool shuts. ○ Verifies HPCS Pmp Rm Sply Fan, 1VY08CA stops. ○ Verifies HPCS Pmp Rm Sply Fan, 1VY08CB stops.
	SRO	<ul style="list-style-type: none"> • Acknowledges report from BOP. • Directs actions listed above. • Enters and executes CPS 4002.01 Abnormal RPV Level/Loss Of Feedwater At Power ○ Establishes reactor water level as a critical parameter and directs ATC to scram the reactor if RPV water level reaches 48 inches and rising. • Evaluates and enters TS 3.5.1 Action B.1 and B.2. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. ○ Contacts Maintenance to investigate. ○ Informs Shift Manager. • Conducts a brief.
Terminus: HPCS is secured and Technical Specifications evaluated.		

NOTES:

Operator Actions

Event No.(s): 3		Page 1 of 1
Description: RR Pump 'B' High Vibration		
Initiation: Following Event 2 and upon direction of the Lead Examiner, insert REMOTE 2 .		
Cues: Annunciator 5003-2K Recirc Pmp B Mtr Vibr Hi		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> RR Pump Vibration Indications</p> <p><u>Expected Annunciators:</u> 5003-2K Recirc Pmp B Mtr Vibr Hi</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> • Reports issue to SRO. • Refers to ARPs. <p>Per 5003-2K Recirc Pmp B Mtr Vibr Hi and CPS 3302.01 Reactor Recirculation (RR):</p> <ul style="list-style-type: none"> • Performs emergency loop shutdown of RR Pump B. ○ Depresses P680 RR Pump B Vibration reset button. <p>Per CPS 4008.01 Abnormal Reactor Coolant Flow:</p> <ul style="list-style-type: none"> ○ Monitors RR Pump seal pressure for signs of degradation • Checks operation on the Power to Flow map • Notifies SRO MELLLA limit has being exceeded • Determines flow transient has resulted in entry into the OPRM Enable Region by observing the status of annunciator 5006-3D <p>Per CPS 4002.01 Abnormal RPV Level/Loss of Feedwater at Power:</p> <ul style="list-style-type: none"> • Per 3302.01 Reactor Recirculation (RR) Appendix A: RR Loop/Pump Shutdown and Isolation Hard Card: • Lowers RPV water level setpoint to ~ 31 inches • Trips RR Pump B by opening RR 3B, 4B, or 5B (any one of the three as a minimum) • Shuts 1B33-F023B, Pmp Suction Vlv
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. ○ Checks RR Vibration Monitor and determines RR Pump B Vibration is ≥ 20 mil P-P 'steady' on both probes ○ Makes plant announcement ○ Demands an official 3D Monicore Case
	SRO	<ul style="list-style-type: none"> • Acknowledges report from ATC. • Directs actions listed above • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. • Reviews and enters Tech Spec 3.4.1 B.1 and C.1 • Enters CPS 4008.01 Abnormal Reactor Coolant Flow • Enters CPS 4100.02 Core Stability Control <ul style="list-style-type: none"> • Directs ATC to scram the reactor if the restricted zone is entered or if core instabilities are observed. • Enters CPS 4002.01 Abnormal RPV Level / Loss of Feedwater At Power <ul style="list-style-type: none"> • Directs ATC to monitor RPV Level and to scram if RPV level approaches 52" (Level 8). ○ Directs lowering power below the MELLLA limit using reverse rod sequence or CRAM Rods within 15 minutes after plant is stable to be in compliance within 2 hours. • With the MELLLA Limit exceeded, enters ITS LCOs 3.2.1, 3.2.2, AND 3.2.3 ○ Informs Shift Manager. ○ Conducts a brief.
Terminus: RR Pump B secured and Tech Spec review complete.		

NOTES:

Operator Actions

Event No.(s): 4		Page 1 of 1
Description: Reduce power with Control Rods		
Initiation: After RR Pump B has been secured		
Cues: Directed by SRO		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> Reactor Power, Rod Drive Parameters (flows, dP), Control Rods move as expected <u>Expected Annunciators:</u> None <u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> • Per CPS 3304.02 Rod Control and Information System (RC&IS), NF-CL-721-1002 Control Rod Move Sheets, and CPS 3005.01 Unit Power Changes section 8.2: <ul style="list-style-type: none"> • Reduces reactor power by inserting control rods to get below the MELLLA limit (< 67%). ○ Reduces reactor power to < 58% using control rod insertion when directed by SRO • Monitors reactor to ensure operations remain within established bands. <ul style="list-style-type: none"> ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <ul style="list-style-type: none"> ○ Monitors reactor to ensure operations remain within established bands.
	SRO	<ul style="list-style-type: none"> • Directs actions listed above • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. • 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"> ○ Notifies Shift Manager ○ Notifies TSO ○ Conducts a brief.
Terminus: Clearly observable plant response from change in power level.		

NOTES:

Operator Actions

Event No.(s): 5		Page 1 of 1
Description: CCW Pump 1A Trip		
Initiation: Following Event 4 and upon direction of the Lead Examiner, insert REMOTE 3		
Cues: Annunciator 5040-1B Auto Trip Pump/Motor alarm.		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Lowering CCW System Header Pressure</p> <p><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</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies SRO of unusual/unexpected conditions. ○ Makes plant announcement. ○ Dispatches EO to investigate CCW Pump trip. ○ Monitors CCW Storage Tank Level. ○ Monitors RR Pump motor and seal parameters.
	BOP	<ul style="list-style-type: none"> • Reports issue to SRO. • Refers to ARP. <p>Per 5040-1B Auto Trip Pump/Motor alarm:</p> <ul style="list-style-type: none"> • Determines CCW Pump A has tripped. • Determines CCW Pump B is running. • Starts CCW Pump C. ○ Monitors CCW Storage Tank Level. ○ Dispatches EO to investigate.
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from BOP. ○ Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. ○ Informs Shift Manager. ○ Contacts Maintenance to investigate. ○ Conducts a brief.
Terminus: CCW Pump 'B' running.		

NOTES:

Operator Actions

Event No.(s): 6		Page 1 of 2
Description: RR Pump 'A' Trip / ATWS		
Initiation: Following Event 5 and upon direction of the Lead Examiner, insert REMOTE 4		
Cues: Annunciator 5003-1F RECIRC PMP A MTR BRKR TRIP		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Reactor Power, RPV Level</p> <p><u>Expected Annunciators:</u> 5003-1F RECIRC PMP A MTR BRKR TRIP</p> <p><u>Automatic Actions:</u> None</p>		
[CT]	ATC	<ul style="list-style-type: none"> ○ Reports issue to SRO. ● Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ● Determines that no Recirculation Pumps are running with the Reactor Mode Switch in RUN (entry condition for CPS 4008.01 Abnormal Reactor Coolant Flow). <p>Per CPS 5003-1F RECIRC PMP A MTR BRKR TRIP, CPS 4008.01 Abnormal Reactor Coolant Flow and CPS 4100.01 Reactor Scram:</p> <ul style="list-style-type: none"> ● Places the mode switch in SHUTDOWN. ● Determines that Shutdown Criteria is <u>not</u> met. ● Arms and depresses Manual Scram Pushbuttons. ● [CT] Initiates ARI. ● Determines Shutdown Criteria <u>is</u> met. ● Carries out Scram Choreography by reporting: <ul style="list-style-type: none"> ● Rod status is... ● Reactor power is... and trend ● Reactor pressure is... and trend ● Reactor level is... and trend ● Manual Scram and ARI have been initiated ● Any EOPs with entry conditions (no values required) ● <u>IF</u> RPV level is rising with 2 feed pumps operating, <u>THEN</u> Secures/verifies secured 1 Feed Pump and controls RPV water level between Level 3 and Level 8. ○ Verifies Turbine and Generator trip when required. ○ Shuts 1B33-F023A RR Pump A Suction Valve. ● Stabilizes Reactor Pressure 800 to 1065 or per directed band. ● Performs EOP actions as directed by SRO.
	BOP	<ul style="list-style-type: none"> ● Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. <p>Per CPS 4100.01 Reactor Scram:</p> <ul style="list-style-type: none"> ● Carries out Scram Choreography by: <ul style="list-style-type: none"> ● Making an Announcement <ul style="list-style-type: none"> ■ Reactor Scram ■ Motor Driven Reactor Feed Pump may start ■ Evacuate the RCIC room ■ Evacuate the Containment ■ Determines Rod status and reports shutdown criteria met to the SRO.

[CT]	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. • Enters and executes CPS 4008.01 Abnormal Reactor Coolant Flow and CPS 4100.01 Reactor Scram <p>Enters CPS 4100.01 Reactor Scram:</p> <ul style="list-style-type: none"> ○ Directs ATC to scram the reactor. • Carries out Scram Choreography by performing an Update: <ul style="list-style-type: none"> • Update • Entering EOP-1 • Transitioning to EOP-1A • Entering the Scram Off-Normal • End of Update <p>Enters EOP-1A, ATWS RPV Control, and directs the following:</p> <ul style="list-style-type: none"> ○ Inhibit ADS. • [CT] Verifies ATC manually initiates ARI. • Determines Shutdown Criteria is met when ARI pushbuttons have been armed and depressed and transitions from EOP-1A back to EOP-1. <p>Directs / Verifies performance of appropriate actions per EOP-1 RPV Control:</p> <ul style="list-style-type: none"> • Control of RPV pressure between 800 to 1065 psig with Bypass Valves or SRVs. • Control of RPV water level between Level 3 to Level 8 by using Preferred Injection Systems. ○ Informs Shift Manager. ○ Conducts a brief.
Terminus: Scram choreography complete. Rods manually inserted by initiating ARI.		

NOTES:

Operator Actions

Event No.(s): 7, 8		Page 1 of 2
Description: Unisolable MSL 'D' Leak / Multiple Secondary Containment Areas above max safe temperatures requiring blowdown / MSIVs fail to close on Group 1 Isolation Signal		
Initiation: Following Event 6 and upon direction of the Lead Examiner, insert REMOTE 5		
Cues: Multiple Aux Building Steam Tunnel High Temperature annunciators on 1H13-P601.		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Rising temperatures on 1TR-CM326 & 327 Secondary Containment Temperature Recorder (multiple points).</p> <p><u>Expected Annunciators:</u> Multiple annunciators on 1H13-P601</p> <p><u>Automatic Actions:</u> CRVICS Group 1, 4, 5, 6 isolations on High MSL Tunnel Ambient Temperature</p>		
[CT]	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Reports EOP-8 entry on secondary containment area temperature above max normal. • Performs EOP actions as directed by the SRO. ○ Reports EOP entry conditions. ○ Coordinates with BOP to monitor and control RPV level and pressure. ○ Performs a manual Group 1 Isolation of the MSLs and MSL Drains. <p>Per EOP-8, Secondary Containment Control (will probably be BOP):</p> <ul style="list-style-type: none"> ○ [CT] Initiates ADS when directed by SRO. <ul style="list-style-type: none"> • Verifies ADS actuation using the following indications: <ul style="list-style-type: none"> ○ SPDS ○ DCS Display 122 (2H) [Acoustic Monitor Input] ○ 1H13-P601/P642 Solenoid Indicator Lights ○ 1H13-P866 Valve Flow Monitor Control Panel ○ 1H13-P614 ADS Safety Valve Temperature recorder 1B21-R614 ○ Indirect indication via changes in RPV pressure, RPV level, MSL flows & suppression pool temperatures.
[CT]	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. ○ Reports EOP-8 entry on secondary containment area temperature above max normal. ○ Monitors and reports secondary containment temperatures on 1H13-P678 recorders 1TR-CM326 and 327 (may be performed by ATC/WEC). ○ Determines that Group 1 MSL Isolation Valves failed to isolate on High MSL Tunnel temperature. ○ Performs a manual Group 1 Isolation of the MSLs and MSL Drains. ○ Reports to the SRO when two areas are above Max Safe temperatures per EOP-8, Secondary Containment Control (may be performed by ATC/WEC). ○ [CT] Initiates ADS when directed by the SRO. <ul style="list-style-type: none"> • Verifies ADS actuation using the following indications: <ul style="list-style-type: none"> ○ SPDS ○ DCS Display 122 (2H) [Acoustic Monitor Input] ○ 1H13-P601/P642 Solenoid Indicator Lights ○ 1H13-P866 Valve Flow Monitor Control Panel ○ 1H13-P614 ADS Safety Valve Temperature recorder 1B21-R614 ○ Indirect indication via changes in RPV pressure, RPV level, MSL flows & suppression pool temperatures.

[CT]	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations standards and approved procedures. • Enters and executes EOP-8 Secondary Containment Control when ABST Temperatures have exceeded max normal values of EOP-8 Table T Area Temperature Limits. • Directs BOP/ATC to perform a manual Group 1 Isolation • Enters and executes EOP-3 Emergency RPV Depressurization when <u>2 or more</u> of the following areas have exceeded max safe temperature values of EOP-8 Table T Area Temperature Limits: <ul style="list-style-type: none"> • Point 14 1TR-CM326 (Upper Recorder) - Aux Bldg Below MS Tunnel > 200°F • Point 18 1TR-CM326 (Upper Recorder) - Aux Bldg Steam Tunnel > 200°F • Point 15 or 16 1TR-CM327 (Lower Recorder) - Aux Bldg MSIV Room A or B > 200°F • [CT] Directs initiation of ADS to blowdown the reactor. ○ Informs Shift Manager. ○ Conducts a brief.
Terminus: The scenario can be terminated when 7 SRVs have been opened and RPV water level is being maintained in accordance with EOP-1.		

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. Reset to IC-222 (PW 76319) @ 99% Power. If this is the first reset after swapping simulator loads, reset the IC twice.
4. Load the lesson plan for this scenario.
5. Verify the following commands are active:
 - **YP_XMFTB_4963 Auto & Manual Scram Failure**
 - **YP_XREMT_739 Defeat Group 1 Interlocks**
6. Place simulator in RUN.
7. Turn on and advance recorders.
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 30 is in progress – Gang 10B is at Position 22.
12. Make sure Sequence A is selected.
13. Make sure Individual Drive Mode is selected on the OCM.
14. Remove EST Tags from the following control switches:
 - 1H13-P877-5014 - MC Pump 'B'
 - 1H13-P877-5016 - 1TD004A RFPT 1A HP Stop Vlv Before SDV
 - 1H13-P877-5019 - 1B21-BSFV-1 Aux Stm to MSR 1B Inlet Vlv
 - 1H13-P877-5019 - 1GS02CB SPE Blower 1B2
 - 1H13-P800-5042 - 0VQ03CC DW Prg Low Flow Exh Fan
 - 1H13-P801-5050 - 1VY03C RHR Hx Rm A Sply Fan
 - 1H13-P801-5050 - 1VY04C RCIC Pmp Rm Sply Fan
 - 1H13-P801-5050 - 0VC69Y Locker Rm Exh Fan 11C Isol Dmpr
 - 1H13-P801-5052 - 0VC70Y Locker Rm Exh Fan 11C Isol Dmpr
 - 1H13-P601-5064 - 1SX011A Div 1 Cross Tie Valve
 - 1H13-P601-5065 - 1SX011B Div 2 Cross Tie Valve
 - 1H13-P601-5067 - 1B21-F067B MSL B Outbd MSIV Before Seat Drain Vlv
15. Procedures that are expected to be used during this scenario are:
 - CPS 3110.01 Generator Stator Cooling (GC) (provided in the Crew Docs Notebook)
 - CPS 3309.01 High Pressure Core Spray (HPCS)
 - ITS 3.5.1 ECCS – Operating
 - CPS 4008.01 Abnormal Reactor Coolant Flow
 - CPS 4002.01 Abnormal RPV Level/Loss of Feedwater At Power
 - CPS 3302.01 Reactor Recirculation (RR)
 - ITS 3.4.1 Recirculation Loops Operating
 - CPS 3005.01 Unit Power Changes
 - ITS 3.2.1 APLHGR
 - ITS 3.2.2 MCPR
 - ITS 3.2.3 LHGR
 - EOP-1 RPV Control
 - EOP-1A ATWS RPV Control
 - EOP-3 Emergency RPV Depressurization (Blowdown)
 - EOP-8 Secondary Containment Control
 - CPS 4200.01 Auto Isolation

16. Hang OOS tags on: None
17. Identify T/S issues associated with OOS and turnover: None
18. Operating Equipment: Make sure CCW Pumps 'A' and 'B' are running
19. Marked up copies: None
20. Verify simulator conditions match the turnover.

Event Triggers and Role Play

Event

1. **Shift Generator Stator Cooling Pumps (Pull up 1PL10J trouble alarms)**
 - a. Event Trigger - Following shift turnover.
 - b. Role play :
 - (1) EO (If requested)
 - a) (when asked to check local panel alarms on 1PL10J) – acknowledge 1PL10J alarms and provide reports.
 - b) (when asked to perform prestart checks for GC Pump A) – “Prestart checks are complete for GC Pump A. I’m standing by for pump start”.
 - c) (when asked to check for GC Pump A locally) – “GC Pump A is running normally.”
2. **Spurious HPCS auto initiation**
 - a. Event Trigger - Following Event 1 and when directed by the Lead Examiner, **Activate Remote 1** and verify the following command(s):
 - (1) **YP_XMFTB_4102** (HPCS Spurious Automatic Initiation)
 - b. Role play
 - (1) Maintenance (if requested) – respond as dispatching personnel to investigate.
 - (2) EO (when requested to check Div 3 DG and/or SX for proper operation) – wait 5 minutes and report that requested equipment is operating normally.
3. **RR Pump B high vibration**
 - a. Event Trigger – Following Event 2 and when directed by the Lead Examiner, **Activate Remote 2** and verify the following command(s):
 - (1) **A02_A01_02_10_TVM** (5003-2K Recirc Pmp B Mtr Vibr Hi).
 - b. Role play:
 - (1) If asked to check RR Pump vibration monitor – “RR Vibration Monitoring Computer shows RR Pump ‘B’ vibration indicates 21 mils and stable.”
4. **Reduce power with Control Rods**
 - a. Event Trigger - Following Event 3.
 - 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 Chief Examiner requires additional power reduction, enter MCR as RE and recommend lowering power an additional 5% to provide additional margin to the MELLA Limit.
5. **CCW Pump ‘1A’ Trip**
 - a. Event Trigger - When directed by the Lead Examiner, **Activate Remote 3** 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.”

6. RR Pump A Trip / ATWS

- a. Event Trigger – Following Event 5 and when directed by the Lead Examiner, **Activate Remote 4** and verify the following command(s):
 - (1) YP_XMFTB_4965 (RR02A-Recirc Pump A Trip)
- b. Role play
 - (1) Maintenance (after 2 minutes from scram announcement) – report to the MCR as IMD.

7. Unisolable MSL 'D' Leak into the Aux Building Steam Tunnel requiring blowdown

- a. Event Trigger - Following Event 6 and when directed by the Lead Examiner, **Activate Remote 5** and verify the following command(s):
 - (1) **YPXMALSE_256 0.08%, YVMSSILK_4 100%, YVMSSILK_8 100%, YPXMALSE_256 0.4%** (after ATC places the RMS in Shutdown)
- b. Role play
 - (1) WEC Supervisor (when requested to monitor secondary containment temperatures on P678 recorders 1TR-CM326 and 327) – report to the MCR and report temperatures as directed by the SRO.

8. MSIVs fail to close on Group 1 isolation signal

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

Turnover

1. **Day of week and shift**
 - a. Today day shift
2. **Weather conditions**
 - a. Calm and clear.
3. **Plant power level**
 - a. The plant is in Mode 1, operating at ~ 99% power.
 - b. RR Pumps A and B are operating in fast speed with FCVs at 87%/89%. 3436 MWt, 1130 MWe, 83.95 Mlbm/hr Core Flow.
 - c. Control rods - Step 30 / Gang 10B is at position 22.
4. **Thermal Limit Problems/Power Evolutions**
 - Power will be maintained at 99% throughout the shift.
5. **LCO's in effect**
 - None
6. **Surveillances in progress**
 - None
7. **Status of Tagged Out Equipment**
 - None
8. **Previous Shift Evolutions completed**
 - None
9. **Evolutions planned for the shift**
 - Shift GC Pumps IAW CPS 3110.01 Generator Stator Cooling (GC) section 8.2.4 Shifting GC Water Pumps.
10. **Risk Levels**
 - Green
 - Protected Equipment: FC 'B'
11. **Dose equivalent Iodine 131**
 - reading 1.5 E-6 μ curies per gram

Exelon Nuclear

ILT 15-1 NRC Exam

**Scenario Number:
NRC Exam Scenario 3**

Revision Number: 1

Date: 10/25/16

Developed By:	<u>T. Jennings</u> Instructor	<u>9/22/16</u> Date
Validated By:	<u>Michael Antonelli</u> SME or Instructor	<u>10/28/16</u> Date
Reviewed By:	<u>Jim Lucas</u> Operations Representative	<u>11/15/16</u> Date
Approved By:	<u>T. Jennings</u> Training Department	<u>11/15/16</u> Date

Appendix D

Scenario Outline

Form ES-D-1

Facility: <u>Clinton Power Station</u>	Scenario No.: <u>3</u>	Operating Test No.: <u>2017-301</u>
Examiners: _____ _____	Operators: _____ _____	
<p>Initial Conditions:</p> <ul style="list-style-type: none"> • Mode 1 at ~10% power. • Weather conditions are calm and clear. • SF System is secured to support surveillance testing. <p>Turnover:</p> <ul style="list-style-type: none"> • CPS 3002.01 Heatup and Pressurization is complete with the exception of placing a TDRFP in rolling standby (to be performed at 15% power). • CPS 3004.01 Turbine Startup and Generator Synchronization is in progress. Section 5.0 Prerequisites are complete. Steps 8.1.1 – 8.1.4 are complete. Step 8.1.5 will be performed after placing a TDRFP in rolling standby. • On Step 12. Gang 3C is at position 48. • Priorities for the shift are as follows: <ul style="list-style-type: none"> ○ Perform CPS 9061.03C012 Week 12 – CM, SF, SM, LD ISOL Valve Operability Checklist sections 8.12.6 and 8.12.7 (Method B). Position indication testing is <u>NOT</u> required. Do <u>NOT</u> restart SF after the completion of 9061.03C012/D012. ○ Continue with power ascension to 15% IAW Step 8.1.6 of CPS 3004.01. The RE has requested single rod, single notch rod motion. After reaching 15 % power: <ul style="list-style-type: none"> ○ Place TDRFP 'A' in rolling standby IAW Step 8.6.3 of CPS 3002.01. ○ Perform Turbine Roll IAW Step 8.1.8 of CPS 3004.01. 		

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N-BOP	Perform 9061.03C012 Week 12 – SF Valve Operability Checklist
2	NA	R-ATC	Raise power with rods to 15%.
3	ROD1233TFIA5	C-ATC TS-SRO	Uncoupled Rod
4	Rod4433TFIA4	C-ATC	Control Rod difficult to withdraw
5	A05_A02_A0204_1_TVM; A05_A02_A09DS08_1	C-BOP TS-SRO	RCIC failure to auto isolate on an isolation signal
6	SA01B1SA1CFO SA01B0SA1CFTC	C-BOP	#1 SA Compressor trips with failure of Standby Compressor to Auto Start
7	Seismic_Value 0.25g Multiple Annunciators YPXMAISE_239 YP_XMFTB_4963	M-All	Earthquake Loss of Main Condenser vacuum ATWS
8	ed01LMalfMot(19)	C-All	CRD Pump 'B' Trips During ATWS

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

Scenario No.: 2

Operating Test No.: 2017-301

Narrative Summary

Event #	Description
1. Perform 9061.03C012 Week 12 – SF Valve Operability Checklist	The SRO directs BOP to perform CPS 9061.03C012 Week 12 – SF Valve Operability Checklist sections 8.12.6 and 8.12.7 (Method B).
2. Raise power with rods to 15%	The crew will continue the power ascension to 15% by withdrawing control rods in accordance with Step 8.1.6 of CPS 3004.01 Turbine Startup and Generator Synchronization.
3. Uncoupled rod	When the first in-sequence control rod (12-33) reaches position 48, the ATC will perform a coupling check IAW CPS 3304.02 Rod Control And Information System (RC&IS) section 8.1.10 Coupling Check by applying a continuous withdraw to the rod at position 48. Annunciator 5006-5G Rod Overtravel will be received, indicating that the control rod has become uncoupled from its drive mechanism. The operating crew will attempt to recouple the control rod IAW the annunciator response procedure. The SRO will evaluate and enter ITS 3.1.3 Condition C until the control rod is successfully recoupled.
4. Control Rod difficult to withdraw	Control Rod 44-33 will not withdraw when using normal drive differential pressure. The crew will perform actions for a difficult to withdraw control rod IAW CPS 3304.01 Control Rod Hydraulic & Control (RD) Section 8.3.4 Control Rod Difficult to Withdraw. When drive dP is increased to 300 psid, the control rod withdrawal will be successful, allowing the power ascension to continue.
5. RCIC failure to auto isolate on an isolation signal	Annunciator 5063-4A RCIC DIV 2 STEAM LINE DIFF PRESS HIGH is received. BOP will observe that 1E51-F063 and F076 have failed to automatically shut and will manually shut them and trip the RCIC turbine. SRO will enter Tech Spec LCO 3.5.3 RCIC System Action A.1 and A.2, and LCO 3.3.6.1 Primary Containment and Drywell Isolation Instrumentation Action D.1.
6. #1 SA Compressor trips with failure of Standby Compressor to Auto Start	Annunciator 5041-1A AUTO TRIP PUMP/MOTOR is received due to a trip of the #1 Service Air Compressor (1SA01C). The SRO will enter CPS 4004.01 Instrument Air Loss and direct the BOP to start the standby Service Air Compressor (0SA01C). If the crew fails to manually start 0SA01C, the air compressor will fail to automatically start to restore air pressure.
7. Earthquake/Loss of Main Condenser Vacuum/ ATWS	Annunciators 5009-1A ACCL EXCDED SAFE SHUTDN EARTHQKE, 5009-2A ACCL EXCDED SEIS SW/OPER BAS EARTHQKE, 5009-2B ACCL EXCDED OPER BAS EARTHQKE and 5009-3A ACTIVATED SEIS RCDR are received. SRO enters CPS 4301.01 Earthquake. BOP observes status lights on the Seismic Warning Panel and determines that a Safe Shutdown Earthquake (SSE) has been exceeded. The earthquake causes a vacuum leak in the Main Condenser. The MCR will take actions for degrading vacuum IAW CPS 4004.02 Loss of Vacuum. Efforts to determine the location of the vacuum leak will be unsuccessful. When it is determined that vacuum cannot be controlled above 24" Hg vac, the SRO will direct the ATC to perform a Rapid Plant Shutdown or to scram the reactor. When the ATC places the Reactor Mode Switch in shutdown/attempts manual scram or ARI, control rods fail to insert. The SRO will enter EOP-1 RPV Control and transition to EOP-1A ATWS RPV Control. The SRO will direct the BOP to start SLC and the ATC to insert control rods per EOP-1A.
8. CRD Pump B trips during ATWS	CRD Pump 'B' will trip 15 seconds after the Reactor Mode Switch is placed in Shutdown during Event 7, causing a loss of Control Rod Hydraulic (RD) Drive pressure and inability to insert control rods. The Crew will take actions to restore RD Drive pressure by starting the 'A' RD Pump.

EOP

1, 1A

Critical tasks:

- RPV-6.1 BOP/ATC inserts control rods and/or starts Standby Liquid Control Pumps to shutdown the reactor.
- (Conditional) RPV-6.2 BOP Inhibits ADS (only if level challenges Level 1).
- RPV-6.3 BOP and ATC terminates and prevents injection IAW Detail F1 to lower level to reduce subcooling or to lower level to decrease reactor power.
- RPV-6.3 BOP terminates and prevents injection from HPCS.
- RPV-6.4 ATC controls RPV level between TAF and -60" (PRA).

Operator Actions

Event No.(s): 1		Page 1 of 1
Description: Perform 9061.03C012 Week 12 – SF Valve Operability Checklist (Method B).		
Initiation: Following shift turnover and when directed by the Lead Examiner		
Cues: Directed by SRO		
Time	Position	Applicant's Actions or Behavior
<p style="text-align: center;"><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"> • "Expected alarms" will be flagged • When the annunciator comes in the operator will announce "Expected Alarm" • The annunciator response procedure (ARP) need not be entered since it has already been reviewed in the pre-brief. <p>If a pre-brief was not conducted the operator should perform the following:</p> <ul style="list-style-type: none"> • When an annunciator comes in the ARP should be referred to. • The annunciator may then be identified as an "Expected Alarm", flagged, and from that point on the ARP need not be referred to. 		
<p><u>Key Parameter Response:</u> 1SF001, 1SF002, and 1SF004 valve position indication.</p> <p><u>Expected Annunciators:</u> 5041-7C NOT AVAILABLE SF SYSTEM DIVISION 1, 5041-7F NOT AVAILABLE SF SYSTEM DIVISION 2</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. <p>IAW CPS 9061.03C012 Week 12 – SF Valve Operability Checklist section 8.12.6:</p> <ul style="list-style-type: none"> • Places SF SYS DIV 1 IN TEST switch to TEST. • Performs open and close testing of 1SF001 and 1SF004; records data on D001. • Places SF SYS DIV 1 IN TEST switch to NORMAL. <p>IAW CPS 9061.03C012 Week 12 – SF Valve Operability Checklist section 8.12.7:</p> <ul style="list-style-type: none"> • Places SF SYS DIV 2 IN TEST switch to TEST. • Performs open and close testing of 1SF002; records data on D001. • Places SF SYS DIV 2 IN TEST switch to NORMAL.
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.
Terminus: CPS 9061.03C012 Week 12 – SF Valve Operability Checklist sections 8.12.6 and 8.12.7 complete.		

NOTES:

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

Operator Actions

Event No.(s): 2, 3, 4		Page 1 of 2
Description: Raise power with rods to 15% / Uncoupled Rod / Control Rod Difficult To Withdraw		
Initiation: Following Event 1 and upon direction of the SRO		
Cues: Annunciator 5006-5G Rod Overtravel, Control Rod 44-33 fails to move when withdraw signal is applied.		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Reactor power, Rod drive parameters (flow, dP), control rod position, Bypass Valve Position, rod uncoupled light on P680 OCM for control rod 12-33,</p> <p><u>Expected Annunciators:</u> 5005-2K SRM Period, 5006-5G Rod Overtravel</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> Monitors reactor to ensure operations remain within established bands. Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <p><u>Reactivity Maneuver</u></p> <p>Per CPS 3004.01 Turbine Startup and Generator Synchronization, NF-CL-721-F-2 Control Rod Move Sheets and CPS 3304.02 RCIS:</p> <ul style="list-style-type: none"> Withdraws control rods (beginning with 12-33 from position 12) per the control rod sequence to raise power. Monitors nuclear instruments during rod movement. Monitors the Power to Flow Map during power ascension. Performs a Coupling Check for any control rod(s) withdrawn to position 48. <p><u>Uncoupled Rod</u></p> <p>Per CPS 3304.02 Rod Control And Information System, section 8.1.10 Coupling Check:</p> <ul style="list-style-type: none"> After 12-33 is withdrawn to position 48, applies a continuous withdraw signal to verify rod coupling. Observes 5006-3G Rod Overtravel is received. Observes red full-out light for 12-33 goes out. Determines control rod 12-33 is uncoupled by pressing the ROD UNCOUPLED button on the P680 OCM. Informs SRO that 12-33 is uncoupled and to refer to ITS 3.1.3. <p>Per CPS 3304.02 Rod Control And Information System, section 8.2.6:</p> <ul style="list-style-type: none"> Verifies that the INDIVID DRIVE light is energized on the OCM. If not, selects individual drive by depressing DRIVE MODE push-button. Inserts the drive 1 or 2 notches in an attempt to recouple the rod. Determines if the rod has recoupled by fully withdrawing the drive. Performs the coupling check and determines that the rod is recoupled. Initiates an Issue Report and contacts the Reactor Engineer regarding the uncoupled rod event. <p><u>Control Rod Difficult To Withdraw</u></p> <ul style="list-style-type: none"> Determines control rod 44-33 will not withdraw with normal drive water differential pressure. Informs SRO that 44-33 will not withdraw using normal drive water differential pressure. <p>Per CPS 3304.01, Control Rod Hydraulic & Control (RD), Section 8.3.4:</p> <ul style="list-style-type: none"> Increases Drive Water Diff Press in ~ 50 psid increments to a maximum of 500 psid by throttling closed on C11-F003, CRD Press Control Valve to achieve the desired differential pressure (will probably be performed by BOP). Attempts to withdraw rod 44-33 using normal notch withdrawal. Logs Drive Water Flow and Drive Water Diff Press. Returns Drive Water Diff Press to normal (235 – 265 psid) using C11-F003 (will probably be performed by BOP).

	BOP	<ul style="list-style-type: none"> Monitors control room panels, notifies the SRO of unusual/unexpected conditions. Monitors reactor to ensure operations remain within established bands. <p><u>Reactivity Maneuver</u></p> <ul style="list-style-type: none"> Monitors the Power to Flow Map during power ascension. <p><u>Uncoupled Rod</u></p> <ul style="list-style-type: none"> Initiates an Issue Report and contacts the Reactor Engineer regarding the uncoupled rod event. <p><u>Control Rod Difficult To Withdraw</u></p> <ul style="list-style-type: none"> Increases Drive Water Diff Press in ~ 50 psid increments to a maximum of 500 psid by throttling closed on C11-F003, CRD Press Control Valve (may be performed by ATC). Throttles C11-F003 to restore drive water differential pressure to normal (235 – 265 psid) after control rod is successfully withdrawn (may be performed by ATC). Logs Drive Water Flow and Drive Water Diff Press.
	SRO	<ul style="list-style-type: none"> Acknowledges reports from ATC/BOP. Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. Informs Shift Manager. Conducts a brief. <p><u>Reactivity Maneuver</u></p> <ul style="list-style-type: none"> Directs ATC to raise power to 15%. Maintains oversight during control rod movement; positioned in proximity to the ATC (typically from the SRO desk). <p><u>Uncoupled Rod</u></p> <ul style="list-style-type: none"> Verifies / directs ATC to attempt to recouple rod 12-33. Enters ITS 3.1.3 Action C.1 and C.2 to fully insert control rod 12-33 within 3 hours and disarm 12-33 within 4 hours. Exits ITS 3.1.3 Action C.1 and C.2 when 12-33 is successfully recoupled. <p><u>Control Rod Difficult To Withdraw</u></p> <ul style="list-style-type: none"> Verifies / directs ATC to perform CPS 3304.01 Control Rod Hydraulic and Control (RD) section 8.3.4 Control Rod Difficult To Withdraw. Directs continuing startup.
<p>Terminus: Clearly observable plant response from change in power level, control rod 12-33 recoupled and returned to position 48, successful withdrawal of control rod 28-33, and rod drive dP restored to normal (235 – 265 psid).</p>		

NOTES:

Operator Actions

Event No.(s): 5		Page 1 of 1
Description: RCIC failure to auto isolate on an isolation signal		
Initiation: Following Event 4 and upon direction of the Lead Examiner, insert REMOTE 1 .		
Cues: Annunciator 5063-4A RCIC Div 2 Steam Line Diff Press High alarm		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> Annunciator 5063-4A RCIC Div 2 Steam Line Diff Press High alarm <u>Expected Annunciators:</u> 5063-4A RCIC Div 2 Steam Line Diff Press High alarm <u>Automatic Actions:</u> None (automatic isolation fails)		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels, notifies SRO of unusual/unexpected conditions. ○ Makes plant announcement.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. Reports issue to SRO. • Refers to ARP. <p>Per 5063-4A RCIC Div 2 Steam Line Diff Press High alarm:</p> <ul style="list-style-type: none"> ○ Determines that a Group 5 isolation has <u>not</u> occurred. • Manually initiates a Group 5 isolation by: <ul style="list-style-type: none"> • Closing 1E51-F063, RHR & RCIC Stm Supp Inbd Isol Valve. ○ Verifying closed 1E51-F076, RHR & RCIC Stm Supp Warm Up Isol Valve. • Tripping the RCIC turbine.
	SRO	<ul style="list-style-type: none"> • Acknowledges report from BOP. • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. • Directs performing a Group 5 isolation. • Reviews and enters ITS 3.5.3 A.1 and A.2, and 3.3.6.1 D.1. ○ Informs Shift Manager. ○ Contacts maintenance to investigate. ○ Conducts a brief.
Terminus: Technical Specification review complete.		

NOTES:

Operator Actions

Event No.(s): 6		Page 1 of 2
Description: Service Air Compressor (SAC) trip / failure of the standby SAC to auto start		
Initiation: Following Event 5 and upon direction of the Lead Examiner, insert REMOTE 2 .		
Cues: Annunciator 5041-1A, Auto Trip Pump/Motor		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> SA header pressure decreases, 1SA01C amber trip light energized</p> <p><u>Expected Annunciators:</u> 5041-1A Auto Trip Pump/Motor</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. ○ Monitors control room panels and notifies the SRO of any unusual or unexpected conditions. ○ Dispatches Equipment Operator to investigate. <p>Per CPS 4004.01 Instrument Air Loss:</p> <ul style="list-style-type: none"> ○ IF air pressure lowers to 60 psig and cannot be restored, or SDV level increases resulting in a rod block, or any control rod begins to drift, THEN turn mode switch to SHUTDOWN.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels and notifies the SRO of any unusual or unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. • Determines that 1SA01C has tripped. • Reports issue to SRO. • Refers to the ARP for 5041-1A. <p>Per 5041-1A AUTO TRIP SERVICE AIR COMPRESSOR and CPS 4004.01 Instrument Air Loss:</p> <ul style="list-style-type: none"> • Starts standby Service Air Compressor (0SA01C) (fails to Auto Start). • Monitors SA Header Pressure. ○ Dispatches Equipment Operator to investigate cause of trip.
	SRO	<ul style="list-style-type: none"> • Acknowledges report from BOP. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards, and approved procedures. • Enters and executes CPS 4004.01 Instrument Air Loss. • Directs actions listed above. ○ Informs Shift Manager. ○ Contacts Maintenance to investigate. ○ Conducts a brief.
Terminus: 0SA01C running and maintaining SA header pressure.		

NOTES:

Operator Actions

Event No.(s): 7, 8		Page 1 of 3
Description: Earthquake / Loss of Main Condenser vacuum / ATWS / CRD Pump 'B' Trips During ATWS		
Initiation: Following Event 6 and upon direction of the Lead Examiner, insert REMOTE 3 .		
Cues: Multiple annunciators on 1H13-P601 and P870		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Lowering (degrading) Main Condenser Vacuum</p> <p><u>Expected Annunciators:</u> 5009-1A ACCL EXCDED SAFE SHUTDN EARTHQKE, 5009-2A ACCL EXCDED SEIS SW/OPER BAS EARTHQKE, 5009-2B ACCL EXCDED OPER BAS EARTHQKE and 5009-3A ACTIVATED SEIS RCDR</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> Monitors reactor to ensure operations remain within established bands. Monitors control room panels and notifies the SRO of any unusual or unexpected conditions. Reports receipt of annunciators 5009-1A, 2A, 2B, and 3A to the SRO. Recognizes lowering Main Condenser Vacuum and notifies SRO. <p>Per CPS 4301.01 Earthquake, checks the following parameters:</p> <ul style="list-style-type: none"> Reactor power, RPV pressure, RPV level Feed flow, Steam flow Generator load, Turbine vibration Electrical distribution system integrity Off-Gas, Area Radiation & Process Radiation Monitors Leak detection systems Balance of plant annunciators Reactor Feed Pump vibrations Reactor Recirculation Pump vibrations Tank levels (MC, CY, DG Fuel Oil, etc.) Trip and isolation logic status <p>Per 5007-2B/2D Low Vacuum LP Turb 1A/1B Exh Hood:</p> <ul style="list-style-type: none"> Monitors condenser vacuum. Scrams the reactor when directed by the SRO. <ul style="list-style-type: none"> Carries out ATWS Scram Choreography by reporting the following: <ul style="list-style-type: none"> Mode Switch in shutdown, power is... Shutdown Criteria is not met... Reactor Power is ... and trend Reactor Pressure is ... and trend Reactor Level is ... and trend Manual Scram and ARI have been initiated Any EOPs with entry conditions (EOP-1 on power) Arms and Depresses manual scram pushbuttons. Initiates ARI. <p>[CT] [CT] Inserts Control Rods per CPS 4411.08 & 4410.00C012 (only critical if SLC is not started).</p> <p>[CT] [CT] Terminates and prevents injection from Condensate/Feedwater when directed by the SRO.</p> <p>[CT] [CT] Controls level in Level Band B or C of EOP-1A (depending on whether BIT Override is met).</p> <ul style="list-style-type: none"> Reports critical parameters as required. Coordinates with BOP to monitor and control RPV level and pressure.

<p>[CT] [CT] [CT]</p>	<p>BOP</p>	<ul style="list-style-type: none"> • Monitors control room panels and notifies the SRO of unusual or unexpected conditions. <ul style="list-style-type: none"> ○ Monitors reactor to ensure operations remain within established bands. ○ Recognizes lowering Main Condenser Vacuum and notifies SRO. ○ Performs a Manual Group 1 Isolation when directed by the SRO. <p>Per CPS 5009-1A, 2A, 2B and 3A and CPS 4301.01 Earthquake:</p> <ul style="list-style-type: none"> • Verifies at Seismic Warning Panel 1H13-P865 (NOTE: This panel is only simulated at the simulator V-Panel in the back corner of the simulator): <ul style="list-style-type: none"> • SAFE SHUTDOWN EARTHQUAKE red light ON. • 1VS-EM014 Contmnt 712'0" red light ON. • Operating Basis Equake red light ON. • Seismic System Triggered red light ON. • Determines that SSE level earthquake has been exceeded. <p>Per CPS 4301.01 Earthquake, checks the following parameters:</p> <ul style="list-style-type: none"> • Electrical distribution system integrity • Off-Gas, Area Radiation & Process Radiation Monitors • Leak detection systems • Balance of plant annunciators <ul style="list-style-type: none"> ○ RPV pressure, RPV level, Steam flow ○ Generator load, Turbine vibration ○ Reactor Recirculation Pump vibrations • Tank levels (MC, CY, DG Fuel Oil, etc.) ○ Trip and isolation logic status • Directs Equipment Operators to perform visual inspection of plant equipment for damage. <ul style="list-style-type: none"> • Performs ATWS scram choreography actions. <ul style="list-style-type: none"> • Announces: <ul style="list-style-type: none"> • Reactor Scram with Failure to Scram • Motor Driven Reactor Feed Pump may start • Evacuate the RCIC room • Evacuate the Containment • Determines rod status and reports "Shutdown Criteria is not met" to SRO. • Starts Control Rod Drive Pump 'A'. • [CT] Inhibits ADS when directed by SRO. • [CT] Starts SLC (only critical if control rods are not inserted). • [CT] Terminates and prevents injection of HPCS, RCIC (only performed and critical if NOT running), LPCS, & LPCI using hard cards at P601.
-------------------------------	------------	---

<p>[CT] [CT]</p>	<p>SRO</p>	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Determines that a valid seismic event has occurred. • Directs performance of plant and MCR Panel walkdowns. • Enters and executes CPS 4301.01 Earthquake. • Enters and executes CPS 4004.02 Loss of Vacuum. ○ Notifies Engineering Duty Director / Manager that a seismic event has occurred and to perform CPS 1337.05 Seismic Response and Reporting. ○ Notifies Illinois Department of Natural Resources of the seismic event. ○ Notifies Shift Manager of the event. ○ Directs performance of CPS 1850.00 Post-Earthquake CPS Organizational Response to verify integrity of buildings systems and components. ○ Directs CMO to perform thermography on switchyard components and transformers, including bushings. ○ Makes preparations for performing an orderly plant shutdown. ○ Enters ORM 2.2.7 Seismic Monitoring Instrumentation Action 3.2.7.a, with one or more of the above seismic monitoring instruments inoperable for more than 30 days, initiate a Condition Report. <p>Per CPS 4004.02 Loss of Vacuum:</p> <ul style="list-style-type: none"> • When it is determined that Main Condenser Vacuum cannot be controlled above 24" Hg vacuum, directs ATC to place the Reactor Mode Switch in SHUTDOWN. ○ Directs a manual Group 1 Isolation to be performed. <p>Enters CPS 4100.01 Reactor Scram</p> <ul style="list-style-type: none"> • Carries out ATWS Scram Choreography by performing an Update: <ul style="list-style-type: none"> • Entering EOP-1, transitioning to EOP-1A. • Entering the Scram Off-Normal. • End of Update. <p>Enters EOP-1A, ATWS RPV Control and directs:</p> <ul style="list-style-type: none"> • Inhibiting ADS. • Initiating ARI. • [CT] Terminate and Prevent injection of HPCS. • [CT] Insertion of control rods per CPS 4411.08, and/or initiation of SLC per CPS 4411.10. • Stabilization of RPV Pressure 800 to 1065 psig with Bypass Valves and SRVs. ○ Informs the Shift Manager. ○ Conducts a brief. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.
<p>Terminus: The scenario can be terminated when control rods are being inserted and RPV water level is being maintained in accordance with EOP-1A.</p>		

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. Reset to IC-223 (PW 76319) @ 10% Power. If this is the first reset after swapping simulator loads, reset the IC twice.
4. Load the lesson plan for this scenario.
5. Verify the following commands are active:
 - **YP_XMFTB_4963 Auto & Manual Scram Failure**
 - **ROD4433TFIA4 Rod 44-33 Is Stuck At Present Location**
 - **ROD1233TFIA5 Rod 12-33 Rod Uncoupled**
6. Place simulator in RUN.
7. Turn on and advance recorders.
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: On step 12. Gang 3C is at position 48.
12. Make sure Sequence A is selected.
13. Make sure Individual Drive Mode is selected on the OCM.
14. Remove EST Tags from the following control switches:
 - 1H13-P877-5014 - MC Pump 'B'
 - 1H13-P877-5016 - 1TD004A RFPT 1A HP Stop Vlv Before SDV
 - 1H13-P877-5019 - 1B21-BSFV-1 Aux Stm to MSR 1B Inlet Vlv
 - 1H13-P877-5019 - 1GS02CB SPE Blower 1B2
 - 1H13-P800-5042 - 0VQ03CC DW Prg Low Flow Exh Fan
 - 1H13-P801-5050 - 1VY03C RHR Hx Rm A Sply Fan
 - 1H13-P801-5050 - 1VY04C RCIC Pmp Rm Sply Fan
 - 1H13-P801-5050 - 0VC69Y Locker Rm Exh Fan 11C Isol Dmpr
 - 1H13-P801-5052 - 0VC70Y Locker Rm Exh Fan 11C Isol Dmpr
 - 1H13-P601-5064 - 1SX011A Div 1 Cross Tie Valve
 - 1H13-P601-5065 - 1SX011B Div 2 Cross Tie Valve
 - 1H13-P601-5067 - 1B21-F067B MSL B Outbd MSIV Before Seat Drain Vlv
15. Procedures that are expected to be used during this scenario are:
 - CPS 3004.01 Heatup and Presurization
 - CPS 9061.03C012/D012 Week 12 – CM, SF SM, LD ISOL Valve Operability
 - CPS 3304.02 Rod Control and Information System (RC&IS)
 - ITS 3.1.3 Control Rod OPERABILITY
 - CPS 3304.01 Control Rod Hydraulic & Control (RD)
 - CPS 4001.02 Automatic Isolation
 - ITS 3.5.3 RCIC System
 - ITS 3.3.6.1 Primary Containment and Drywell Isolation Instrumentation
 - CPS 4004.01 Instrument Air Loss
 - CPS 4301.01 Earthquake
 - CPS 4004.02 Loss of Vacuum
 - EOP-1 RPV Control
 - EOP-1A ATWS RPV Control
16. Hang OOS tags on: None

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

18. Operating Equipment:

- Verify 1SA01C is running
- Verify Suppression Pool Cleanup (SF) is shutdown (pumps secured, SF001/2/4 SHUT)

19. Marked up copies: None

20. Verify simulator conditions match the turnover.

Event Triggers and Role Play

Event #

1. **Perform 9061.03C012 Week 12 – SF Valve Operability Checklist**
 - a. Event Trigger - Following shift turnover.
 - b. Role play - none
2. **Raise power with rods to 15%.**
 - a. Event Trigger - Following Event 1 and when directed by the SRO.
 - b. Role play
 - (1) Booth Operator – (when RE and/or Rod Verifier requested) – report to the MCR as the RE and/or Rod Verifier.
3. **Uncoupled Rod**
 - a. Event Trigger – When Rod12-33 is withdrawn to position 48.
 - b. Role play
 - (1) Booth Operator - When control rod 12-33 is inserted from position 48, verify **Delete ROD1233TFIA5** is inserted (Delete Rod 12-33 Malfunction).
4. **Control Rod Difficult To Withdraw**
 - a. Event Trigger - Following Event 3 when withdrawal of rod 44-33 is attempted:
 - (1) Verify **ROD4433TFIA4** is inserted (Rod 44-33 Is Stuck At Present Location).
 - b. Role play
 - (1) System Engineer (if asked about the performance / maintenance history of control rod 44-33) – “The seals for rod 44-33 were NOT replaced during the last outage. There are no previous problems noted in the history file for 44-33.”
5. **RCIC failure to auto isolate on an isolation signal**
 - a. Event Trigger - When directed by the Lead Examiner, **Activate Remote 1** and verify the following command(s):
 - (1) **A05_A02_A0204_1_TVM**
 - (2) **A05_A02_A09DS08_1 On**
 - b. Role play:
 - (1) Maintenance (if asked to investigate Div 2 Steam Line Diff Press High alarm malfunction) – “We’ll send a technician to the control room to gather information for the troubleshooting plan.”
 - (2) If RCIC Flow ATMs are checked:

ATM	Value	Trip Status
1E31-N690B	100% (300" H ₂ O) (upscale)	Tripped
1E31-N683B	100% (300" H ₂ O) (upscale)	Tripped
1E31-N690A	50% (0" H ₂ O)	Not tripped
1E31-N683A	50% (0" H ₂ O)	Not tripped
1E31-N691B	50% (0" H ₂ O)	Not tripped
1E31-N684B	50% (0" H ₂ O)	Not tripped
1E31-N691A	50% (0" H ₂ O)	Not tripped
1E31-N684A	50% (0" H ₂ O)	Not tripped

6. **#1 SA Compressor trips with failure of Standby Compressor to Auto Start**

- a. Event Trigger – Following Event 5 and when directed by the Lead Examiner, **Activate Remote 2** and verify the following command(s):
 - (1) **SA01B1SA1CFO**
 - (2) **SA01B0SA1CFTC**
- b. Role play (If requested):
 - (1) Maintenance (investigate loss of service air pressure or failure of compressor to start) – Report, “I will brief and dispatch personnel to investigate”.
 - (2) EO (investigate trip of 1SA01C) – Report, “The breaker for 1SA01C is tripped on overcurrent. There are no abnormalities locally. 0SA01C is operating normally.”
 - (3) EO (if directed to support shifting standby Service Air Compressors – acknowledge the order and report, “I’m on my way up to get a brief”.

7. **Earthquake / Loss of Main Condenser vacuum / ATWS**

- a. Event Trigger - Following Event 6 and when directed by the Lead Examiner, **Activate Remote 3** and verify the following command(s):
 - (1) **SEISMIC_VALUE 0.25g**
 - (2) **A04_ A08_02_1_TVM**
 - (3) **A04_ A05_01_4_TVM**
 - (4) **A04_ A05_01_3_TVM**
- b. Role play
 - (1) Security (if asked if ground motion felt): “I’ve had several security officers report that ground motion was felt”.
 - (2) EO (when directed to investigate loss of condenser vacuum): “I will verify Travelling Screens/Screenwash operating properly and verify the Vacuum Breaker Loop Seal is filled.”
 - (3) EO (if asked to check RFP Seal Tank Level) – “1LIC-TD040 is in auto; level is in the green band controlling at 10”.
 - (4) EO (if asked to make preparations to startup a Condenser Vacuum Pump): “I’m on my way to the WEC office for a brief”.
 - (5) Booth operator (when asked to defeat ATWS interlocks per 4410.00C012 Defeating ATWS Interlocks) - defeat the following isolations (using the ATWS actions in the simulator lesson plan) in the order provided by the ATC:
 - a) Defeat IA Isolations
 - b) Defeating RPS Logic Trips
 - c) Defeating Rod Pattern Controller
 - d) Defeating ARI Logic Trips
 - (6) Maintenance (after 2 minutes from scram announcement) – report to the MCR as IMD.

8. **CRD Pump ‘B’ Trips During ATWS**

- a. Event Trigger – Triggered when RMS is placed in shutdown during event 7.
- b. Role play
 - (1) EO (when directed to open 1C11-F116, Suct Filt Bypass and 1C11-F117, Suct Filt Bypass for 4411.08): “1C11-F116 and 1C11-F117 are open.”)
 - (2) EO (when directed to shut/verify shut 1C11-F014A, Pump A Stop Chk Discharge Valve for 4411.08): Insert **YP_XREMT_697 Normal** and report, “1C11-F014A is shut.”
 - (3) EO (when directed to open 1C11-F014A, Pump A Stop Chk Discharge Valve for 4411.08): Insert **YP_XREMT_697 Open** and report, “1C11-F014A is open.”

Turnover

1. **Day of week and shift**
 - Today day shift
2. **Weather conditions**
 - Calm and clear.
3. **Plant power level**
 - The plant is in Mode 1, operating at ~ 10% power.
 - RR Pumps A and B are operating in slow speed with FCVs at 90%/90%. 346 MWt, 0 MWe, 27.3 Mlbm/hr Core Flow.
 - CPS 3002.01 Heatup and Pressurization is complete with the exception of placing a TDRFP in rolling standby (to be performed at 15% power).
 - CPS 3004.01 Turbine Startup and Generator Synchronization is in progress. Section 5.0 Prerequisites are complete. Steps 8.1.1 – 8.1.5 are complete.
 - Control rods – On Step 12. Gang 3C is at position 48.
 - MDRFP is on the MLC in automatic.
4. **Thermal Limit Problems/Power Evolutions**
 - Continue with power ascension to 15% IAW Step 8.1.6 of CPS 3004.01. The RE has requested single rod, single notch rod motion. After reaching 15% power:
 - Place TDRFP 'A' in rolling standby IAW Step 8.6.3 of CPS 3002.01.
 - Perform Turbine Roll IAW Step 8.1.8 of CPS 3004.01.
5. **LCO's in effect**
 - None
6. **Surveillances in progress**
 - CPS 9061.03C012/D012 – Week 12 – SF Valve Operability Checklist
7. **Status of Tagged Out Equipment**
 - None
8. **Previous Shift Evolutions completed**
 - SF System was secured to support performance of CPS 9061.03C012/D012.
9. **Evolutions planned for the shift**
 - Priority 1 - Perform CPS 9061.03C012 Week 12 – CM, SF, SM, LD ISOL Valve Operability Checklist sections 8.12.6 and 8.12.7 (Method B). Position indication testing is NOT required. Do NOT restart SF after the completion of 9061.03C012/D012.
 - Priority 2 - Continue with power ascension to 15% IAW Step 8.1.6 CPS 3004.01.
10. **Risk Levels**
 - Green
 - Protected Equipment: FC 'B'
11. **Dose equivalent Iodine 131**
 - Reading 1.5 E-6 μ curies per gram.