

CLINTON POWER STATION

Job Performance Measure

MANUAL STARTUP OF A DIESEL FIRE PUMP (ALTERNATE PATH)

JPM Number: JPM244

Revision Number: 02

Date: 10/09/14

Developed By:	Bill Kiser	10/09/14
	Instructor	Date
Validated By:		
	SME or Instructor	Date
Reviewed By:		
	Operations Representative	Date
Approved By:		
	Training Department	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 3213.01 Rev: 29c
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	08/20/08	New JPM.
01	04/20/11	Updated to new template.
02	06/06/12	Updated to new template.
03	10/09/14	Revision due to procedure and template revision.

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

Simulator Setup Instructions

1. Initialize to any suitable IC with N/A
2. Open and execute Simulator Lesson Plan JPM### which will perform the following: N/A
3. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable. N/A
4. This completes the setup for this JPM. N/A
5. Save to a different IC if JPM is being used more than once. IC-## is saved for the 2010 LORT Annual Operating Exam. N/A
6. Freeze Simulator. N/A

**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:

- Using CPS No. 3213.01, FIRE DETECTION AND PROTECTION, perform an emergency start of a diesel fire pump by opening the fuel solenoid and engaging the starter manually.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 3213.01, FIRE DETECTION AND PROTECTION.

EVALUATOR INSTRUCTIONS:

- The “B” Fire Pump is selected for this JPM.
- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- Have a PCS phone to get access to Screenhouse by calling ext. 2986.
- Placekeep (mark-up) procedure steps for prerequisites (8.5.1 through 8.5.7).
- Provide Initiating Cue in the R&S Line in the Radwaste Building.

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

INITIAL CONDITIONS:

A fire exists in the plant and the fire brigade is preparing fire hoses to combat the fire. The “A” Diesel Driven Fire Pump is out of service for repairs and the “B” Diesel Driven Fire Pump has failed to automatically start and could not be started from the MCR per CPS 3213.01 step 8.5.8.1.

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.

Perform a local startup of the “B” Diesel Driven Fire Pump per CPS No. 3213.01.

Prestart checks are complete per steps 8.5.1 through 8.5.7.

Report to 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

CPS No. 3213.01 FIRE DETECTION AND PROTECTION

NOTE

1. *0FP01PA(0FP01PB) - NFPA codes require diesel engine operation at rated speed for a minimum of 30 minutes.*
2. *Operating diesel engine for 60 minutes at rated speed prolongs engine life.*
3. *The following 4 starting methods are listed in order of preference, as needed the operator may use any of the methods listed.*

8.5.8 Start the Diesel Fire Pumps 0FP01PA (0FP01PB)
by one of the following 4 methods:

-
- 8.5.8.1 Start Pushbutton Start of 0FP01PA(B)
1. Verify / place control switch (local panel) in AUTO.
 2. Depress Diesel Fire Pump “A”(“B”), 0FP01PA(B)
Start pushbutton on 1H13-P840.
 3. Time Diesel Fire Pump was started. TIME: _____

Standard: N/A

Cue: None

Comments Performed by MCR per Initial Conditions. No Action required.

SAT UNSAT Comment Number _____

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

CAUTION
After starting an engine per 8.5.8.2, taking the 0FP01PA(B) Main Control Switch out of Test will result in fire pump shutdown unless a valid start signal is present.

- 8.5.8.2 Main Control Switch to TEST Start of 0FP01PA(B)
1. Place 0FP01PA (0FP01PB) Main Control Switch in TEST.
 ☞ This will simulate a pressure loss in the system.
 2. Time Diesel Fire Pump was started. TIME: _____

Standard: Simulates placing the Diesel Fire Pump “B” Main Control Switch in TEST.

Cue: Component is in the position as described.
No cranking noise is heard. Diesel Fire Pump has not started.

Comments

SAT UNSAT Comment Number _____

- 8.5.8.3 Start Pushbutton Start of 0FP01PA(B)
1. Place 0FP01PA (0FP01PB) Main Control Switch to MANUAL 1 or MANUAL 2.
 2. Depress Manual Start pushbutton until engine starts.
 3. Time Diesel Fire Pump was started. TIME: _____

Standard: Simulates placing the Main Control Switch in MANUAL 1 and/or MANUAL 2.
Simulates depressing Manual START Pushbutton.

Cue: Component is in the position as described.
Manual START Pushbutton is depressed.
No cranking noise is heard. Diesel Fire Pump has not started.

Comments

SAT UNSAT Comment Number _____

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

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

CAUTION

Use of the Mantrol Switch bypasses all Diesel Fire Pump alarms, therefore an operator should be present to frequently monitor engine operating parameters.

NOTE

If the Mantrol Switch is used to start the Diesel Fire Pump, it can only be stopped by placing the Mantrol switch to OFF.

8.5.8.4 Mantrol Switch Start of 0FP01PB

8.5.8.4. Mantrol Switch Start of 0FP01PA(B)

1. In order to utilize the Mantrol Switch, take the Mantrol Switch to START and hold in that position until the engine starts (located on the south side of the diesel engine).
2. Once the engine starts release the switch and it will spring return to RUN.
3. Time Diesel Fire Pump was started. TIME: _____

Standard: Simulates placing Mantrol switch in START and holding it there.

Cue: Component is in the position as described.
No cranking noise is heard. Diesel Fire Pump has not started.
If MCR is contacted, acknowledge report and state; "The fire is rapidly spreading and Diesel Fire Pump "B" needs to be started."

Comments

SAT UNSAT Comment Number _____

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

BEGIN ALTERNATE PATH

CAUTION

This procedure is to be used only if the Fire Pump Controller is out of service and therefore, an operator must be present to frequently monitor engine operating parameters.

***8.2.1 OPEN the fuel solenoid by turning the manual knob clockwise or in.**

Standard: Locates and simulates turning the FUEL SOLENOID knob.

Cue: Component is in the position as described.

Comments

SAT UNSAT Comment Number _____

***8.2.2 OPEN Cooling Water Bypass Strainer Isol Valve.**

1. DFP9A for 0FP01PA.
2. **DFP9B for 0FP01PB.**

Standard: Locates and simulates opening the correct valve.

- Cue:
- Component is in the position as described.
 - If asked, cue the examinee that flow noise can be heard.

Comments

SAT UNSAT Comment Number _____

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

***8.2.3 Engage the starter by raising either starting solenoid manual operators.
Release the manual operator as soon as the engine is running.**

Standard: Locates and simulates raising a starting solenoid manual operator, then releases when engine is running.

Cue: Inform the examinee:

- Immediately – engine cranking noise is heard.
- Diesel engine starts
- (5 seconds later) flow noise is heard from relief back to pit.
- If requested, provide information when examinee locates the indicator(s):
 - Engine speed – 2160 rpm
 - Engine coolant temperature - 180°F
 - Charging generator output - 5 amps
 - Pump discharge pressure - 170 psig
 - Angle Gear Drive Unit Sight Glass - oil spray is being seen
 - Cooling water inlet temperature - 75°F
 - Cooling water outlet temperature - 85°F

Comments

SAT

UNSAT

Comment Number _____

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

Task Completion

Standard: Informs CRS the Diesel Driven Fire Pump “B” is running.

Cue:

Comments

SAT

UNSAT

Comment Number _____

STOP TIME: _____

Clinton Power Station
Job Performance Measure (JPM)

Operator's Name: _____

Job Title: [] EO [] RO [] SRO [] STA [] SRO Cert

JPM Title: Manual Startup of a Diesel Fire Pump

JPM Number: JPM244 Revision Number: 03

Task Number and Title: 321301.37 - Perform Manual Operations of the Diesel Fire Pumps

Table with 4 columns: K/A System, K/A Number, Importance (RO/SRO). Row 1: 286000, A2.08, 3.2, 3.3. Description: Ability to (a) predict the impacts of the following on the FIRE PROTECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failure to actuate when required

Suggested Testing Environment: Simulator

Actual Testing Environment: [] Simulator [x] Plant [] Control Room

Testing Method: [x] Simulate [] Perform Alternate Path: [x] Yes [] No SRO Only: [] Yes [x] No

Time Critical: [] Yes [x] No

Estimated Time to Complete: 28 minutes Actual Time Used: _____ minutes

References: CPS No. 3213.01, Rev. 29c, FIRE DETECTION AND PROTECTION

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 fire exists in the plant and the fire brigade is preparing fire hoses to combat the fire. The “A” Diesel Driven Fire Pump is out of service for repairs and the “B” Diesel Driven Fire Pump has failed to automatically start and could not be started from the MCR per CPS 3213.01 step 8.5.8.1.

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.

Perform a local startup of the “B” Diesel Driven Fire Pump per CPS No. 3213.01.

Prestart checks are complete per steps 8.5.1 through 8.5.7.

Report to the CRS when the task is complete.

**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: 17b
 Procedure CPS 4003.01C002 Rev: 5a
 Procedure CPS 4003.01C003 Rev: 1
 Procedure OP-AA-101-111 Rev: 6
- _____ 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.

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

Simulator Setup Instructions

1. To establish initial conditions for JPM247, perform the following actions (not required if conditions have been shot into an exam IC):
 - a. Reset to any at power IC.
 - b. Turn off annunciators and horns.
 - c. Place Reactor Mode Switch in Shutdown and stabilize RPV level at -30 inches with the Motor Driven Reactor Feed Pump.
 - d. Close Inboard MSIVs.
 - e. Close 1B21-F016.
 - f. Place ALL 19 Remote Shutdown Panel Transfer Switches in the EMERGENCY position.
 - g. Open and execute Simulator Lesson Plan JPM247 to cause the RSP RCIC Flow Controller to be overridden in Manual.
 - h. Place the simulator in Run.
 - i. Depress the RCIC Flow Controller Close Pushbutton until controller output is at zero.
 - j. Save to a different IC if JPM is being used more than once. IC-207 (PW-91632) is saved for the 2014 ILT NRC Exam.
2. If an IC has been shot per step 1 above, reset the simulator to that IC. IC-207 (PW-91632) is saved for the 2014 ILT NRC Exam.
3. Verify command A17_A01_A02_4 RSP RCIC Turb Flow Controller – Man/Auto = Manual is active.
4. Place book of Remote Shutdown procedures in RSP Room.
5. Verify RCIC is not initiated.
6. Verify the RCIC controller at the Remote Shutdown Panel is in Auto set at 620 gpm.
7. Verify the RCIC suction is aligned to the RCIC Storage Tank.
8. No simulator lesson plan is required for this JPM once initial conditions have been established per step 1.
9. 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.
- When the examinee has acknowledged the initiating cue, provide him/her with the following procedures:
 - CPS 4003.01 Remote Shutdown (RS) – place kept up to but not including step 4.3.4 on page 9.
 - 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:

The Main Control Room has been evacuated due to a fire. Remote Shutdown, CPS No. 4003.01 has been completed up **through** step 4.3.4.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

The CRS directs you to startup RCIC system from the Remote Shutdown Panel and inject to the Reactor Vessel to restore and control RPV water level, Level 3 to Level 8 per 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 verifies the above 3 switches are rotated clockwise to 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 verifies the Transfer Switch C61-S4 is rotated clockwise to 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 verifies Transfer Switch C61-S5 is rotated clockwise to 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 \geq 3.2 ft, **or**
 Suppression Pool Level, C61-R504 \leq 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

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: If the examinee sends an Equipment Operator (EO) to the RCIC Room, cue him/her that the EO notes no abnormalities in the RCIC room and that the RCIC turbine is rotating slowly.

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

Table with 4 columns: K/A System, K/A Number, Importance (RO/SRO). Row 1: 217000, A2.10, 3.1, 3.1. Description: 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: [x] Simulator [] Plant [] Control Room
Testing Method: [] Simulate [x] Perform Alternate Path: [x] Yes [] No
SRO Only: [] Yes [x] No
Time Critical: [] Yes [x] No

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

References:
CPS 4003.01, REMOTE SHUTDOWN (RS), Rev. 17b
CPS 4003.01C002, RSP – RCIC OPERATION, Rev. 5a
CPS 4003.01C003, RSP – RCIC ALARM LIGHT RESPONSES, Rev. 1
OP-AA-101-111, ROLES AND RESPONSIBILITES OF ON-SHIFT PERSONNEL, Rev. 6*
* 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:

The Main Control Room has been evacuated due to a fire. Remote Shutdown, CPS No. 4003.01 has been completed up **through** step 4.3.4.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

The CRS directs you to startup RCIC system from the Remote Shutdown Panel and inject to the Reactor Vessel to restore and control RPV water level, Level 3 to Level 8 per 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 (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 3506.01 Rev: 37a
 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	04/01/11	New JPM.
01	07/17/12	Minor revision due to procedure revision.
02	10/09/14	Revision due to procedure and template revision.

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

Simulator Setup Instructions

1. Initialize to any suitable IC with N/A
2. Open and execute Simulator Lesson Plan JPM### which will perform the following: N/A
3. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable. N/A
4. This completes the setup for this JPM. N/A
5. Save to a different IC if JPM is being used more than once. IC-## is saved for the 2010 LORT Annual Operating Exam. N/A
6. Freeze Simulator. N/A

**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 Division III Diesel Generator overspeed device, safety shutdown relay, and Lockout Relays (86 devices) are reset IAW CPS No. 3506.01, Diesel Generator and Support Systems (DG).

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 3506.01, Rev 37a, Diesel Generator and Support Systems (DG)

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- Do NOT allow the examinee to shine any type light into a panel.
- Do NOT allow the examinee to climb on the Div 3 DG piping or platform to perform simulated operations or verifications. Instruct the examinee to describe the operation using guidance provided in CPS 3506.01 Diesel Generator and Support Systems (DG).
- Provide examinee with the procedure when asked.
- Provide the Initiating Cue in the R&S Line in the Radwaste Building.
- Ensure examinee checks doors after passing through them during the course of the examination.

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

INITIAL CONDITIONS: You are an Equipment Operator on watch, performing your rounds.

The Division III Diesel Generator tripped, due to an overspeed condition, while performing a post maintenance test run. The cause of the overspeed trip has been determined and corrected.

The following alarms are locked in at the Div 3 DG Control Panel 1E22-S001B:

- 5286-1B Overspeed
- 5286-2C Engine Tripped

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.

Reset the Division III Diesel Generator overspeed trip per CPS 3506.01, section 8.4.5.

Inform 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 3506.01 Diesel Generator and Support Systems (DG)

8.4.5 Resetting Overspeed Trip Device

- *8.4.5.1 On either the 12 or 16 cylinder engine,**
Pull down strongly (counter-clockwise rotation) on the overspeed reset lever until it stops and latches.
(It will only rotate a few degrees.)
IF the overspeed switch finger is preventing downward movement (counter-clockwise rotation) of the Reset Lever,
THEN push the Overspeed Switch finger towards engine centerline (pivot clockwise), and then latch the Reset lever.

- Standard:
- Examinee simulates pulling down on Reset Lever.
 - Examinee simulates pushing overspeed switch finger towards engine centerline.

- Cue:
- **IF** the examinee attempts to move the Reset Lever without repositioning the overspeed switch finger, **then** cue the operator that the Reset Lever doesn't move (the examinee should figure out what is restricting the required movement).
 - Overspeed switch finger is moved towards engine centerline.
 - Reset Lever is moved down and latched.

Comments

SAT UNSAT Comment Number _____

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

8.4.5.2 Verify match-marks are still aligned on the overspeed switch shaft/finger.

Standard: Examinee verifies match-marks are aligned.

Cue: Cue the examinee that the match-marks are aligned.

Comments Do NOT allow the examinee to climb on the Div 3 DG piping or platform.

SAT UNSAT Comment Number _____

8.4.5.3 Re-perform this sub-section for the other engine as applicable. (N/A for DG 1C)

Standard: N/A for DG 1C

Cue: None

Comments No action required.

SAT UNSAT Comment Number _____

8.4.5.4 Reset DG 1A (1B) [1C] lockout relay (s) per section 8.4.6.

Standard: Examinee proceeds to 8.4.6 **Resetting DG Lockout Relays** (all local actions)

Cue: None

Comments

SAT UNSAT Comment Number _____

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

NOTE

For DG 1C, Reset push-button, S7, resets the engine safety shutdown relays for the following:

- *Overcrank; Overspeed, Low Oil Pressure, High Water Temperature*

***8.4.6.1 For DG 1C (step N/A for DG 1A and 1B),
Reset engine safety shutdown relays by depressing the Safety RESET push-button (S-7) on 1E22-S001B (under the EMERGENCY STOP push-button).**

Standard: Examinee locates the Safety RESET push-button on 1E22-S001B.
Examinee depresses the Safety RESET push button.

Cue:

- Push button has been depressed.
- If the examinee requests the status of annunciator 5286-2C Engine Tripped, cue him/her that the alarm is locked in.
- If the examinee requests the status of annunciator 5286-1B Overspeed, cue him/her that the alarm is reset.

Comments

SAT UNSAT Comment Number _____

8.4.6.2 For DG 1A (1B) At 1PL12JA (B):
 1. Reset DG Lockout Relay (86 Device).
 2. Reset Exciter Field Circuit Breaker (41 device).

Standard: N/A for DG 1C

Cue: None

Comments No action required.

SAT UNSAT Comment Number _____

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

CAUTION
“Holding Engine/Generator Lockout in reset for greater than 2 seconds will damage the lockout relay”

***8.4.6.3.1 For DG 1C**
At 1E22-S001B:
Reset DG Lockout Relay (86 device).

Standard: Examinee locates DG Lockout Relay (86 device) on 1E22-S001B.
Examinee simulates rotating handle in CLOCKWISE direction until latched, but not greater than 2 seconds.

Cue: Handle is rotating in direction you have indicated. Handle is latched. White light is ON.

Comments When the 86 device is tripped, the handle will be rotated counterclockwise with the white light OFF. When reset, the handle will be vertical with the white light ON.

SAT UNSAT Comment Number _____

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

***8.4.6.3.2 For DG 1C
On 1H22-P028, HPCS Diesel Gen Prot Rly Panel:
Reset / verify reset Lockout Relay 1E22B-K1 (86G device).**

Standard: Examinee locates Lockout Relay 1E22B-K1 (86G device) on 1H22-P028.
Examinee simulates rotating handle in CLOCKWISE direction until latched, but not greater than 2 seconds.

Cue:

- Handle is rotating in direction you have indicated. Handle is latched. Blue light is ON. White light is OFF.
- If the examinee requests the status of annunciator 5286-2C Engine Tripped, cue him/her that the alarm is reset.

Comments

SAT UNSAT Comment Number _____

Task Completion

Standard: Examinee informs Control Room Supervisor the task is completed.

Cue: Acknowledge the report. State JPM is complete.

Comments

SAT UNSAT Comment Number _____

STOP TIME: _____

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

Operator's Name: _____

Job Title: EO RO SRO STA SRO Cert

JPM Title: Reset 1C Diesel Generator After an Overspeed Trip

JPM Number: JPM451 Revision Number: 02

Task Number and Title: 350601.32 Reset Overspeed Trip Device

K/A System	K/A Number	Importance (RO/SRO)	
264000	2.1.30	4.4	4.0
Emergency Generators (Diesel/Jet) - Ability to locate and operate components, including local controls.			

Suggested Testing Environment: Plant

Actual Testing Environment: Simulator Plant Control Room

Testing Method: Simulate **Alternate Path:** Yes No
 Perform **SRO Only:** Yes No

Time Critical: Yes No

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

References: CPS No. 3506.01, Rev 37a, Diesel Generator and Support Systems (DG)

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 an Equipment Operator on watch, performing your rounds.

The Division III Diesel Generator tripped, due to an overspeed condition, while performing a post maintenance test run. The cause of the overspeed trip has been determined and corrected.

The following alarms are locked in at the Div 3 DG Control Panel 1E22-S001B:

- 5286-1B Overspeed
- 5286-2C Engine Tripped

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.

Reset the Division III Diesel Generator overspeed trip per CPS 3506.01, section 8.4.5.

Inform the CRS after completing the task.

CLINTON POWER STATION

Job Performance Measure

Restore RPV Water Level Using Low Pressure ECCS (Alternate Path)

JPM Number: JPM416

Revision Number: 00

Date: 10/23/14

Developed By:	Tony Jennings	10/23/14
	Instructor	Date
Validated By:		
	SME or Instructor	Date
Reviewed By:		
	Operations Representative	Date
Approved By:		
	Training Department	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 3313.01 Rev: 16d
Procedure CPS 3312.01 Rev: 45b
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	10/23/14	New JPM.

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

Simulator Setup Instructions

1. Initialize to any suitable IC which will establish the following conditions:
 - RPV level between Level 1 and Level 3
 - RPV Inlet Valves 1B21-F065A and 1B21-F065B shut
 - RPV pressure less than 55 psig (below the discharge head of the LPCS and RHR 'A' pumps).
 - Drywell Pressure less than 1.68 psig
 - Division 1 ECCS initiation logic not sealed in
 - HPCS Pump shaft sheared.
 - 4160V Bus 1B1 de-energized.
2. Open and execute Simulator Lesson Plan ILT 14-1 NRC Exam JPM LPs.
3. Release JPM416 which will establish the following:
 - S_A05_A02_A09S61B_1 LPCS/LPCI FM RHR A MAN INIT PB overridden in the 'Release' position.
 - Insert malfunctions LP17BE21C1FTC LPCS Pump Bkr Fails To Close and RH51BE12C2AFTC RHR Pump A Bkr Fails To Close.
4. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
5. This completes the setup for this JPM.
6. Save to a different IC if JPM is being used more than once. IC-209 (PW-91632) is saved for the 2014 ILT NRC Exam.
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:

- Either Low Pressure Core Spray Pump or Residual Heat Removal Pump 'A' is running and injecting into the RPV maintaining RPV level between +8.9 inches (Level 3) and +52 inches (Level 8).

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS 3313.01, Rev 16d LOW PRESSURE CORE SPRAY (LPCS)
- CPS 3312.01, Rev. 45b RESIDUAL HEAT REMOVAL (RHR)

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- This JPM is written to trip the first ECCS Pump (LPCS or RHR 'A') that the examinee attempts to start, requiring the examinee to use the opposite pump to restore RPV water level (alternate path).

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

INITIAL CONDITIONS:

You are the 'B' RO.

Plant conditions are as follows:

- A loss of high pressure injection has caused low Reactor water level.
- 4160V Bus 1B1 has de-energized due to a fault.

INITIATING CUE:

CAUTION

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

You are directed to restore RPV Level between Level 3 and Level 8 using available Low Pressure ECCS pumps.

Hard card use is authorized.

Report to the Control Room Supervisor 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

CPS 3312.01 Appendix C: LPCI Initiation/Shutdown Hard Card
CPS 3313.01 Appendix A: LPCS Initiation/Shutdown Hard Card

1 Arm and Depress LPCS/LPCI FM RHR A MANUAL INITIATION push-button.

Standard: At 1H13-P601-5063, examinee rotates the collar of the LPCS/LPCI FM RHR A Manual Initiation push-button clockwise to the ARM position, and then depresses the pushbutton.

Examinee determines that neither the LPCS nor RHR Pump ‘A’ have started by observing the pump green indicating lights remain illuminated and the red lights remain extinguished.

Cue: As CRS acknowledge the report that neither the LPCS nor RHR Pump ‘A’ has started.

Comments Operator should recognize that the LPCS and LPCI ‘A’ initiation logic is not operable and proceed to 3312.01 (RHR) or 3313.01 (LPCS) section 8.1.4 (Manual Initiation – Logic Not Operable).

The examinee may also attempt to start the LPCS or RHR ‘A’ Pump using the pump control switch (taking manual actions for auto actions that did not occur).

SAT UNSAT Comment Number _____

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

3312.01 / 3313.01 Section 8.1.4 Manual Initiation – Logic Not Operable

2 Starts LPCS Pump, 1E21-C001 OR RHR Pump ‘A’, 1E12-C002A.

Standard: Operator rotates the pump control switch clockwise for 1E21-C001 to the ‘START’ position at 1H13-P601-5063, OR

Operator rotates the pump control switch clockwise for 1E12-C002A to the ‘START’ position at 1H13-P601-5064.

Operator observes that the chosen pump has tripped (green and amber lights lit, red light extinguished).

Cue: If the examinee reports that the chosen pump has tripped, acknowledge the report.

Comments

SAT UNSAT Comment Number _____

Begin Alternate Path

***3 Starts the un-tripped Div 1 ECCS Pump (RHR Pump ‘A’ OR LPCS Pump).**

Standard: Operator rotates the pump control switch clockwise for 1E12-C002A to the ‘START’ position at 1H13-P601-5064, OR

Operator rotates the pump control switch clockwise for 1E21-C001 to the ‘START’ position at 1H13-P601-5063.

Operator observes that the chosen pump has started (green and amber lights extinguished, red light illuminated). Observes associated motor current meter pegs high, and then drops into the meter green band.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

***4 When RPV pressure is < 472 psig, open LPCS/RHR ‘A’ Injection Valve (1E21-F005 OR 1E12-F042A).**

- Standard:
- Operator turns the control switch for the running ECCS Pump Injection Valve (1E21-F005 or 1E12-F042A) clockwise to the ‘OPEN’ position. Observes RED light illuminates and the green light extinguishes.
 - Operator observes the running ECCS Pump flow indicator (E21-R600 or E12-R603A) is increasing.

Cue: None

Comments Per the initial conditions, RPV pressure is already less than 472 psig.

SAT UNSAT Comment Number _____

5 Restore and maintain level using 1E21-F005, LPCS To CNMT Outbd Isol Valve or 1E12-F042A LPCI Fm RHR A Shutoff Valve.

Standard: The operator observes RPV water level rising using any of the RPV Water Level indicators in the MCR (will probably use 1E12-R623A (1H13-P601-5064) and/or 1E12-R623B (1H13-P601-5065). Injects and restores level above Level 3.

Cue:

Comments If RPV level rises above Level 8 it is not a critical task failure; however, a competency comment.

SAT UNSAT Comment Number _____

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

Task Completion

Standard: Informs Control Room Supervisor that RPV Level is between Level 3 and Level 8.

Cue: Acknowledge the report. State JPM is complete.

Comments

SAT

UNSAT

Comment Number _____

STOP TIME: _____

Note to Examiner: Notify the simulator operator when the JPM is complete so he can reset the simulator.

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

INITIAL CONDITIONS:

You are the 'B' RO.

Plant conditions are as follows:

- A loss of high pressure injection has caused low Reactor water level.
- 4160V Bus 1B1 has de-energized due to a fault.

INITIATING CUE:

CAUTION

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

You are directed to restore RPV Level between Level 3 and Level 8 using available Low Pressure ECCS pumps.

Hard card use is authorized.

Report to the Control Room Supervisor when the task is complete.

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 3408.01 Rev: 18b
 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	10/13/14	New JPM.

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

Simulator Setup Instructions

1. Initialize to any Mode 4 IC with Containment Building Ventilation and Continuous Containment Purge systems secured and CCP ready for startup.
2. Ensure clearance tags are removed from the following P800 VR/VQ Control Switches:
 - a. 1VR001A CNMT BLDG SPLY OUTBD ISOL VLV
 - b. 1VR002A CNMT BLDG SPLY OUTBD ISOL BYP VLV
 - c. 1VR001B CNMT BLDG SPLY INBD ISOL VLV
 - d. 1VR002B CNMT BLDG SPLY INBD ISOL BYP VLV
 - e. 1VQ001A DW PRG SPLY OUTBD ISOL VLV
 - f. 1VQ001B DW PRG SPLY INBD ISOL VLV
 - g. 1VQ006B CNMT BLDG EXH INBD ISOL BYP VLV
 - h. 1VQ006A CNMT BLDG EXH OUTBD ISOL BYP VLV
 - i. 1VQ004A CNMT BLDG EXH/PRG OUTBD ISOL VLV
 - j. 1VQ004B CNMT BLDG EXH PRG INBD ISOL VLV
3. Ensure/place the control switch for 1VQ004B CNMT BLDG EXH PRG INBD ISOL VLV in AUTO.
4. Ensure/place the control switch for 1VQ004A CNMT BLDG EXH/PRG OUTBD ISOL VLV in AUTO.
5. Place / verify the CCP Joystick in the “Neutral” position.
6. Open and execute Simulator Lesson Plan ILT 14-1 NRC Exam JPM LPs.
7. Release JPM417 which will insert an override on the CNMT CONTINUOUS PRG MODE SWITCH in the Neutral position (S_A18_A03_S08 = 5 Neutral)
4. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
5. This completes the setup for this JPM.
6. Save to a different IC if JPM is being used more than once. IC-206 (PW 91632) is saved for the ILT 14-1 NRC Exam.
7. Freeze Simulator.

**Clinton Power Station
Job Performance Measure (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 Containment Building Ventilation System is running in Containment Vent Mode per CPS 3408.01 Containment Building / Drywell HVAC (VR, VQ).

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 3408.01, Rev 18b Containment Building / Drywell HVAC (VR, VQ)

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:

You are the 'B' RO.

The plant is in Mode 4 performing a maintenance outage.

Containment Ventilation has been secured per CPS 3408.01 CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ) section 8.1.3 Shutdown Continuous Containment Purge, Unfiltered Mode.

There are no isolation signals present.

Facility Maintenance has a critical path job to paint a repaired pipe weld in the containment scheduled for this shift.

Containment Ventilation is required to support the critical path work.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

The CRS has directed you to startup Continuous Containment Purge in the Unfiltered Mode per CPS 3408.01 section 8.1.1.1 Startup Continuous Containment Purge Unfiltered (Auto) starting at step 8.1.1.1.3 to support the critical path painting activity in the Containment.

Use the 'A' Fans.

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 3408.01 CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ)

8.1.1.1 Startup Continuous Containment Purge Unfiltered (Auto)

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1	Examinee attempts to startup the Continuous Containment Purge System in the Unfiltered Mode (Auto) (fails).	8.1.1.1.3 Examinee determines that the valve alignment verifications listed in the step are not applicable in Mode 4.			
		8.1.1.1.4 On 1H13-P800-5043, the examinee verifies the control switches for 1VR006A, 6B, 7B, and 7A are in the center position (Auto) with the green indicating lights lit and the red indicating lights extinguished.			
		8.1.1.1.5 On 1H13-P800-5042, the examinee rotates the control switch for 1VQ003 DW Prg Cnmt Exh Inbd Isol Vlv fully clockwise and verifies the red light illuminates and the green light extinguishes.			
		8.1.1.1.6 & 7 On 1H13-P800-5043, the examinee verifies that the 1VR06CA/CB and 7CA/CB Selector switches are in the 06CA LEAD and 07CA LEAD positions.			
		8.1.1.1.8 <ul style="list-style-type: none">• On 1H13-P800-5043, operator depresses the center release button on 1HS-VR101, positions the joystick to the UNFILT position (to the right), and then observes that none of the system valves reposition or the system fans start.• Examinee reports failure of the CCP system to			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
		align and start correctly. Cues: <ul style="list-style-type: none"> • When the failure is reported, acknowledge the report • If the examinee asks for further direction, cue him/her that containment ventilation is needed to support the critical path work. 			

Begin Alternate Path

2	Examinee attempts to startup the Continuous Containment Purge System in the Unfiltered Mode (Manual Operation) (fails). Note to evaluator – JPM step 2 is NA if the examinee elects to startup the Containment Building Ventilation System in Containment Vent Mode Manual or Auto (JPM Step 3 and 4)	8.2.1.1.1 / 8.1.3 Examinee secures the CCP system per section 8.1.3 of 3408.01.			
		8.2.1.1.4 On 1H13-P800-5042, the examinee rotates the control switch for 1VQ003 DW Prg Cnmt Exh Inbd Isol Vlv fully clockwise and verifies the red light illuminates and the green light extinguishes.			
		8.2.1.1.5 On 1H13-P800-5043, operator depresses the center release button on 1HS-VR101, positions the joystick to the MANUAL position (to the top).			
		8.2.1.1.6 & 8.2.1.1.7 On 1H13-P800-5043, the examinee verifies that the 1VR06CA/CB and 7CA/CB Selector switches are in the 06CA LEAD and 07CA LEAD positions.			
		8.2.1.1.8 <ul style="list-style-type: none"> • On 1H13-P800-5043, the examinee rotates the control switch for 1VR006A clockwise to the OPEN position and observes NO change in valve position. • Examinee reports failure of the CCP system to align and start correctly. Cues: <ul style="list-style-type: none"> • When the failure is reported, acknowledge the report • If the examinee asks for further direction, cue him/her that containment ventilation is needed to support the critical path work. 			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
3	<p>Examinee starts the Containment Building Ventilation System in Containment Vent Mode (Manual).</p> <p>Note to evaluator – JPM step 3 is NA if the examinee elects to startup the Containment Building Ventilation System in Containment Vent Mode (Auto) (JPM Step 4)</p>	<p>*8.2.1.2.1 / 8.1.3</p> <p>Examinee secures the CCP system per section 8.1.3 of 3408.01.</p>			
		<p>8.2.1.2.2</p> <p>On 1H13-P800-5042, the examinee verifies the CNMT Bldg Vent Sys Switch is in the MANUAL position (rotated counterclockwise).</p>			
		<p>8.2.1.2.3</p> <p>On 1H13-P800-5042, the examinee verifies the CNMT BLDG SPLY FAN 1VR03CA/CB SELECTOR SWITCH is in FAN A FAST position.</p>			
		<p>8.2.1.2.4</p> <p>On 1H13-P800-5042, the examinee verifies the CNMT BLDG EXH FAN 1VR04CA/CB SELECTOR SWITCH is in FAN 4CA position.</p>			
		<p>*8.2.1.2.6</p> <p>On 1H13-P800-5042, the examinee rotates the control switches for 1VR001A, 1VR001B, 1VQ004B, 1VQ004A, 1VQ003, and 1VQ01Y clockwise to the OPEN position, and verifies the red light illuminates and the green light extinguishes for each valve.</p>			
		<p>*8.2.1.2.7</p> <p>On 1H13-P800-5042, the examinee rotates the control switch for CNMT Bldg Exh Fan 4CA to the START position, releases the switch, and then verifies the red light illuminates and the green light extinguishes. Examinee also verifies that the red light illuminates and the green light extinguishes for CNMT Bldg Exh Fan 4CA Isol Dmpr 1VR08YA.</p>			
		<p>*8.2.1.2.8</p> <p>On 1H13-P800-5042, the examinee rotates the control switch for CNMT Bldg Sply Fan 3CA to the START position, releases the switch, and then verifies the red light illuminates and the green light extinguishes. Examinee also verifies that the red lights illuminate and the green lights extinguish for CNMT Bldg Sply Fan 3CA Isol Dmpr 1VR02YA and CNMT Bldg Outside Air Sply Int Dmpr 1VR01Y.</p>			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		8.2.1.2.9 Examinee contacts an Equipment Operator to turn 1VR01A on. Cues: <i>If the examinee requests outside air temperature, cue him / her that outside air temperature is 55°F.</i>			
		8.2.1.2.10 Operator directs an Equipment Operator to start/verify running 1VR12C. Cues: <i>1VR12C is running.</i>			
		8.2.1.2.11 Operator contacts Chemistry to perform CPS 1024.35 Control of Radioactive Effluents as necessary. Cues: <i>Acknowledge the direction from the operator. State that the JPM is complete.</i>			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
4	Examinee starts the Containment Building Ventilation System in Containment Vent Mode (Auto). Note to evaluator – JPM step 4 is NA if the examinee elects to startup the Containment Building Ventilation System in Containment Vent Mode (Manual) (JPM Step 3)	*8.1.1.3.1 / 8.1.3 Examinee secures the Continuous Containment Purge System.			
		*8.1.1.3.3 On 1H13-P800-5042, the examinee rotates the CNMT BLDG VENT SYS SWITCH clockwise to the AUTO position.			
		*8.1.1.3.4 On 1H13-P800-5042, the examinee rotates the control switch for 1VQ003 DW Prg Cnmt Exh Inbd Isol Vlv clockwise to the AUTO position.			
		8.1.1.3.5 On 1H13-P800-5042, the examinee verifies that the CNMT BLDG SPLY FAN 1VR03CA/CB SELECTOR SWITCH is in FAN A FAST position.			
		8.1.1.3.6 On 1H13-P800-5042, the examinee verifies that the CNMT BLDG EXH FAN 1VR04CA/CB SELECTOR SWITCH is in FAN 4CA position.			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		<p>*8.1.1.3.7</p> <p>On 1H13-P800-5042, the examinee depresses the center release button on 1HS-VR001 and then positions the joystick to the top position (CNMT VENT) and then observes the following:</p> <ul style="list-style-type: none"> • Supply Fan 1VR03CA starts (green light OFF, red light ON) • 1VR02YA opens (green light OFF, red light ON) • 1VR01Y opens (green light OFF, red light ON) • 1VR001A opens (green light OFF, red light ON) • 1VR001B opens (green light OFF, red light ON) • 1VQ003 opens (green light OFF, red light ON) • 1VQ004B opens (green light OFF, red light ON) • 1VQ004A opens (green light OFF, red light ON) • 1VQ01Y opens (green light OFF, red light ON) • Exhaust Fan 1VR04CA starts (green light OFF, red light ON) • 1VR08YA opens (green light OFF, red light ON) 			
		<p>8.1.1.3.8</p> <p>Examinee contacts an Equipment Operator to turn 1VR01A on.</p> <p>Cues:</p> <ul style="list-style-type: none"> • <i>If the examinee requests outside air temperature, cue him / her that outside air temperature is 55°F.</i> 			
		<p>8.1.1.3.9</p> <p>Operator asks if cooling is desired.</p> <p>Cues:</p> <ul style="list-style-type: none"> • <i>Cooling is not desired.</i> 			

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		8.1.1.3.10 Operator directs an Equipment Operator to start/verify running 1VR12C. Cues: <ul style="list-style-type: none"> • 1VR12C is running. 			
		8.1.1.3.11 Operator contacts Chemistry to perform CPS 1024.35 Control of Radioactive Effluents as necessary. Cues: <ul style="list-style-type: none"> • Acknowledge the direction from the operator. 			
		8.1.1.3.12 On 1H13-P800-5042 the Operator rotates the control switches for the running fans (1VR03CA and 1VR04CA) clockwise to the after start position, releases each control switch, and then verifies annunciator 5042-5G AUTO START VR SYSTEM SUP/EXH FAN resets. Cues: <i>State that the JPM is complete.</i>			

TERMINATING CUES:

The Containment Building Ventilation system is operating in Containment Vent Mode IAW CPS 3408.01 Containment Building /Drywell HVAC (VR, VQ).

STOP TIME: _____

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

INITIAL CONDITIONS:

You are the 'B' RO.

The plant is in Mode 4 performing a maintenance outage.

Containment Ventilation has been secured per CPS 3408.01 CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ) section 8.1.3 Shutdown Continuous Containment Purge, Unfiltered Mode.

There are no isolation signals present.

Facility Maintenance has a critical path job to paint a repaired pipe weld in the containment scheduled for this shift.

Containment Ventilation is required to support the critical path work.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

The CRS has directed you to startup Continuous Containment Purge in the Unfiltered Mode per CPS 3408.01 section 8.1.1.1 Startup Continuous Containment Purge Unfiltered (Auto) starting at step 8.1.1.1.3 to support the critical path painting activity in the Containment.

Use the 'A' Fans.

Report to the CRS after completing the task.

**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 9080.02 Rev: 52a
 Procedure _____ Rev: _____
 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	10/28/14	New JPM.

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

Simulator Setup Instructions

1. Initialize to any suitable IC that will support the DG 1B Operability Test.
2. Perform/verify the following panel manipulations:
 - Start Diesel Generator 1B
 - DG 1B Output Breaker Synch Switch is off with the key removed.
 - Make sure recorder power is on to allow the SVC Voltmeter to indicate.
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-205 OR IC-206 is saved for the 2014 ILT NRC Exam (password 91632).
6. Turn synchroscope ON, adjust DG speed as necessary to ensure clockwise rotation of synchroscope, and then turn synchroscope OFF.
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:

- Examinee parallels and loads Diesel Generator 1B.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 3506.01C002, Rev 12 DIESEL GENERATOR 1B PRE-START CHECKLIST
- CPS No. 3506.01C005, Rev 1a DIESEL GENERATOR START LOG
- CPS No. 3506.01D002, Rev 5a DIESEL GENERATOR 1B OPERATING LOGS
- CPS No. 9080.02, Rev 52a DIESEL GENERATOR 1B OPERABILITY – MANUAL AND QUICK START OPERABILITY
- CPS No. 9080.02D001, Rev 43 DIESEL GENERATOR 1B OPERABILITY – MANUAL AND QUICK START DATA SHEET

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:

You are the 'B' Reactor Operator.

The plant is in a normal electrical power lineup.

DG 1B was started per CPS 9080.02, Diesel Generator 1B Operability – Manual and Quick Start Operability, and is complete through step 8.2.11.

An Area Operator is stationed in the 'B' DG Room for the surveillance.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

You are directed to parallel Diesel Generator 1B with Offsite Power and load to ~ 3700 KW, for a 1 hour run, per CPS 9080.02, beginning at step 8.2.12.

Report to the CRS when Diesel Generator 1B load is ~ 3700 KW.

START TIME: _____

NOTE TO EVALUATOR

When the Initiating Cue has been read by the student and acknowledged, provide a MARKED UP copy of CPS 9080.02, Diesel Generator 1B Operability – Manual and Quick Start Operability to the examinee.

**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 9080.02 Diesel Generator 1B Operability – Manual and Quick Start Operability
8.2.12 Load the DG per the following:**

***8.2.12.1 Place DG 1B Output Bkr Sync switch to the ON position.**

Standard: At 1H13-P877-5061, the examinee inserts a key and turns the DG 1B Output Bkr Sync switch to the ON position.

Cue: None

Comments

SAT UNSAT Comment Number _____

***8.2.12.2 Adjust DG 1B voltage so that INCOMING voltage is matched with RUNNING voltage.**

Standard: At 1H13-P877-5061, the examinee adjusts DG 1B voltage regulator control switch while monitoring 4160V Bus 1B1 Incoming Voltage and Running Voltage Meters (on either side of the synchroscope) so that INCOMING voltage is matched with RUNNING voltage.

Cue: None

Comments Steps 8.2.12.2 and 8.2.12.3 may be performed in any order and repeated as necessary to achieve conditions needed to synchronize.

SAT UNSAT Comment Number _____

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

- *8.2.12.3 Adjust DG 1B speed with DG 1B Governor control switch such that DG frequency is slightly greater than bus frequency as indicated by the following:**
- 1) CLOCKWISE rotation of the synchroscope at a speed of approximately one revolution every 60-120 sec. (i.e., ½ - 1 RPM) or slower.**
 - 2) Both synchroscope lights are extinguished at the 12 o'clock position.**
 - 3) Both synchroscope lights are brightly lit at the 6 o'clock position.**

Standard: At 1H13-P877-5061, the examinee adjusts the DG 1B governor control switch while monitoring synchroscope rotation and lights until:

- Synchroscope is rotating slowly in the clockwise direction
- Both synchroscope lights are extinguished at 12 o'clock
- Both synchroscope lights are brightly lit at 6 o'clock

Cue: None

Comments

SAT UNSAT Comment Number _____

- 8.2.12.4 **IF** During the time that the DG is paralleled with the grid any of the following occur:
- Rapid change in DG output voltage,
 - Rapid change in DG frequency,
 - Rapid change in DG KW,
 - Rapid change in DG KVAR,
- THEN:** Trigger TT for future NSED analysis.

Standard: No action required at this time.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

- *8.2.12.5.1** WHEN the synchroscope's pointer nears the vertical (12 o'clock) position and the synchronizing lamps go dark,
1) Close DG 1B Output Bkr, 1AP09EH.

Standard: At 1H13-P877-5061, when the synchroscope pointer nears 12 o'clock, the examinee rotates the handswitch for DG 1B Output Breaker 1AP09EH to CLOSE and observes Red light ON and Green light OFF.

Cue: None

Comments

SAT UNSAT Comment Number _____

- *8.2.12.5.2** Promptly load DG 1B to at least 100-200 KW.

Standard: At 1H13-P877-5061, while observing the DG 1B Output Watts meter, the examinee immediately loads DG to 100 - 200 KW by taking DG 1B Governor control switch to RAISE before DG 1B trips on reverse power.

Cue: None

Comments Examinee will most likely "bump" the governor control switch in the raise position multiple times to adjust DG 1B load, which is a satisfactory way to operate the governor and voltage regulator controls.

SAT UNSAT Comment Number _____

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

8.2.12.5.3 Preferable VAR's loading is between 500 to 0 KVAR (0.8 lagging and 1.0 power factor); adjust as necessary.

Standard: At 1H13-P877-5061, while monitoring DG 1B Output VARs meter, the examinee adjusts VAR loading as necessary using the DG 1B Voltage Regulator control switch.

Cue: None

Comments

SAT UNSAT Comment Number _____

***8.2.12.6 Gradually load DG 1B, at a rate of ~1000 KW per minute, to 3600 to 3800 KW as indicated on computer point DG-BA505 (Alt: TT Ch 17).**

Standard: At 1H13-P877-5061, while monitoring computer point DG-BA505, the examinee gradually loads DG 1B to ~ 3700 KW by taking the DG 1B Governor Control Switch to RAISE.

Cue: None

Comments JPM may be terminated when reactive load (VARs) are within range (500-0 KVAR) and generator load is being raised.

SAT UNSAT Comment Number _____

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

Task Completion

Standard: Informs Control Room Supervisor that DG 1B load is ~ 3700 KW.

Cue: Acknowledge the report. State JPM is complete.

Comments

SAT

UNSAT

Comment Number _____

STOP TIME: _____

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

INITIAL CONDITIONS:

You are the 'B' Reactor Operator.

The plant is in a normal electrical power lineup.

DG 1B was started per CPS 9080.02, Diesel Generator 1B Operability – Manual and Quick Start Operability, and is complete through step 8.2.11.

An Area Operator is stationed in the 'B' DG Room for the surveillance.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

You are directed to parallel Diesel Generator 1B with Offsite Power and load to ~ 3700 KW, for a 1 hour run, per CPS 9080.02, beginning at step 8.2.12.

Report to the CRS when Diesel Generator 1B load is ~ 3700 KW.

**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: 35a
 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		New JPM.
01	10/13/14	Revision due to procedure and template revision.

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

Simulator Setup Instructions

1. Initialize to a full power IC. Perform the following:
 - Trip the “A” Reactor Feedpump Turbine and allow the RR Flow Control Valves to runback.
 - Restore the “A” Reactor Feedpump to service.
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-205 is saved for the ILT 14-1 NRC Exam (password 91632).
6. 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 Reactor Recirculation (RR) System Flow Control Valve (FCV) Runback is reset IAW section 8.4.2 of CPS 3302.01 REACTOR RECIRCULATION.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 3302.01, Rev 35a REACTOR RECIRCULATION

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- Do NOT allow examinee to shine any type light into a panel.
- All pre-job briefings are completed.
- Candidates may elect to perform this operation in one of two ways (either of which is acceptable):
 - Option 1 – Perform all procedure steps for RR Flow Control Valve ‘A’, then RR Flow Control Valve ‘B’.
 - Option 2 – Perform each procedure step for RR Flow Control Valve ‘A’, then RR Flow Control Valve ‘B’, etc.

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

INITIAL CONDITIONS:

The 'A' Turbine Driven Feed Pump has tripped from full power resulting in a Reactor Recirculation Runback. The cause of the trip has been corrected and the 'A' Turbine Driven Feed Pump has been restored to service. Plant parameters have stabilized.

INITIATING CUE:

CAUTION

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

Reset the 'A' & 'B' RR Flow Control Valve Runback per CPS No. 3302.01.

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 BOLDDED letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the comments section of the JPM.

PERFORMANCE STEPS

CPS 3302.01 REACTOR RECIRCULATION

8.4.2 **FCV Runback Reset**

8.4.2.1 Verify the runback initiation signal is clear.

Standard: Examinee verifies that Reactor Vessel Level is above the Low Level Alarm (annunciator 5002-2Q reset) (Level 4).

Cue: None

Comments

SAT

UNSAT

Comment Number _____

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

***8.4.2.2 Zero Loop A(B) LIMITER ERROR by raising or lowering RR FCV controller output to match demanded valve position.**

Standard: Examinee positions the Recirc Loop A & B Flow Control B33-K603A & B slide switch (one at a time) to the left until the % Limiter Error meter indicates 0% (mid scale).

Cue: If examinee requests permission to use “double detent”, authorize use.

Comments Note: if the student continues to hold the slider in the closed position once the limiter error is at zero, the FCV will begin to close from the 19% open position. The student should stop as soon as the limiter error is zero. If the Flow Control Valves close by \geq than 2% combined (19% to 17% on one valve, or 19% to 18% on both valves), then this step is considered unsatisfactory because the 1% power change is the threshold for a Significance Level 3 Minor Reactivity Management Event (reference BWROG-TP-09-025 Rev. 15 Page 30).

'A' FCV	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____
'B' FCV	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____

8.4.2.3 IF A large negative SERVO-ERROR is displayed,

THEN To prevent an automatic shutdown of the associated HPU, shutdown the HPU per CPS 3302.02, Reactor Recirculation Flow Control Hydraulic System.

Standard: Student notes that there is no SERVO ERROR.

Cue: None

Comments

'A' FCV	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____
'B' FCV	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____

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

***8.4.2.4 Depress the A (B) Cav Intlk A/B Reset / Rx Run Back Reset push-button.**

Standard: Examinee depresses CAV. INTLK A/B pushbuttons (one at a time) and then verifies annunciators 5003-1D & 1E reset.

Cue: None

Comments

'A' Cav Intlk	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____
'B' Cav Intlk	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____

8.4.2.5 Verify annunciator 5003-1D (1E), FCV A (B) Partial Closure Due To RFP Trip clears.

Standard: Student verifies annunciators 5003-1D & 1E clears.

Cue: None

Comments Student should reset the annunciators.

5003-1D	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____
5003-1E	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>	Comment Number _____

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

8.4.2.6 IF The HPU was shutdown in step ‘3’ above,
THEN Proceed to section 8.4.1 to restore the HPU to service.

Standard: No action is required (the HPUs were not shutdown).

Cue: None

Comments HPU was not shutdown.

‘A’ HPU SAT UNSAT Comment Number _____
‘B’ HPU SAT UNSAT Comment Number _____

8.4.2.7 Adjust 1B33-F060A & B, Recirc FCVs as needed for power operations or when shutdown, re-opened to enhance natural circulation flow.

Standard: No action needed.

Cue: Cue the student that no adjustment is needed.

Comments This should end the JPM.

SAT UNSAT Comment Number _____

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

Task Completion

Standard: Informs Control Room Supervisor the task is completed.

Cue: Acknowledge the report. State JPM is complete.

Comments

SAT

UNSAT

Comment Number _____

STOP TIME: _____

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

INITIAL CONDITIONS:

The 'A' Turbine Driven Feed Pump has tripped from full power resulting in a Reactor Recirculation Runback. The cause of the trip has been corrected and the 'A' Turbine Driven Feed Pump has been restored to service. Plant parameters have stabilized.

INITIATING CUE:

CAUTION

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

Reset the 'A' & 'B' RR Flow Control Valve Runback per CPS No. 3302.01.

Report to the CRS after completing the task.

**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 9031.07 Rev: 33b
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	11/17/12	New JPM.
01	7/3/13	Updated task number and title.
02	10/13/14	Revision due to procedure and template revision.

**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-205 is saved for the ILT 14-1 NRC Exam (password 91632).
6. Ensure computer points C71-NC013, 14, 15, 16, 17, 18, 19, and 20 are displayed on PPC Display #10.
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:

- The Main Turbine (TG) System Main Turbine Control Valve Tests is complete IAW CPS 9031.07.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 9031.07, Rev 33b MAIN TURBINE CONTROL 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 evaluator. Review these cues to ensure the communications to the examinee are coordinated between the examinee and evaluator.

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

INITIAL CONDITIONS:

The reactor is in Mode 1 at ~ 60% power.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

You are an extra RO. The CRS has directed you to perform CPS 9031.07 Main Turbine Control Valve Tests on #1, #2, #3 & #4 Turbine Control Valves (CVs).

CPS 9031.07 Section 5.0 Prerequisites are complete.

The activity has been screened for production risk.

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

Plant conditions are stable.

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 9031.07 MAIN TURBINE CONTROL VALVE TESTS

8.0 Procedure

8.1 CV-1 Main Turbine Control Valve Test

8.1.1 Verify RPS and turbine trips reset and plant conditions stable.

Standard: Examinee will verify RPS and Turbine trips are reset and plant conditions are stable and then initial step 8.1.1.

Cue: None

Comments Plant conditions are stable per the initial conditions.
Evaluator will initial this step as the independent verifier.

SAT UNSAT Comment Number _____

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

***8.1.2 Depress and hold the CV-1 TEST push-button.**

Standard: Examinee depresses and holds the CV-1 TEST push-button on 1H13-P680-5007 and verifies the following:

- 1) DIV 1 OR 4 TCV FST CL TRIP annunciator energizes. (5004-2D)
- 2) Computer point C71NC017, TCV FAST CLOSURE CH A actuation.
- 3) Smooth CV-1 operation with fast closing during ~ the last 10% of valve closure.

Cue: Evaluator (when asked) – “CV-1 operated smoothly and fast closed during the last 10% of valve closure”.

Comments

SAT UNSAT Comment Number _____

***8.1.3 Release the CV-1 TEST push-button.**

Standard: Examinee releases the CV-1 TEST push-button and verifies the following:

- 1) CV-1 returns to pre-test position.
- 2) DIV 1 OR 4 TCV FST CL TRIP annunciator deenergized. (5004-2D)
- 3) Computer point C71NC017, TCV FAST CLOSURE CH A reset.

Cue: Evaluator (when asked) – “CV-1 is indicating 35% open at P678”.

Comments

SAT UNSAT Comment Number _____

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

8.2 CV-2 Main Turbine Control Valve Test

8.2.1 Verify RPS and turbine trips reset and plant conditions stable.

Standard: Examinee will verify RPS and Turbine trips are reset and plant conditions are stable and then initial step 8.2.1.

Cue: Evaluator (when asked) – “Plant conditions are stable”.

Comments Evaluator will initial this step as the independent verifier.

SAT UNSAT Comment Number _____

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

***8.2.2 Depress and hold the CV-2 TEST push-button.**

Standard: Examinee depresses and holds the CV-2 TEST push-button on 1H13-P680-5007 and verifies the following:

- 1) DIV 2 OR 3 TCV FST CL TRIP annunciator energizes. (5005-2D)
- 2) Computer point C71NC018, TCV FAST CLOSURE CH B actuation.
- 3) Smooth CV-2 operation with fast closing during ~ the last 10% of valve closure.

Cue: Evaluator (when asked) – “CV-2 operated smoothly and fast closed during the last 10% of valve closure”.

Comments

SAT UNSAT Comment Number _____

***8.2.3 Release the CV-2 TEST push-button.**

Standard: Examinee releases the CV-2 TEST push-button and verifies the following:

- 1) CV-2 returns to pre-test position.
- 2) DIV 2 OR 3 TCV FST CL TRIP annunciator deenergized. (5005-2D)
- 3) Computer point C71NC018, TCV FAST CLOSURE CH B reset.

Cue: Evaluator (when asked) – “CV-2 is indicating 35% open at P678”.

Comments

SAT UNSAT Comment Number _____

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

8.3 CV-3 Main Turbine Control Valve Test

8.3.1 Verify RPS and turbine trips reset and plant conditions stable.

Standard: Examinee will verify RPS and Turbine trips are reset and plant conditions are stable and then initial step 8.3.1.

Cue: Evaluator (when asked) – “Plant conditions are stable”.

Comments Evaluator will initial this step as the independent verifier.

SAT UNSAT Comment Number _____

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

***8.3.2 Depress and hold the CV-3 TEST push-button.**

Standard: Examinee depresses and holds the CV-3 TEST push-button on 1H13-P680-5007 and verifies the following:

- 1) DIV 2 OR 3 TCV FST CL TRIP annunciator energizes. (5005-2D)
- 2) Computer point C71NC019, TCV FAST CLOSURE CH C actuation.
- 3) Smooth CV-3 operation with fast closing during ~ the last 10% of valve closure.

Cue: Evaluator (when asked) – “CV-3 operated smoothly and fast closed during the last 10% of valve closure”.

Comments

SAT UNSAT Comment Number _____

***8.3.3 Release the CV-3 TEST push-button.**

Standard: Examinee releases the CV-3 TEST push-button and verifies the following:

- 1) CV-3 returns to pre-test position.
- 2) DIV 2 OR 3 TCV FST CL TRIP annunciator deenergized. (5005-2D)
- 3) Computer point C71NC019, TCV FAST CLOSURE CH C reset.

Cue: Evaluator (when asked) – “CV-3 is indicating 35% open at P678”.

Comments

SAT UNSAT Comment Number _____

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

8.4 CV-4 Main Turbine Control Valve Test

8.4.1 Verify RPS and turbine trips reset and plant conditions stable.

Standard: Examinee will verify RPS and Turbine trips are reset and plant conditions are stable and then initial step 8.4.1.

Cue: Evaluator (when asked) – “Plant conditions are stable”.

Comments Evaluator will initial this step as the independent verifier.

SAT UNSAT Comment Number _____

8.4.2 If testing #4 CV only at $\leq 90\%$, Verify On 1H13-P678 that #4 CV is full closed.

Standard: Examinee verifies on 1H13-P678 that #4 CV is full closed.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

***8.4.3 Depress and hold the CV-4 TEST push-button.**

Standard: Examinee depresses and holds the CV-4 TEST push-button on 1H13-P680-5007 and verifies the following:

- 1) DIV 1 OR 4 TCV FST CL TRIP annunciator energizes. (5004-2D)
- 2) Computer point C71NC020, TCV FAST CLOSURE CH D actuation.
- 3) If offline, (otherwise N/A), smooth CV-4 operation with fast closing during ~ the last 10% of valve closure.

Cue: None

Comments Examinee should N/A 8.4.3.3

SAT UNSAT Comment Number _____

***8.4.4 Release the CV-4 TEST push-button.**

Standard: Examinee releases the CV-4 TEST push-button and verifies the following:

- 1) CV-4 returns to pre-test position, **or** if closed, remains closed when performing test On-Line.
- 2) DIV 1 OR 4 TCV FST CL TRIP annunciator deenergized. (5004-2D)
- 3) Computer point C71NC020, TCV FAST CLOSURE CH D reset.

Cue: 1. Evaluator (when asked) – “CV-4 is indicating 0% open at P678”.
2. Evaluator – “JPM is complete”.

Comments

SAT UNSAT Comment Number _____

STOP TIME: _____

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

INITIAL CONDITIONS:

The reactor is in Mode 1 at ~ 60% power.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

You are an extra RO. The CRS has directed you to perform CPS 9031.07 Main Turbine Control Valve Tests on #1, #2, #3 & #4 Turbine Control Valves (CVs).

CPS 9031.07 Section 5.0 Prerequisites are complete.

The activity has been screened for production risk.

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

Plant conditions are stable.

Report to the CRS after completing the task.

CLINTON POWER STATION**Job Performance Measure**

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

JPM Number: JPM530

Revision Number: 00

Date: 7/25/14

Developed By:	<u>T. Jennings</u> Instructor	<u>7/25/14</u> Date
Validated By:	_____ SME or Instructor	_____ Date
Reviewed By:	_____ Operations Representative	_____ Date
Approved By:	_____ Training Department	_____ 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: 29d
Procedure CPS 5002.02 Rev: 29
Procedure CPS 5002.03 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	7/25/14	New JPM.

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

Simulator Setup Instructions

1. Initialize to any suitable IC (comparable with IC-8) with TDRFP 'A' on the MLC in auto and the TDRFP 'B' in rolling standby.
2. Open and execute Simulator Lesson Plan ILT 14-1 NRC Exam JPM LPs.
3. 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%
4. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
5. This completes the setup for this JPM.
6. Save to a different IC if JPM is being used more than once. IC-208 is saved for the ILT 14-1 NRC Exam (password 91632).
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:

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

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:

A reactor startup / power ascension is in progress.

Reactor power is ~ 42%.

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.

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 observes that TDRFP 'B' speed is ~ 2370 rpm and that no further actions are required.			
		*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	<p>*8.1.4.4.6</p> <p>Examinee clicks on:</p> <ul style="list-style-type: none"> • Valve icon for 1FW010B • 1FW010B Min Flow (and observes the blue outline on the control box) • Close • Exit <p>Note: 1FW010B will not physically close with TDRFP 'B' reset and 1FW002B full open.</p> <p>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>			
<p><u>NOTE</u> Steps 8.1.4.4.7 and 8.1.4.4.8 have been deleted in the procedure. Step 8.1.4.4.9 is N/A.</p>					
*8.1.4.4 (cont.)		<p>*8.1.4.4.10</p> <p>Examinee observes that TDRFP 'B' indicates 'FPB Speed Setter'.</p> <p>Examinee clicks on:</p> <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
8.1.4.4.10 5002-2F 5002-3F	Reduce Turbine Speed to clear vibration alarms (fails)	8.1.4.4.10.2.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><i>Cue: 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)

Operator's Name: _____

Job Title: [] EO [] RO [] SRO [] STA [] SRO Cert

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

JPM Number: JPM530 Revision Number: 00

Task Number and Title: 310301.40d TDRFP Normal Startup/Rolling Standby Operation

Table with 4 columns: K/A System, K/A Number, Importance (RO/SRO). Row 1: 259001, A4.02, 3.9, 3.7. Below table: Ability to manually operate and/or monitor in the control room: Manually start/control a RFP/TDRFP

Suggested Testing Environment: Simulator

Actual Testing Environment: [x] Simulator [] Plant [] Control Room

Testing Method: [] Simulate [x] Perform Alternate Path: [x] Yes [] No SRO Only: [] Yes [x] No

Time Critical: [] Yes [x] No

Estimated Time to Complete: 25 minutes Actual Time Used: _____ minutes

- References: CPS No. 3103.01, Rev 29d Feedwater (FW)
CPS 5002.02, Rev 29 Alarm Panel 5002 Annunciators - Row 2
CPS No. 5002.03, Rev 28 Alarm Panel 5002 Annunciators - Row 3

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 reactor startup / power ascension is in progress.

Reactor power is ~ 42%.

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.

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

CNMT Pool Makeup From Suppression Pool

JPM Number: JPM531

Revision Number: 00

Date: 10/14/14

Developed By:	T. Jennings	10/14/14
	Instructor	Date
Validated By:		
	SME or Instructor	Date
Reviewed By:		
	Operations Representative	Date
Approved By:		
	Training Department	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 3320.01 Rev: 12
Procedure CPS 3317.01 Rev: 30c
Procedure CPS 3312.01 Rev: 45b
- _____ 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	10/14/14	New JPM.

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

Simulator Setup Instructions

1. Initialize to any suitable IC with:
 - a. Reactor in Mode 3 or 4
 - b. RHR Pump 'A' in standby
 - c. Upper Pools dumped per CPS 4411.03 Appendix E Method 1.0 Dump Upper Pools (1FC036 and 1FC037 shut; 1SM001A, 2A, 1B, and 2B open.
 - 1) **SHUT 1SM001A, 2A, 1B, AND 2B as soon as 5040-5E LOW LEVEL CNMT XFER POOL is received (note - delaying this action will add substantial time to the JPM).**
3. Open and execute Simulator Lesson Plan ILT 14-1 NRC Exam JPM LPs.
4. When requested by the examinee to energize 1E12-F037A, release JPM531 which will energize 1E12-F037A RHR A Cnmt Pool Cooling & Shutoff Valve.
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. Save to a different IC if JPM is being used more than once. IC-206 (PW-91632) is saved for the 2014 ILT NRC Exam.
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 Upper Containment Pool level has been restored IAW CPS 3312.01 Residual Heat Removal (RHR) section 8.3.2 Pumping Suppression Pool to CNMT Pool.

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS 3220.01, Rev 12 Suppression Pool Makeup (SM)
- CPS 3317.01, Rev 30c Fuel Pool Cooling and Cleanup (FC)
- CPS 3312.01, Rev. 45b Residual Heat Removal (RHR)

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- This JPM requires the breaker to be turned ON for 1E12-F037A (step 8.3.2.5) which is performed by inserting a remote function from the simulator booth. Be prepared to communicate with the simulator booth operator to accomplish this step.
- The cue for critical step 8.3.2.12.1 to close 1E12-F037A is triggered when annunciator 5040-5F Low Level Upper CNMT Pool resets. Be prepared to provide the cue to the examinee when annunciator 5040-5F resets.
- After the examinee has repeated back the initiating cue, provide the examinee with CPS 3317.01 Fuel Pool Cooling and Cleanup (FC) and CPS 3312.01 Residual Heat Removal (RHR).

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

INITIAL CONDITIONS:

The plant is in Mode 4.

An event occurred requiring the Upper Containment Pools to be dumped IAW CPS 4411.03 Injection/Flooding Sources Appendix E: SM/SF (Suppression Pool Makeup/Cleanup) Method 1.0 Dump Upper Pools.

The event has been mitigated and recovery actions are in progress.

The Supp Pool Dump Valves (1SM001A, 2A, 1B, and 2B) have been reclosed IAW CPS 3220.01 Suppression Pool Makeup (SM) section 8.7 Recovery from Suppression Pool Dump Valve Actuation.

An Equipment Operator has performed the valve alignment verifications in CPS 3317.01 steps 8.1.4.9.1 and 8.1.4.9.2, and is standing by on Containment 828 to monitor Upper Containment Pool level locally.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

The CRS has directed you to restore Upper Containment Pool level per CPS 3317.01 Fuel Pool Cooling And Cleanup (FC) section 8.1.4.9 Supplying Water To Reactor Vessel Pool From Residual Heat Removal System using Residual Heat Removal (RHR) Pump 'A'.

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 3312.01 Residual Heat Removal (RHR) section 8.3.2 Pumping Suppression Pool to CNMT Pool.

8.3.2.1 Suppression pool water is of lower quality than the CNMT pools. Coordinate with chemistry for appropriate water samples prior to performing this section.

Standard: Examinee notifies Chemistry that Suppression Pool water will be transferred to the Upper Containment Pools.

Cue: As the Chemistry Technician, report to the examinee that the water in the Suppression Pool meets the chemistry requirements for transfer to the Upper Containment Pools.

Comments

SAT UNSAT Comment Number _____

8.3.2.2 Verify FC aligned to Reactor Vessel Pool per CPS 3317.01, Fuel Pool Cooling and Cleanup (FC) section 8.1.4.9.

Standard: No action required. Per the initiating cue, the alignment has already been verified.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

8.3.2.3 Establish communications between CNMT pool area and MCR.

Standard: Examinee directs an Equipment Operator to monitor Upper Cnmt Pool level.

Cue: As the Equipment Operator, acknowledge the order and report that you are staged by the Upper Containment Pools.

Comments

SAT UNSAT Comment Number _____

8.3.2.4 During this evolution, verify as appropriate that 1E12-F064A(B), RHR Pump A(B) Min Flow Recirc Valve opens whenever RHR flow is sensed < 1100 gpm for > 8 sec and shuts whenever RHR flow is > 1100 gpm.

Standard: Examinee verifies proper operation of 1E12-F064A when operating the 'A' RHR Pump.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

- 8.3.2.5 If desired, prepare 1E12-F037A, RH Sys 1A Shutdn Clg Upper Pool Valve, for operation as follows:
- Shut breaker for 1E12-F037A at AB MCC 1A2 (1AP73E) Cub 1B.
 - Place Alarm Bypass Switch 1E12S070A to Normal at AB MCC 1A2 (1AP73E) Cub 1B.

Standard: Examinee directs an Equipment Operator to shut the breaker for 1E12-F037A and to place Alarm Bypass Switch 1E12S070A to Normal.

Cue: Acknowledge the order from the examinee, and then cue the simulator booth operator to release Insert OPER_1E12F037A Shut.

When the remote function has been inserted, report that the breaker for 1E12-F037A is closed and the Alarm Bypass Switch 1E12S070A is in Normal.

Comments

SAT UNSAT Comment Number _____

- 8.3.2.6 If desired, prepare 1E12-F037B, RH Sys 1B Shutdn Clg Upper Pool Valve, for operation as follows:
- Shut breaker for 1E12-F037B at AB MCC 1B2 (1AP76E) Cub 10B.
 - Place Alarm Bypass Switch 1E12S073 to Normal at AB MCC 1B2 (1AP76E) Cub 10B.

Standard: No action required. Per the initiating cue RHR Pump 'A' is to be used to restore Upper Containment Pool level.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

8.3.2.7 Place / verify SX A(B) PRM 1RIX-PR038(039) Shutdown Service Water A(B) Effluent (SX) in service.

Standard: At the MCR AR/PR LAN (1H13-P870-5013 OR 1H13-P864), the examinee verifies that the status for 1RIX-PR038 is 'reliable'.

Cue: None

Comments

SAT UNSAT Comment Number _____

8.3.2.8 Open/verify open 1E12-F048A(B) RHR A(B) Hx Bypass Valve.

Standard: At 1H13-P601-5064, the examinee verifies 1E12-F048A is open (red light is ON and green light is OFF).

Cue: None

Comments

SAT UNSAT Comment Number _____

***8.3.2.9 Start desired RHR Pump A(B), 1E12C002A(B).**

Standard: Examinee rotates control switch for RHR Pump 'A' clockwise and verifies pump is running (red light is ON, green light is Off, and current is indicated on RHR Pump A Amps Meter E12-R555) at 1H13-P601-5064.

Cue: If the examinee reports starting RHR Pump A, acknowledge the report.

Comments

SAT UNSAT Comment Number _____

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

***8.3.2.10 Open 1E12-F037A(B), RHR A(B) To CNMT Pool Cooling Shutoff Vlv.**

Standard: Examinee rotates and holds the control switch for 1E12-F037A clockwise until RHR Pump A Flow indicator E12-R603A indicates ≥ 4300 gpm at 1H13-P601-5064.

Cue: If the examinee reports commencing filling the Upper Containment Pools to the Equipment Operator and/or the CRS, acknowledge the report.

Comments

SAT UNSAT Comment Number _____

8.3.2.11 Observe flow to CNMT pools on RHR Pump A(B) Flow meter, 1E12-R603A(B).

Standard: Examinee observes flow on E12-R603A RHR Pump A Flow meter at 1H13-P601-5064.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

***8.3.2.12.1** When desired CNMT pool level is obtained, or Suppression Pool lower limit is reached, shut 1E12-F037A(B) RHR A(B) To CNMT Pool Cooling Shutoff Vlv.

Standard: Examinee rotates and holds the control switch for 1E12-F037A counter-clockwise until the green light is illuminated and the red light extinguishes.

Cue: When annunciator 5040-5F Low Level Upper Cnmt Pool RESETS, cue the examinee (as the Equipment Operator in the Containment) that Upper Containment Pool Level has reached the bottom edge of the lowest skimmer.

Comments At 5000 gpm RHR flow, it will take ~ 6 minutes for 5040-5F to reset.

In Mode 4, there is no lower limit on Suppression Pool Level.

SAT UNSAT Comment Number _____

8.3.2.12.2 When desired CNMT pool level is obtained, or Suppression Pool lower limit is reached, stop RHR Pump A(B).

Standard: Examinee rotates the control switch for RHR Pump A counter-clockwise and verifies the green light illuminates and the red light extinguishes.

Cue:

Comments In Mode 4, there is no lower limit on Suppression Pool Level.

SAT UNSAT Comment Number _____

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

8.3.2.12.3 When desired CNMT pool level is obtained, or Suppression Pool lower limit is reached, verify RHR Loop A(B) in STANDBY per Appendix A.

Standard: No action is required; JPM is complete.

Cue: Cue the examinee that the JPM is complete.

Comments In Mode 4, there is no lower limit on Suppression Pool Level.

SAT UNSAT Comment Number _____

TERMINATING CUES:

The Upper Containment Pool level has been restored IAW CPS No. 3312.01 Residual Heat Removal (RHR).

STOP TIME: _____

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

Operator's Name: _____

Job Title: EO RO SRO STA SRO Cert

JPM Title: CNMT Pool Makeup From Suppression Pool

JPM Number: JPM531 Revision Number: 00

Task Number and Title: 331201.26 Pump the Suppression Pool To CNMT Pool

K/A System	K/A Number	Importance (RO/SRO)	
223001	2.1.23	4.3	4.4
Ability to perform specific system and integrated plant procedures during all modes of plant operation.			

Suggested Testing Environment: Simulator

Actual Testing Environment: Simulator Plant Control Room

Testing Method: Simulate **Alternate Path:** Yes No
 Perform **SRO Only:** Yes No

Time Critical: Yes No

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

References:

- CPS 3220.01, Rev 12 Suppression Pool Makeup (SM)
- CPS 3317.01, Rev 30c Fuel Pool Cooling and Cleanup (FC)
- 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:

The plant is in Mode 4.

An event occurred requiring the Upper Containment Pools to be dumped IAW CPS 4411.03 Injection/Flooding Sources Appendix E: SM/SF (Suppression Pool Makeup/Cleanup) Method 1.0 Dump Upper Pools.

The event has been mitigated and recovery actions are in progress.

The Supp Pool Dump Valves (1SM001A, 2A, 1B, and 2B) have been reclosed IAW CPS 3220.01 Suppression Pool Makeup (SM) section 8.7 Recovery from Suppression Pool Dump Valve Actuation.

An Equipment Operator has performed the valve alignment verifications in CPS 3317.01 steps 8.1.4.9.1 and 8.1.4.9.2, and is standing by on Containment 828 to monitor Upper Containment Pool level locally.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

The CRS has directed you to restore Upper Containment Pool level per CPS 3317.01 Fuel Pool Cooling And Cleanup (FC) section 8.1.4.9 Supplying Water To Reactor Vessel Pool From Residual Heat Removal System using Residual Heat Removal (RHR) Pump 'A'.

Report to the CRS after completing the task.

CLINTON POWER STATION

Job Performance Measure

Perform RPS MSIV Channel Functional (Alternate Path)

JPM Number: JPM537

Revision Number: 00

Date: 10/14/14

Developed By:	T. Jennings	10/14/14
	Instructor	Date
Validated By:		
	SME or Instructor	Date
Reviewed By:		
	Operations Representative	Date
Approved By:		
	Training Department	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 9031.10 Rev: 25c
 Procedure CPS 3101.01 Rev: 23b
 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	10/14/14	New JPM. Modeled from JPM447 as an alternate path JPM.

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

Simulator Setup Instructions

1. Initialize to any suitable IC with power < 75% and the MSIVs open.
2. Open and execute Simulator Lesson Plan ILT 14-1 NRC Exam JPM LPs.
3. Release JPM537 which will perform the following:
 - Insert malfunction YAMSSIFP_2 0% (causes 1B21-F022B to fail completely closed) when the test push-button is depressed and then released for 1B21-F022B, Main Steam Line B Inbd MSIV.
 - Deletes malfunction YAMSSIFP_2 0% when the control switch for 1B21-F022B is placed in CLOSE.
4. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
5. This completes the setup for this JPM.
6. Save to a different IC if JPM is being used more than once. IC-205 (PW-91632) is saved for the 2014 ILT NRC Exam.
7. Station an instructor to acknowledge alarms (not associated with the JPM) and perform Independent Verifications as required.
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:

- 1B21-F022B Main Steam Line B Inbd MSIV is open IAW CPS 3101.01 Main Steam (MS).

TOOLS, EQUIPMENT, OTHER SPECIAL REQUIREMENTS:

- None

PROCEDURAL/REFERENCES:

- CPS No. 9031.10, Rev 25c RPS Main Steam Line Isolation Valve Channel Functional
- CPS 3101.01, Rev23b Main Steam (MS, IS & ADS)

EVALUATOR INSTRUCTIONS:

- Amplifying cues are provided within the JPM steps.
- All pre-job briefings are completed.
- When the initiating cue has been acknowledged by the examinee, provide the examinee with a copy of CPS 9031.10 RPS Main Steam Line Isolation Valve Channel Functional. Do NOT provide the examinee with the copy of CPS 3101.01 Main Steam that is included in the JPM package until the examinee locates the procedure to perform the alternate path steps beginning on page 12.

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

INITIAL CONDITIONS:

The plant is in Mode 1.

INITIATING CUE:

CAUTION

- All pre-job briefings are completed.

The CRS has directed you to perform CPS 9031.10 RPS Main Steam Line Isolation Valve Channel Functional.

All prerequisites are complete.

You have permission to perform critical steps.

Computer points will be monitored and retained by another operator. You may request the computer point status at any time during or after the performance of the applicable step.

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 9031.10 RPS Main Steam Line Isolation Valve Channel Functional

***8.1.1.1 Place 1B21-F022A, Main Steam Line A Inbd MSIV control switch to the CLOSE TEST position.**

Standard: Examinee locates control switch for 1B21-F022A on 1H13-P601-5066 and rotates the switch clockwise to the CLOSE TEST position.

Cue: None

Comments No valve movement will occur until the test push-button is depressed and held in the next step.

SAT

UNSAT

Comment Number _____

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

***8.1.1.2 Depress and hold the test push-button, MAIN STEAM LINE A INBD MSIV Test.**

Verify the following:

- 1) Both red and green lights are ON.
- 2) Alarm 5004-3C, DIV 1 or 4 MSIV CL TRIP annunciates.
- 3) Computer point B21NC047, Main Steam Line Isolation Valve CH. A indicates 'tripped' or in a Logic 1 State.

Standard:

Examinee locates and depresses the test push button for 1B21-F022A.

Examinee verifies the following:

- 1) Both red and green lights are ON.
- 2) Alarm 5004-3C, DIV 1 or 4 MSIV CL TRIP annunciates.
- 3) Computer point B21NC047, Main Steam Line Isolation Valve CH. A indicates 'tripped' or in a Logic 1 State.

Cue:

When the green light illuminates for 1B21-F022A, cue the examinee that computer point B21NC047 indicates 'tripped'.

Comments

- It takes ~ 30 – 40 seconds for the MSIV to close to the intermediate position (both red and green lights ON).
- Status of computer points can be provided at any time after the event has happened (provide when requested by candidate).

SAT

UNSAT

Comment Number _____

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

***8.1.1.3 After alarm is received, release the test push-button.**

Verify the following:

- 1) Red light ON and green light OFF.
- 2) Alarm 5004-3C, DIV 1 or 4 MSIV CL TRIP clears.
- 3) Computer point B21NC047, Main Steam Line Isolation Valve CH. A indicates 'Reset' or in a Logic 0 State.

Standard: Examinee releases the test push button for 1B21-F022A before the RED light extinguishes.

Examinee verifies the following:

- 1) Red light ON and green light OFF.
- 2) Alarm 5004-3C, DIV 1 or 4 MSIV CL TRIP clears.
- 3) Computer point B21NC047, Main Steam Line Isolation Valve CH. A indicates 'Reset' or in a Logic 0 State.

Cue: When the green light extinguishes for 1B21-F022A, cue the examinee that computer point B21NC047 indicates 'Reset'.

Comments Status of computer points can be provided at any time after the event has happened (provide when requested by candidate).

SAT UNSAT Comment Number _____

***8.1.1.4 Place 1B21-F022A, Main Steam Line A Inbd MSIV control switch to AUTO position.**

Standard: Examinee locates the control switch for 1B21-F022A and rotates counter clockwise to the 'Auto' position.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

***8.1.2.1 Place 1B21-F022B, Main Steam Line B Inbd MSIV control switch to the CLOSE TEST position.**

Standard: Examinee locates control switch for 1B21-F022B and rotates the switch clockwise to the CLOSE TEST position.

Cue: None

Comments No valve movement will occur until the test push-button is depressed and held in the next step.

SAT UNSAT Comment Number _____

8.1.2.2 Depress and hold the test push-button, MAIN STEAM LINE B INBD MSIV Test.

Verify the following:

- 1) Both red and green lights are ON.
- 2) Alarm 5005-3C, DIV 2 or 3 MSIV CL TRIP annunciates.
- 3) Computer point B21NC048, Main Steam Line Isolation Valve CH. B indicates 'tripped' or in a Logic 1 State.

Standard: Examinee locates and depresses the test push button for 1B21-F022B.
Examinee verifies the following:

- 1) Both red and green lights are ON.
- 2) Alarm 5005-3C, DIV 2 or 3 MSIV CL TRIP annunciates.
- 3) Computer point B21NC048, Main Steam Line Isolation Valve CH. B indicates 'tripped' or in a Logic 1 State.

Cue: When the green light illuminates for 1B21-F022B, cue the examinee that computer point B21NC048 indicates 'tripped'.

Comments

- It takes ~ 30 – 40 seconds for the MSIV to close to the intermediate position (both red and green lights ON).
- Status of computer points can be provided at any time after the event has happened (provide when requested by candidate).

SAT UNSAT Comment Number _____

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

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

Begin Alternate Path

8.1.2.3 After alarm is received, release the test push-button.

Verify the following:

- 1) Red light ON and green light OFF.
- 2) Alarm 5004-3C, DIV 1 or 4 MSIV CL TRIP clears.
- 3) Computer point B21NC047, Main Steam Line Isolation Valve CH. A indicates 'Reset' or in a Logic 0 State.

Standard: Examinee releases the test push button for 1B21-F022B before the RED light extinguishes.

Examinee observes the following:

- 1) 1B21-F022B has fully closed (green light ON, red light OFF)
- 2) Alarm 5004-3C, DIV 1 or 4 MSIV CL TRIP does NOT clear.
- 3) Computer point B21NC047, Main Steam Line Isolation Valve CH. A does NOT indicate 'Reset' or in a Logic 0 State.

Cue: When examinee reports that 1B21-F022B closed fully after the test pushbutton was released, acknowledge the report and state, "Take appropriate action for the valve closure."

Comments

SAT

UNSAT

Comment Number _____

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

CPS 3101.01 Main Steam (MS, IS & ADS) Section 8.2.5 Inadvertent MSIV Closure at Power/Recovery

***8.2.5.1 Initial actions on an inadvertent MSIV closure:**

1. Verify/lower Rx power to $\leq 75\%$ RTP.
2. ***Verify/place applicable MSIV C/S to CLOSE.**
3. Verify the applicable annunciator energized:
 - 5005-3C: DIV 2 OR 3 MSIV CL TRIP
 - 5004-3C: DIV 1 OR 4 MSIV CL TRIP
4. The MSIV should be considered INOPERABLE until the cause of the inadvertent MSIV closure is known and has been corrected. Refer to as applicable:
 - ITS LCO 3.3.1.1 Table item 6: RPS MSIV Closure Signal
 - ITS LCO 3.3.6.1 Table item 1: MSL Isolation Signals
 - ITS LCO 3.6.1.3 ACTION A: PCIV OPERABILITY

Standard:

Examinee:

- Verifies Reactor Power $\leq 75\%$ RTP
- ***Places 1B21-F022B, Main Steam Line B Inbd MSIV control switch to the CLOSE position by rotating the switch fully counter clockwise.**
- Verifies annunciators 5005-3C and 5004-3C energized.
- Reports recommended ITS LCOs for review to CRS.

Cue:

When examinee reports the issue, acknowledge the report and then cue the examinee that you will refer to Technical Specifications and notify Maintenance to investigate.

TIME COMPRESSION

When the examinee has completed step 8.2.5.1, cue the examinee:

- 24 hours have elapsed.
- Maintenance has discovered and repaired the problem with 1B21-F022B.
- You have permission to recover Main Steam Line 'B'.
- Cycling Main Steam Line Drains to drain accumulated condensate upstream of the 'B' MSIV per section 8.1.2 of CPS 3101.01 was just completed.

Comments

The only critical portion of the step is to place the Control Switch for 1B21-F022B in close.

SAT

UNSAT

Comment Number _____

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

8.2.5.2 Obtain SMngt permission to reopen the MSIV.

Standard: No action required. Permission was obtained in the step 8.2.5.1 Time Compression cue.

Cue: None

Comments

SAT UNSAT Comment Number _____

8.2.5.3 If the MSIV has been shut for > 10 minutes, condensate may have accumulated upstream of the MSIV. Operate MSL drains per section 8.1.2 as necessary to drain the upstream lines.

Standard: Examinee recognizes 'conditions met' per cue.

Cue: None

Comments

SAT UNSAT Comment Number _____

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

8.2.5.4 When opening the MSIV, closely monitor:

- MSL flow conditions. Severe MSL flow transients could result in a high MSL flow Group 1 isolation signal (279 psid).
- APRM levels for oscillations.
- Reactor pressure.
- Reactor water level.

Standard: Examinee monitors the following when opening 1B21-F022B:

- MSL flow conditions.
- APRM levels for oscillations.
- Reactor pressure.
- Reactor water level.

Cue: None

Comments

SAT UNSAT Comment Number _____

***8.2.5.5 Open the applicable MSIV by placing its C/S to AUTO:**

- 1B21-F022B (D, A, C), Main Steam Line B (D, A, C) Inbd MSIV.

Standard: Examinee rotates the control switch for 1B21-F022B clockwise to the AUTO position and verifies the valve opens (red light on, green light off).

Cue: None

Comments

SAT UNSAT Comment Number _____

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

- 8.2.5.6 Verify the applicable annunciator clears:
- 5005-3C: DIV 2 OR 3 MSIV CL TRIP
 - 5004-3C: DIV 1 OR 4 MSIV CL TRIP

Standard: Examinee verifies annunciators 5005-3C and 5004-3C are clear.

Cue: Cue the examinee that the JPM is complete.

Comments

SAT

UNSAT

Comment Number _____

TERMINATING CUES:

MSIV 1B21-F022B is open IAW CPS No. 3101.01 Main Steam (MS, IS & ADS).

STOP TIME: _____

Clinton Power Station
Job Performance Measure (JPM)

Operator's Name: _____

Job Title: [] EO [] RO [] SRO [] STA [] SRO Cert

JPM Title: Perform RPS MSIV Channel Functional (Alternate Path)

JPM Number: JPM537 Revision Number: 00

Task Number and Title: 310101.11 Inadvertent MSIV Closure at Power/Recovery

Table with 4 columns: K/A System, K/A Number, Importance (RO/SRO). Row 1: 212000, A4.02, 3.6, 3.7. Description: Reactor Protection System - Ability to manually operate and/or monitor in the control room: Perform system functional test(s)

Suggested Testing Environment: Simulator

Actual Testing Environment: [x] Simulator [] Plant [] Control Room

Testing Method: [] Simulate [x] Perform Alternate Path: [x] Yes [] No SRO Only: [] Yes [x] No

Time Critical: [] Yes [x] No

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

References:

- CPS No. 9031.10, Rev 25c RPS MAIN STEAM LINE ISOLATION VALVE CHANNEL FUNCTIONAL
CPS 3101.01, Rev 23b MAIN STEAM (MS, IS & ADS)

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.

The CRS has directed you to perform CPS 9031.10 RPS Main Steam Line Isolation Valve Channel Functional.

All prerequisites are complete.

You have permission to perform critical steps.

Computer points will be monitored and retained by another operator. You may request the computer point status at any time during or after the performance of the applicable step.

Report to the CRS after completing the task.

Exelon Nuclear

ILT 14-1 NRC Exam

**Scenario Number:
NRC Exam Scenario 1**

Revision Number: 0

Date: 10/01/14

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

Appendix D

Scenario Outline

Form ES-D-1

Facility: <u>Clinton Power Station</u>	Scenario No.: <u>1</u>	Operating Test No.: <u>2015-301</u>	
Examiners: _____ _____	Operators: _____ _____		
<p>Initial Conditions:</p> <ul style="list-style-type: none"> • Mode 1 Rx Power at 22%. Reactor startup is in progress. • Thunderstorms are expected in the area within the next hour. • Turbine Driven Reactor Feed Pump (TDRFP) 'B' is out of service for minor maintenance. Restoration is expected prior to transferring RR Pumps 'A' and 'B' to fast speed. <p>Turnover:</p> <ul style="list-style-type: none"> • Priorities: <ul style="list-style-type: none"> • 1 - Cross-tie 480V Buses 1L & 1M with 1L supplying per CPS 3502.01 480 VAC Distribution. • 2 – Continue reactor startup by withdrawing control rods in sequence beginning with control rod 16-41 in individual drive mode. Raise reactor power to 29% in preparation for Reactor Recirculation (RR) pump shift to fast speed. 			
Event No.	Mal. No.	Event Type*	Event Description
1	N/A	N-BOP/SRO	Cross-tie 480V Buses 1L & 1M with 1L supplying
2	N/A	R-ATC/SRO	Raise power with rods to 29%
3	ROD1641TFIA5	C-ATC TS-SRO	Uncoupled Rod
4	YAFWPPLB_15	C-ATC/SRO	TDRFP 'A' High Bearing Temperature
5	YFFWPPSS_13	C-BOP/SRO	MC Pump 1B coupling failure
6	A11_A05_S40_2 ON A11_A02_07_4_TVM 2 A_11_A08_DS30_1 OFF	TS-SRO	Loss of Control Power to Suppression Pool Dump Valve 1SM001A
7	A11_A02_03_7_TVM 2	C-BOP/SRO	Low Flow CW Bearing Seal Water
8	YP_XMFTB_5082	M- BOP/SRO/ATC	PC-12 RPV Ref Leg Leak In Gas Control Boundary
9	CAM1PR006(A/B/C/D)TV _VALUE1 = 21-24 mr A11_A03_01_4_TVM 4 A11_A03_02_3_TVM 4 A18_A03_S11 = 1 A18_A03_S10 = 1 A12_A01_07_6_TVM 2 A12_A02_07_6_TVM 2	C-BOP/SRO	Radiation Monitor fails to isolate VF/Startup VG
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

Scenario No.: 1

Operating Test No.: 2015-301

Narrative Summary

Event #	Description
1.	<p>Cross-tie 480V Buses 1L & 1M with 1L supplying Following shift turnover, the SRO will direct the BOP Operator to cross-tie 480V Buses 1L & 1M with 1L supplying per CPS 3502.01 480 VAC Distribution section 8.1.4 Transferring a 480V Bus: Paralleling Method.</p>
2.	<p>Raise power with rods to 29% The crew will raise Reactor power with Control Rods to achieve ~29% Reactor Power IAW CPS 3004.01 TURBINE STARTUP AND GENERATOR SYNCHRONIZATION in preparation for transferring RR pumps to FAST speed.</p>
3.	<p>Uncoupled rod When the first in-sequence control rod 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.</p>
4.	<p>TDRFP 'A' High Bearing Temperature Annunciator 5002-2C HIGH TEMP RFPT 1A BRG comes in due to a failed bearing in the 'A' RFPT. With the 'B' TDRFP tagged out, the crew will start the MDRFP and secure the 'A' TDRFP IAW CPS 3103.01 Feedwater (FW) section 8.3.6 High Temperature TDRFP Bearings.</p>
5.	<p>MC Pump 1B coupling failure Annunciator LOW PRESS MAKE-UP COND XFER PUMPS DISCH HDR (5014-2C) comes in due to the Make-Up Condensate Transfer Pump 1B (0MC01PB) shaft shear. The BOP Operator will dispatch an Equipment operator to investigate. Upon the report of a shaft shear, the BOP operator will stop the failed pump and start the standby pump per CPS 3208.01 Cycled/Makeup Condensate Section 8.1.1 (or 8.2.2).</p>
6.	<p>Loss of Control Power to Suppression Pool Dump Valve (1SM001A) Annunciator NOT AVAILABLE SM SYSTEM DIVISION 1 (5041-7D) comes in due to a blown control power fuse deenergizing relay 74-SM1A (1SM001A Bkr Overload relay). The BOP operator will dispatch a Equipment operator to investigate. Technical Specification LCO 3.6.2.4, Action C.1 will be evaluated requiring the restoration of the SPMU subsystem to operable status within 7 days.</p>
7.	<p>Low Flow CW Bearing Seal Water Annunciator 5041-3G LOW FLOW CW PUMP 1C BRG SEAL WATER comes in due to CW Pump 'C' seal water flow less than the setpoint (15 gpm). The BOP operator will dispatch an Equipment Operator to investigate. Seal water flow to Circulating Water (CW) Pump 1C cannot be restored requiring the BOP operator to trip CW Pump 1C and start CW Pump 1A.</p>
8.	<p>RPV Instrument Line leak An RPV instrument line will break resulting in a partial loss of RPV instrumentation, a steam leak in the secondary containment and EOP-8 entry. Two areas in secondary containment will exceed Maximum Safe temperature requiring blowdown. The crew may Anticipate Blowdown using bypass valves prior to two areas reaching max safe.</p>
9.	<p>Radiation Monitor fails to isolate VF/Startup VG Due to the RPV instrument line leak in the secondary containment, the VF exhaust radiation monitors trend up to the trip isolation set point but fail to actuate VF system isolation and start of VG requiring BOP to manually perform.</p>

EOP
8, 1, 3

Critical tasks:

- SC-1.1 ATC inserts a manual Scram before area temperature reaches max safe in any one area.
- 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)
- Crew takes manual action to start at least one Standby Gas (VG) train and isolate VF when high rad initiation signals are received but automatic actions fail to occur.

Shift Turnover Information

⇒ **Day of week and shift**

- ◆ Today Day Shift.

⇒ **Weather conditions**

- ◆ Thunderstorms are expected in the area within the next hour.

⇒ **(Plant power level)**

- ◆ Mode 1 at ~ 22%
- ◆ 760 MWt
- ◆ 181 MWe
- ◆ 29.9 Mlbm/hr CORE FLOW
- ◆ RR Pumps A & B are in slow speed with FCVs at 90% / 90% (locked out)
- ◆ CPS 3004.01 at step 8.4.11

⇒ **Thermal Limit Problems/Power Evolutions**

- ◆ Power ascension to 29% per CPS 3004.01 Turbine Startup and Generator Synchronization
- ◆ At ~30% reactor power transfer RR pumps to fast speed per CPS 3004.01
- ◆ Control Rod Move Sheet: Step 30, Rod 16-41 in Gang 7E is at Position 16. All other rods in gang 7E (40-41, 40-17, and 16-17) are at position 12.
- ◆ RE and Rod Verifier are available on request

⇒ **Existing LCOs, date of next surveillance**

- ◆ None

⇒ **Surveillances or major maintenance**

- ◆ None

⇒ **Equipment to be taken out of or returned to service this shift/maintenance on major plant equipment**

- ◆ Turbine Driven Reactor Feed Pump TDRFP 'B' is out of service for minor maintenance. Restoration is expected prior to transferring RR Pumps 'A' and 'B' to fast speed.

⇒ **Comments, evolutions, problems, etc.**

- ◆ Online Risk is Green
- ◆ MDRFP is in STANDBY (prestart checks complete).
- ◆ Cross-tie 480V MCCs 1L & 1M with 1L supplying per CPS 3502.01 480 VAC Distribution.
- ◆
- ◆
- ◆ Power ascension is in progress.
- ◆ Continue power ascension to 29% in preparation for transfer of RR pumps to fast speed.
- ◆ Protected Equipment: FC 'B', Div 1 and 2 VX
- ◆
- ◆

Operator Actions

Event No.(s): 1		Page 1 of 1
Description: Cross-tie 480V Buses 1L & 1M with 1L supplying		
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 3502.01, 480V Distribution, Step 8.1.4:</p> <ul style="list-style-type: none"> • Closes the 480V Unit Sub 1L to 1M Tie Breaker 1AP24E. • Opens the 480V Unit Sub 1M Main Breaker 1AP25E. (May refer to CPS 3502.01 Att. 1 for circuit breaker EINs)
	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: Unit Subs 1L & 1M are cross tied with the Unit Sub 1M main feeder open.		

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: Raise power with rods to 29%		
Initiation: Following Event 1 and upon direction of the SRO		
Cues: None		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Reactor power, Rod drive parameters (flow, dP), control rod position, Generator load</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. Per CPS 3004.01 Turbine Startup and Generator Synchronization, NF-CL-721-F-2 Control Rod Move Sheets and CPS 3304.02 RCIS: <ul style="list-style-type: none"> • Withdraws control rods (beginning with 16-41 from position 24) per the control rod sequence to raise power. • Monitors nuclear instruments during rod movement. <ul style="list-style-type: none"> ○ Monitors the Power to Flow Map during power ascension. • Performs a Coupling Check for any control rod(s) withdrawn to position 48.
	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 the Power to Flow Map during power ascension.
	SRO	<ul style="list-style-type: none"> • Directs ATC to raise power to 29%. • Maintains oversight during control rod movement; positioned in proximity to the ATC (typically from the SRO desk). • Acknowledges reports from ATC/BOP. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.
<p>Terminus: Clearly observable plant response from change in power level; reactor power < 25% to support execution of event 4.</p>		

NOTES:

Operator Actions

Event No.(s): 3		Page 1 of 1
Description: Uncoupled rod		
Initiation: Initiated when 16-41 is withdrawn to position 48		
Cues: Annunciator, 5006-5G Rod Overtravel		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response</u>: Rod position, rod uncoupled light on P680 OCM for control rod 16-41</p> <p><u>Expected Annunciators</u>: 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. <p>Per CPS 3304.02 Rod Control And Information System, section 8.1.10 Coupling Check:</p> <ul style="list-style-type: none"> • After 16-41 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 16-41 goes out. • Determines control rod 16-41 is uncoupled by pressing the ROD UNCOUPLED button on the P680 OCM. • Informs SRO that 16-41 is uncoupled and to refer to ITS 3.1.3. <p>Per CPS 3304.02 Rod Control And Information System, step 8.2.6.1</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.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels and notifies the SRO of any unusual or unexpected conditions. ○ Initiates an Issue Report and contacts the Reactor Engineer regarding the uncoupled rod event.
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Verifies / directs ATC to attempt to recouple rod 16-41. • Enters ITS 3.1.3 Action C.1 and C.2 to fully insert control rod 16-41 within 3 hours and disarm 16-41 within 4 hours. • Exits ITS 3.1.3 Action C.1 and C.2 when 16-41 is successfully recoupled. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures.
Terminus: Rod 16-41 recoupled and returned to position 48		

NOTES:

Operator Actions

Event No.(s): 4		Page 1 of 1
Description: TDRFP 'A' High Bearing Temperature		
Initiation: Following Event 3 and upon direction of the Lead Examiner, insert REMOTE 1 .		
Cues: Annunciator, 5002-2C High Temp RFPT 1A Brg		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> TDRFP A graphics screen to determine alarming bearing		
<u>Expected Annunciators:</u> 5002-2C High Temp RFPT 1A Brg		
<u>Automatic Actions:</u> None		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. Per CPS 5002-2C, High Temp RFPT 1A Brg: <ul style="list-style-type: none"> • Reports issue to SRO • Observes TDRFP A graphics screen to determine the alarming bearing. • Verifies lube oil pressure to turbine bearing > 12 psig and to pump bearing > 20 psig. • Verifies lube oil cooler outlet temperature is 100°F to 120°F (may be performed by BOP). <ul style="list-style-type: none"> ○ Increases cooling water flow and/or reduces RFP 1A speed to clear bearing alarm. • Refers to CPS 3103.01, FEEDWATER (FW) High Temperature RFPT Bearings abnormal section for further operating guidance. Per CPS 3103.01, FEEDWATER (FW): <ul style="list-style-type: none"> • When it is determined that the 'A' TDRFP high bearing temperature alarm cannot be cleared: <ul style="list-style-type: none"> • Starts the MDRFP per CPS 3103.01 Feedwater (FW) section 8.1.3 and section 8.1.6. • Stops TDRFP 'A' per CPS 3103.01 Feedwater (FW) section 8.1.10.
	BOP	<ul style="list-style-type: none"> ○ Dispatches an Equipment Operator to monitor operation of the 'A' TDRFP. ○ Dispatches an Equipment Operator to perform MDRFP prestart checks. • Monitors control room panels and notifies the SRO of any unusual or unexpected conditions.
	SRO	<ul style="list-style-type: none"> • Directs ATC to place the MDRFP in service and remove RFP 1A from service. ○ Enters and executes CPS 4002.01, Abnormal RPV Level Loss of Feed Water at Power (only if RPV high/low level alarms are received). • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations standards and approved procedures. ○ Contacts Shift Manager and recommends notifications.
Terminus: Transfer of RPV Level Control from TDRFP 'A' to the MDRFP in progress.		

NOTES:

Operator Actions

Event No.(s): 5		Page 1 of 1
Description: MC Pump 1B coupling failure		
Initiation: Following Event 4 and upon direction of the Lead Examiner, insert REMOTE 2		
Cues: Annunciator 5014-2C, Low Pressure Make-Up Cond Xfer Pumps Disch Hdr		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> MU Cond Xfer Pmp Disch Pressure</p> <p><u>Expected Annunciators:</u> 5014-2C, Low Pressure Make-Up Cond Xfer Pumps Disch Hdr</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 issue to SRO. • Reviews ARP 5014-2C. <ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Dispatches Equipment Operator to investigate. <p>Per CPS 3208.01 MC/CY, STEP 8.2.2 (or 8.1.1.1):</p> <ul style="list-style-type: none"> • Directs Equipment Operator to shut discharge valve 1MC006A (if section 8.1.1.1 is used). • Starts MC Pump 1A • Directs Equipment Operator to open discharge valve 1MC006A (if section 8.1.1.1 is used) • Secures MC Pump 1B (may place pump CS in PTL)
	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. ○ Informs Shift Manager. ○ Conducts a brief. ○ Contacts Maintenance to investigate and repair MC pump 1B.
Terminus: Standby Pump started and shutdown of the failed pump		

NOTES:

Operator Actions

Event No.(s): 6		Page 1 of 1
Description: Loss of Control Power to Suppression Pool Dump Valve (1SM001A)		
Initiation: Following Event 5 and upon direction of the Lead Examiner, insert REMOTE 3		
Cues: Annunciator 5041-7D, Not Avail SM Sys Division 1		
Time	Position	Applicant's Actions or Behavior
<u>Key Parameter Response:</u> None		
<u>Expected Annunciators:</u> 5041-7D, Not Avail SM Sys Division 1		
<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. ○ Directs Equipment Operator to investigate.
	BOP	<ul style="list-style-type: none"> • Reports loss of power to 1SM001A to SRO. • Refers to ARP 5041-7D. ○ Directs Equipment Operator to investigate.
	SRO	<ul style="list-style-type: none"> • Acknowledges report from BOP. • Directs actions listed above. ○ Contacts Maintenance to investigate. • Evaluates and enters Technical Specification LCO 3.6.2.4 C.1 (requires the SPMU subsystem must be restored to OPERABLE within 7 days). • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. ○ May direct one time control power fuse replacement for 1SM001A breaker. ○ Informs Shift Manager. ○ Conducts a brief.
Terminus: ITS 3.6.2.4 evaluated for loss of control power to Suppression Pool Dump Valve		

NOTES:

Operator Actions

Event No.(s): 7		Page 1 of 1
Description: Low Flow CW Bearing Seal Water		
Initiation: Following Event 6 and upon direction of the Lead Examiner, insert REMOTE 4		
Cues: Annunciator 5041-3G, Low Flow CW Pump 1C Brg Seal Water		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> None</p> <p><u>Expected Annunciators:</u> 5041-3G, Low Flow CW Pump 1C Brg Seal Water</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. ○ Performs Plant Announcements. ○ Dispatches Equipment Operator to investigate CW Pump 1C Bearing Seal Water flow issue. ○ Monitors CW pump bearing temperatures (computer points CW-BA027, CW-BA028, and CW-BA029) (may be performed by BOP). ○ Dispatches Equipment Operator to investigate RPS Inverter 'A' Trouble alarm (received when CW Pump 1A is started). ○ Directs an Equipment Operator to reset the trouble alarm on RPS Inverter 'A'.
	BOP	<ul style="list-style-type: none"> • Reports issue to SRO. • Refers to ARP 5041-3G. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Performs Plant Announcements. ○ Dispatches Equipment Operator to investigate CW Pump 1C Bearing Seal Water flow issue. <p>Per 5041-3G, Low Flow CW Pump 1C Brg Seal Water:</p> <ul style="list-style-type: none"> • Directs Equipment Operator to flush CW Pump 1C TW supply strainer 1TW01MC. ○ Monitors CW pump bearing temperatures (computer points CW-BA027, CW-BA028, and CW-BA029) (may be performed by ATC). • Trips 1C CW Pump. • Starts standby (1A) CW Pump. ○ Dispatches Equipment Operator to investigate RPS Inverter 'A' Trouble alarm (received when CW Pump 1A is started). ○ Directs an Equipment Operator to reset the trouble alarm on RPS Inverter 'A'. ○ Notifies chemistry of CW pump shift.
	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. ○ May enter CPS 4004.02, Loss of Vacuum. (Vacuum should not substantially change) ○ Contacts Maintenance to investigate. ○ Informs Shift Manager. ○ Conducts a brief.
Terminus: CW Pump 1C has been tripped, CW Pump 1A is started.		

NOTES:

Operator Actions

Event No.(s): 8		Page 1 of 2
Description: RPV Instrument Line leak		
Initiation: Following Event 7 and upon direction of the Lead Examiner, insert REMOTE 5		
Cues: Annunciator, 5065-6F Sec. Cnmt. Area High Temp.		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Rising temperature on 1TR-CM 327 Secondary Containment Temperature Recorder Point 14 (Aux Bldg Gas Cont Boundary).</p> <p><u>Expected Annunciators:</u> 5065-6F Sec. Cnmt. Area High Temp.</p> <p><u>Automatic Actions:</u> None</p>		
[CT]	ATC	<ul style="list-style-type: none"> ○ Reports EOP-8 entry on secondary containment area temperature above max normal. ● Initiates a manual reactor scram when directed by SRO (before the first max safe temperature). ● Carries out Scram Choreography by reporting the following: <ul style="list-style-type: none"> - Mode Switch in shutdown, power is... - Rod status is... - Reactor power is ... and trend - Reactor pressure is ... and trend - Reactor water level is ... and trend - Any EOPs with entry conditions (no values required). ● Performs EOP actions as directed by the SRO. ○ Coordinates with BOP to monitor and control RPV level and pressure. ○ If directed by SRO, Anticipates Blowdown per EOP-1 by fully opening all six Turbine Bypass Valves.
[CT]	BOP	<ul style="list-style-type: none"> ○ Reports EOP-8 entry on secondary containment area temperature above max normal. ○ Makes plant announcement to evacuate Fuel/Aux Buildings. ○ Monitors secondary containment temperatures on 1H13-P678 recorders 1TR-CM326 and 327. ○ Reports secondary containment temperature parameters with trends at SRO direction. ○ Reports to SRO when one area is above Max Safe temperature. ● Performs scram choreography actions. <ul style="list-style-type: none"> ● Announces: <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 SRO. ○ Reports to SRO when two areas are above Max Safe temperatures. ○ Verifies operation of area coolers. ○ Verifies operation of VF. ○ Evacuates affected areas of Secondary Containment. ● Initiates ADS (Blowdown) if/when directed by the SRO. ○ If initiated, 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. ○ Coordinates with ATC to monitor and control RPV level and pressure.

Event No.(s): 8		Page 2 of 2
[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 EOP-8 Secondary Containment Control. • Directs a reactor scram before the first max safe temperature is exceeded (140° F on points 13 or 14 of 1TR-CM327). • Enters and executes EOP-1 RPV Control. ○ Anticipates Blowdown per EOP-1 OR • If 2 or more areas reach Max Safe temperature values of the same parameter (Table T, U, W), and a primary system is discharging into Secondary Containment, which cannot be isolated, enters and executes EOP-3 Blowdown.
[CT]		
<p>Terminus: The scenario can be terminated when either a blowdown has been initiated and RPV level is being maintained between Level 3 and Level 8 or when Secondary Containment temperatures are lowering and all rods are inserted.</p>		

NOTES:

Operator Actions

Event No.(s): 9		Page 1 of 1
Description: Radiation Monitor fails to isolate VF/Startup VG		
Initiation: Triggered by RPV Instrument Line leak (Event 8)		
Cues: Annunciators 5050-7F, 5052-7F and AR/PR 1RIX-PR006A-D monitor alarms		
Time	Position	Applicant's Actions or Behavior
<p>Key Parameter Response: 1RIX-PR006A-D Fuel Bldg Exhaust Rad Monitors</p> <p>Expected Annunciators: 5050-7F / 5052-7F High Rad Initiation SGTS Div 1 / 2</p> <p>Automatic Actions: 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. ○ Reports EOP-8 entry condition.
[CT] [CT]	BOP	<p>Performs actions directed by SRO and CPS 5050-7F, 5052-7F, Hi Rad Initiation VG:</p> <ul style="list-style-type: none"> • Verifies alarming condition of 1RIX-PR006A-D. ○ Reports EOP-8 entry condition. ○ Performs shutdown and isolation of VF IAW CPS 3404.01, Fuel Building Ventilation, step 8.3. • Isolates Fuel Building Ventilation (VF) by closing 1VF04Y/9Y AND 1VF06Y/7Y. • Performs startup of at least one Standby Gas (VG) train. <p>Note: Steps can be done in any order.</p>
[CT]	SRO	<ul style="list-style-type: none"> • Acknowledges report from ATC/BOP. • When Fuel Building exhaust is above 10 mrem/hr ensures Fuel Building Ventilation (VF) is isolated and Standby Gas (VG) is started. <ul style="list-style-type: none"> ○ Directs isolation of VF and startup of VG. <p>General:</p> <ul style="list-style-type: none"> • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. ○ Informs Shift Manager.
Terminus: Failed automatic isolation and actuation (VF/VG) manually performed and upon approval of lead examiner		

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-201 (PW 91632) @ 22% 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:
 - **ROD1641TFIA5** (Rod 16-41 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: Step 30 is in progress – Rod 16-41 of Gang 7E is at Position 16. All other rods in Gang 7E (40-41, 40-17, and 16-17 are at position 12.
12. Make sure Sequence A is selected.
13. Make sure Individual Drive Mode is selected on the OCM.
14. Load MCR Baseline Data on PPC Display #10. On the Data Viewer File Menu, click on "Viewer / Load Env / MCR Baseline.ual".
15. 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
16. Procedures that are expected to be used during this scenario are:
 - CPS 3004.01 Turbine Startup and Generator Synchronization
 - CPS 3502.01 480 VAC Distribution
 - CPS 5050.01 Alarm Panel 5050 Annunciators – Row 1
 - ITS 3.5.1 ECCS and RCIC System / ECCS-Operating
 - CPS 5014.02 Alarm Panel 5014 Annunciators – Row 2
 - CPS 3208.01 Cycled / Makeup Condensate (CY/MC)
 - CPS 5041.07 Alarm Panel 5041 Annunciators – Row 7
 - ITS 3.6.2.4 Suppression Pool Makeup (SPMU) System
 - ORM 2.5.1 Containment Penetration Conductor Overcurrent Protective Devices
 - CPS 5041.03 Alarm Panel 5041 Annunciators – Row 3
 - CPS 5006.05 Alarm Panel 5006 Annunciators – Row 5
 - ITS 3.1.3 Control Rod Operability
 - CPS 5002.02 Alarm Panel 5002 Annunciators – Row 2
 - CPS 3103.01 Feedwater (FW)

- CPS 5065.06 Alarm Panel 5065 Annunciators – Row 6
- CPS 5050.07 Alarm Panel 5050 Annunciators – Row 7
- CPS 5052.07 Alarm Panel 5052 Annunciators – Row 7
- EOP-8 Secondary Containment Control
- EOP-3 Emergency RPV Depressurization

17. Hang OOS tags on: RFPT 1B
18. Identify T/S issues associated with OOS and turnover: None
19. Operating Equipment: None
20. Marked up copies: NA
21. Verify simulator conditions match the turnover.

Event Triggers and Role Play

Event

1. **Cross tie Unit Sub 1L & 1M with 1L supplying**
 - a. Event Trigger – None
 - b. Role play – None

2. **Raise power with rods to 29%**
 - a. Event Trigger - None
 - b. Role play - None

3. **Uncoupled rod**
 - a. Event Trigger - None.
 - b. Role play
 - (1) Booth Operator - When control rod 16-41 is inserted, verify **Delete ROD1641TFIA5** is inserted (Delete Rod 16-41 Malfunction).

4. **TDRFP 'A' High Bearing Temperature**
 - a. Event Trigger - Following Event 3 and when directed by the Lead Examiner, **Activate Remote 1** and verify the following command(s):
 - (1) **YAFWPPLB_15** (Annunciator, 5002-2C High Temp RFPT 1A Brg).
 - b. Role play
 - (1) EO (when directed to check operation of the 'A' TDRFP) – acknowledge the order and tell the MCR that you're on your way to RP for a brief. Wait 5 minutes and report, "It smells like something is overheating in the 'A' TDRFP room. There is no indication of a fire in the room. I cannot precisely locate the overheating component."
 - (2) EO (when directed to check 1FWPRV1A is providing 12-15 psig to the turbine bearings) – "1FWPRV1A is set at 14 psig".
 - (3) EO (when directed to check 1FWPRV2A is providing at least 12 psig to the turbine bearings) – "1FWPRV2A is set at 15 psig".
 - (4) EO (when directed to perform prestart checks of the MDRFP) – "Prestart checks were completed when I performed my area tour".
 - (5) EO (when directed to check for proper operation of the MDRFP) – "The MDRFP is operating normally".
 - (6) EO (if directed to raise cooling water flow) – "Cooling water flow rate is high in the band."
 - (7) EO (if directed to check bearing bubbler oil flow) – "Bubbler oil flows are normal."
 - (8) EO (if directed to check conditions on the TDRFP 'A' room camera) – "All conditions appear to be normal."

5. **MC Pump 1B coupling failure**
 - a. Event Trigger – Following Event 4 and when directed by the Lead Examiner, **Activate Remote 2** and verify the following command(s):
 - (1) **YFFWPPSS_13** (MU Cond Xfer Pmp Disch Pressure lowers)
 - b. Role play
 - (1) EO (when directed to report status of MC Pump 'B'): report, "The coupling has failed on MC Pump 'B'".
 - (2) EO (when directed to shut the discharge valve on MC Pump 'A' – "The discharge valve for MC Pump 'A' is shut."
 - (3) EO (when directed to open the discharge valve on MC Pump 'A' – "The discharge valve for MC Pump 'A' is open."

6. **Loss of Control Power to Suppression Pool Dump Valve (1SM001A)**
 - a. Event Trigger – Following Event 5 and when directed by the Lead Examiner, **Activate Remote 3** and verify the following command(s):
 - (1) **A11_A05_S40_2 ON** (SM Div 1 MOV NOT AVAIL Status Light On).

- (2) **A11_A02_07_4_TVM2** (Annunciator 5041-7D, Not Avail SM Sys Division 1).
- (3) **A11_A08_DS30_1** (1SM001A Green Light Off)

b. Role play

- (1) EO (when directed to investigate): report “No abnormalities noted locally. The breaker for 1SM001A is not tripped.”

7. **Low Flow CW Bearing Seal Water**

- a. Event Trigger - Following Event 6 and when directed by the Lead Examiner, **Activate Remote 4** and verify the following command(s):

- (1) **A11_A02_03_7_TVM2**. (Annunciator 5041-3G, Low Flow CW Pump 1C Brg Seal Water)

b. Role play

- (1) EO (when directed to):
 - a) Check CW Pump 1C Seal Water Flow locally – report “CW Pump 1C Seal Water flow is 0 gpm locally.”
 - b) Check CW Pump 1A and/or 1B Seal Water Flow locally – report “Seal water flow is normal”.
 - c) Flush the CW Pump 1C TW Supply Strainer 1TW 01MC using 1TW605C Strainer Flush Valve – report “I have completed flushing 1TW01MC. CW Pump 1C Seal Water flow is still 0 gpm locally.”
 - d) Check operation of the Filtered Water Pumps – report “Filtered Water Pumps are operating normally.”
 - e) Stop CW Pump Discharge Header – SI Injection {Carrier Water} by performing 3209.01 section 8.2.2 – acknowledge the order.
 - f) Stop CW Pump Suction Bay – NaOCl Injection by performing 3209.01 section 8.2.1 – acknowledge the order.
 - g) Verify CW Pump 1C Discharge Valve limit switch position locally – report “1CW001C is closed.”
 - h) Verify CW Pump 1C shaft has stopped rotating – report “CW Pump 1C shaft is not rotating.”
 - i) Align [SI] and NaOCl Injection to CW Pump 1A – acknowledge the order.
 - j) Check RPS Solenoid Inverter ‘A’ trouble – “RPS ‘A’ has a “Loss of Sync” LED lit. RPS ‘A’ AC Output Frequency is 60 Hz and AC Voltage is 120 VAC.
 - k) Reset RPS Solenoid Inverter ‘A’ trouble – acknowledge report and then release YP_XREMT_35 = RESET in the simulator lesson plan.

8. **RPV Instrument Line leak**

- a. Event Trigger - Following Event 7 and when directed by the Lead Examiner, **Activate Remote 5** and verify the following command(s):

- (1) **YP_XMFTB_5082 0.08%**. (indication of leak into the Gas Control Boundary)

b. Role play:

- (1) Maintenance (after 2 minutes from scram announcement) – report to the MCR as IMD.
- (2) WEC (if asked to determine which FP XL-3 points in alarm) – report, “Multiple AB 737E and 762E points are in alarm.
- (3) EO (if directed to perform inspections of the AB 737E and/or 762E gas boundary) – report, “The east side gas boundary areas are hot and humid. I opened the door, observed steam, reclosed the door and exited the area.”

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

- a. Event Trigger – During Event 9 verify the following command(s):

- (1) **CAM1PR006(A/B/C/D)TV_VALUE1=20 mr** (PR006A/B/C/D = 20 mr)
- (2) **A12_A01_07_6_TVM2** (Annunciator 5050-7F, Hi Rad Initiation SGTS Div 1)
- (3) **A12_A02_07_6_TVM2** (Annunciator 5052-7F, Hi Rad Initiation SGTS Div 2)

b. Role play

- (1) EO (If directed to S/D VF locally):
 - a) Wait 3 minutes then release – ‘Shutdown VF locally’.
 - b) Report “VF is shutdown locally”.

Turnover

1. The plant is in Mode 1, operating at ~ 22% power.
 - CPS 3004.01 Turbine Startup and Generator Synchronization is in progress. Section 5.0 Prerequisites are complete. Steps 8.1.1 – 8.4.11 are complete.
 - Control rods - Step 30 / Rod 16-41 in Gang 7E is at position 16. Remaining rods in Gang 7E (40-41, 40-17, and 16-17) are at position 12.
 - Plans for the shift are to transfer 480V Unit Subs 1L & 1M with 1L supplying per CPS 3502.01 480 VAC Distribution section 8.1.4 Transferring a 480V Bus: Paralleling Method. When complete, continue with power ascension to 29% per REMA A15-001 step 1.
 - MDRFP is in STANDBY (prestart checks complete).
 - TDRFP 'A' is in auto on the MLC with 1FW010A RFP 1A Min Flow Valve in manual at 100% open to maintain TDRFP 'A' speed > 3000 RPM.
2. Status of Tagged Out Equipment
 - Turbine Driven Reactor Feed Pump TDRFP 'B' is out of service for minor maintenance. Restoration is expected prior to transferring RR Pumps 'A' and 'B' to fast speed (expected next shift).
3. Today Day Shift
4. Weather Conditions
 - Thunderstorms are expected in the area within the next hour.
5. Thermal Limit Problems or concerns
 - Power ascension to 29% in progress per CPS 3004.01 Turbine Startup and Generator Synchronization.
 - The RE has requested that individual drive mode be used when withdrawing rods in gangs 7E, 7F, and 7G to allow close monitoring of thermal limits.
 - RE is stationed in the MCR to monitor power ascension.
 - Rod Verifier is available when requested.
6. LCO's in effect
 - None
7. Surveillances in progress
 - None
8. Previous Shift Evolutions completed
 - None
9. Evolutions planned for the shift
 - Cross-tie 480V MCCs 1L & 1M with 1L supplying per CPS 3502.01 480 VAC Distribution
10. Risk Levels
 - Green
 - Protected Equipment – FC Pump 'B', Div 1 and Div 2 VX
11. Dose equivalent Iodine 131 is reading 1.5 E-6 μ curies per gram.

Exelon Nuclear

ILT 14-1 NRC Exam

**Scenario Number:
NRC Exam Scenario 2**

Revision Number: 1

Date: 11/07/14

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

Appendix D

Scenario Outline

Form ES-D-1

Facility: <u>Clinton Power Station</u>	Scenario No.: <u>2</u>	Operating Test No.: <u>2015-301</u>	
Examiners: _____ _____	Operators: _____ _____		
<p>Initial Conditions:</p> <ul style="list-style-type: none"> • Mode 1 Rx Power at 97%. • Thunderstorms are expected in the area within the next hour. • Control Rod 12-25 is stuck at position 48 and has been hydraulically disarmed IAW CPS 3304.01 Control Rod Hydraulic and Control (RD) section 8.2.5.1 Hydraulically Disarming Stuck Withdrawn Control Rod. <p>Turnover:</p> <ul style="list-style-type: none"> • Perform CPS 9064.01 Drywell Post-LOCA Vacuum Breaker Verification Test. • On the previous shift, the Drywell was vented per CPS 3316.01 Containment Combustible Gas Control (HG) to support performance of CPS 9064.01. • Maintain Rx Power at 97%. 			
Event No.	Malf. No.	Event Type*	Event Description
1	A06_S12_1 Press	N-BOP TS-SRO	Drywell Vacuum Breaker Test
2	A01_A01_02_5_TVM=2	C-ATC/SRO	'B' RWCU pump seal plate temperature high
3	YP_XMFTB_5010	C-BOP TS-SRO	Train A Control Room Supply Fan (0VC03CA) trips
4	A02_A05_01_7_TVM=2	C-ATC/SRO	CRD high temperature
5	N/A	R-ATC/SRO	EPR for Grid Load Reduction
6	YP_XMFTB_4102	I-BOP/SRO	Spurious HPCS auto initiation
7	YPXMALSE_252 YPCTHOLE 25% A02_A12_S01 Run	M- SRO/ATC/BOP	MSL 'D' Rupture in the Drywell/Drywell Failure / ATWS (Manual Scram PBs Successful) / Fig N Blowdown
8	RH0VCE12F028AFP=0	C-BOP/SRO	Div 1 Containment Spray Manual Initiation failure
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

Scenario No.: 2Operating Test No.: 2015-301

Narrative Summary

Event #	Description
1.	<p>Drywell Vacuum Breaker Test Following shift turnover, the SRO will direct the BOP Operator to perform CPS 9064.01 Drywell Post-LOCA Vacuum Breaker Verification Test. When the BOP depresses the test pushbutton for 1HG010D it will open but fail to reclose. The SRO will enter ITS 3.6.5.6 Drywell Post-LOCA Vacuum Relief System Action A.1 requiring 1HG010D to be reclosed within 4 hours.</p>
2.	<p>'B' RWCU pump seal plate temperature high Annunciator CLEANUP PUMP SEAL GLAND PLATE TEMP HI (5000-2E) comes in due to RWCU Recirc Pump B (1G33-C001B) developing excessive seal leak requiring its removal from service. The ATC Operator will dispatch a Equipment operator and coordinate/perform operations per CPS 3303.01 Reactor Water Cleanup (RT) Sections 8.1.3 System/Filter Demin Flow Control and 8.1.4 Removing RWCU Pump(s) From Service.</p>
3.	<p>Train A Control Room Supply Fan (0VC03CA) trips Annunciator AUTO TRIP PUMP/FAN DIVISION 1 (5050-1A) comes in due to the Train A Control Room Supply Fan (0VC03CA) tripping. The BOP Operator will coordinate with the Equipment operator to shift Control Room HVAC (VC) to Train B per CPS 3402.01 Section 8.1.7 Shifting Ventilation Trains. Technical Specification LCO 3.7.3 Actions A.1 will be evaluated requiring restoration of control room ventilation subsystem to an operable status within 7 days. Technical Specification LCO 3.7.4 Actions A.1 will also be evaluated requiring restoration of control room AC subsystem to an operable status within 30 days.</p>
4.	<p>CRD high temperature Annunciator CRD HYDR TEMP HI (5006-1G) is received. The ATC operator will dispatch a Equipment 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.</p>
5.	<p>EPR for Grid Load Reduction The Transmission System Operator (TSO) will call the MCR and direct CPS to lower Generator output by 80 MWe to mitigate degraded grid conditions. IAW OP-CL-108-107-1002 Degraded Grid Actions, the SRO will direct performance of an Emergency Power Reduction. The ATC will lower power by 80 MWe within 15 minutes of the TSO request.</p>
6.	<p>Spurious HPCS auto initiation High Pressure Core Spray (HPCS) initiates with no operator action. 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.</p>
7.	<p>MSL break in the Drywell / ATWS (Manual Scram PBs successful) / Fig N Blowdown The 'D' Main Steam Line will rupture inside the Drywell causing DW pressure to rise. The SRO will enter CPS 4100.01 Coolant Leakage off-normal and direct the reactor to be scrammed. When the ATC places the mode switch in shutdown, the reactor will fail to scram. The ATC will arm and depress the Manual Scram Pushbuttons and initiate ARI to successfully insert all control rods. The crew will evacuate the containment. The SRO will enter EOP-1A ATWS RPV Control. The SRO will enter EOP-6 Primary Containment Control and will direct the BOP operator to initiate containment spray when Containment pressure reaches the OK to Spray region of EOP-6 Figure O Containment Spray Initiation Limit. When Containment Pressure exceeds EOP-6 Figure N Pressure Suppression Pressure limit, the SRO will direct the crew to perform a reactor blowdown per EOP-3 Emergency Depressurization (Blowdown).</p>
8.	<p>Div 1 Containment Spray arm & depress failure When the BOP operator arms & depresses the manual pushbutton for CNMT SPRAY A MANUAL INITIATION, 1E12-F028A RHR 'A' To CNMT Spray 'A' Shutoff Vlv will fail to open, requiring the BOP to manually align 1E12-F028A using the MCR control switch.</p>

EOP
1, 6, 3

Critical tasks:

- RPV-6.1 BOP/ATC inserts control rods and/or start Standby Liquid Control Pumps to shutdown the reactor.
- PC-7.1 Within 10 minutes of exceeding Figure N and containment pressure continuing to rise, the SRO will enter EOP-3 Emergency RPV Depressurization. If the crew Anticipates Blowdown using bypass valves, and in doing so Containment Pressure can be reduced / maintained below Fig. N, then this critical task is considered to be met. (PRA)

Shift Turnover Information

⇒ **Day of week and shift**

- ◆ Today Day Shift.

⇒ **Weather conditions**

- ◆ Thunderstorms are expected in the area within the next hour.

⇒ **(Plant power level)**

- | | |
|---|---|
| <ul style="list-style-type: none"> ◆ Mode 1 at ~ 97% ◆ ◆ | <ul style="list-style-type: none"> ◆ Step 32, Gang 14A is at Position 02. ◆ |
|---|---|

⇒ **Thermal Limit Problems/Power Evolutions**

- | | |
|---|--|
| <ul style="list-style-type: none"> ◆ None ◆ | <ul style="list-style-type: none"> ◆ ◆ |
|---|--|

⇒ **Existing LCOs, date of next surveillance**

- ◆ ITS 3.1.3 – Control Rod 12-25 is stuck at position 48 (A.1, A.2, and A.3 actions are complete)

⇒ **Surveillances or major maintenance**

- ◆ None

⇒ **Equipment to be taken out of or returned to service this shift/maintenance on major plant equipment**

Perform CPS 9064.01 Drywell Post-LOCA Vacuum Breaker Verification Test.

⇒ **Comments, evolutions, problems, etc.**

- | | |
|--|---|
| <ul style="list-style-type: none"> ◆ Online Risk is Green ◆ Protected Equipment: FC 'B', Div 1 and 2 VX ◆ ◆ ◆ | <ul style="list-style-type: none"> ◆ Maintain power at 97% throughout the shift. ◆ On the previous shift, the Drywell was vented per CPS 3316.01 Containment Combustible Gas Control (HG) to support performance of CPS 9064.01. ◆ ◆ ◆ |
|--|---|

Operator Actions

Event No.(s): 1		Page 1 of 1
Description: Drywell Vacuum Breaker Test		
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> 1HG010D indicating lights</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 and notifies the SRO of any unusual or unexpected conditions. ○ Dispatches an Equipment Operator to determine the position of 1HG010D.
	BOP	<ul style="list-style-type: none"> ○ Monitors control room panels and notifies the SRO of any unusual or unexpected conditions. <p>Per CPS 9064.01 Drywell Post-LOCA Vacuum Breaker Verification Test, tests 1HG010A-D & 1HG011A-C one at a time:</p> <ul style="list-style-type: none"> • During testing verifies each vacuum breaker fully opens (Red light on – green light off) and then fully recloses (Green light on – red light off). • Tests 1HG010D and recognizes that the valve fails to close (red light stays on). • Reports failure to SRO. ○ Dispatches an Equipment Operator to determine the position of 1HG010D. • Does NOT test 1HG011D.
	SRO	<ul style="list-style-type: none"> • Directs actions listed above. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations standards and approved procedures. • References ITS 3.6.5.6. ○ References ORM 2.4.6 and determines ORM 2.4.6 DW Vac Breaker Position Ind is met. • Enters ITS 3.6.5.6 Action A.1 Close the post-LOCA vacuum relief subsystem within 4 hours (determines the action met with 1HG011D shut). • Does NOT test 1HG011D. ○ Contacts the Shift Manager and maintenance to report failure of 1HG010D and entry into ITS 3.6.5.6 A.1.
Terminus: Testing of 1HG010A, 11A, 10B, 11B, 10C, 11C, and 10D performed and Technical Specifications evaluated.		

NOTES:

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

Operator Actions

Event No.(s): 2		Page 1 of 1
Description: 'B' RWCU pump seal plate temperature high		
Initiation: Following Event 1 and upon direction of the Lead Examiner, insert REMOTE 1		
Cues: Annunciator 5000-2E, Cleanup Pump Seal Gland Plate Temp Hi		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> None</p> <p><u>Expected Annunciators:</u> 5000-2E, Cleanup Pump Seal Gland Plate Temp Hi</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> • Monitors reactor to ensure operations remain within established bands. • Reports issue to SRO. • Refers to ARP 5000-2E. <ul style="list-style-type: none"> ○ Dispatches an Equipment Operator to investigate/support RWCU operation. <p>Per CPS 3303.01, RWCU step 8.1.4 and 8.1.3:</p> <ul style="list-style-type: none"> • Directs Equipment Operator to remove all Filter demins from service. • Throttles open the F/D bypass valve (1G33-F044) to maintain RT system flow 150 – 300 gpm. • Secures RWCU pump 'B'. Throttles 1G33-F044) to maintain RT system flow ~ 150 gpm. <ul style="list-style-type: none"> ○ Places one F/D in service while monitoring RT system flow. ○ Shuts the F/D bypass valve (1G33-F044).
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. <ul style="list-style-type: none"> ○ Dispatches an Equipment operator to investigate/support RWCU operation.
	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. <ul style="list-style-type: none"> ○ Informs Shift Manager. ○ Conducts a brief. ○ Contacts Maintenance to investigate.
Terminus: RWCU pump 1B has been shutdown IAW CPS 3303.01.		

NOTES:

Operator Actions

Event No.(s): 3		Page 1 of 1
Description: Train A Control Room Supply Fan (0VC03CA) trips		
Initiation: Following Event 2 and upon direction of the Lead Examiner, insert REMOTE 2		
Cues: Annunciator CPS 5050-1A, Auto Trip Pump / Fan Division 1 <u>and</u> 0VC03CA amber light lit.		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> 0VC03CA amber light lit</p> <p><u>Expected Annunciators:</u> 5050-1A, Auto Trip Pump / Fan Division 1</p> <p><u>Automatic Actions:</u> Control Room Rtrn Fan (0VC04CA), HVAC Heating Coil (0VC01AA), Chiller (0VC13CA), Ch Wtr Pmp (0VC08PA) trip.</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 an Equipment Operator to investigate/prepare to shift VC trains.
	BOP	<ul style="list-style-type: none"> • Reports issue to the SRO. ○ Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Dispatches an Equipment Operator to investigate/prepare to shift VC trains. <p>Per 3402.01P001, VC Train Shifting</p> <ul style="list-style-type: none"> • Directs Equipment Operator to perform local operations. • Shuts Locker Room EXH Fan ISOL DMPR 0VC69Y. • Shuts Locker Room EXH Fan ISOL DMPR 0VC70Y. • Stops Cont Rm Trn A Supply Fan 0VC03CA. • Verifies VC System Dampers reposition. • Starts Cont Rm Trn B Supply Fan 0VC03CB. • Verifies VC System Dampers reposition. • Opens Locker Room EXH Fan ISOL DMPR 0VC69Y. • Opens Locker Room EXH Fan ISOL DMPR 0VC70Y. • Direct Equipment Operator to perform VC Chiller 'B' Startup.
	SRO	<ul style="list-style-type: none"> • Acknowledges report from BOP. ○ Directs actions listed above. • Evaluates and enters TS 3.7.3 Action A.1 and TS 3.7.4 Action A.1. • Ensures operations are conducted within the bounds of Tech Specs and IAW Operations expectations, standards and approved procedures. ○ Informs Shift Manager. ○ Conducts a brief. ○ Contacts Maintenance to investigate and repair VC Fan.
Terminus: VC train B is running and Technical Specifications evaluated		

NOTES:

Operator Actions

Event No.(s): 4		Page 1 of 1
Description: CRD high temperature		
Initiation: Following Event 3 and upon direction of the Lead Examiner, insert REMOTE 3		
Cues: Annunciator 5006-1G, CRD Hydr Temp Hi		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> CRD 52-25 operating temperature</p> <p><u>Expected Annunciators:</u> 5006-1G, CRD Hydr Temp Hi</p> <p><u>Automatic Actions:</u> None</p>		
	ATC	<ul style="list-style-type: none"> • Reports issue to SRO. • Refers to ARP 5006-1G. <ul style="list-style-type: none"> ○ Directs Equipment Operator to investigate and determine which control rod has high temperature. • 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, notifies the SRO of unusual/unexpected conditions. ○ Monitors reactor to ensure operations remain within established bands. ○ Directs an Equipment Operator to investigate.
	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 at position 46; Annunciator 5006-1G clear		

NOTES:

Operator Actions

Event No.(s): 5		Page 1 of 1
Description: EPR for Grid Load Reduction		
Initiation: Following Event 4 and upon direction of the Lead Examiner		
Cues: Contact MCR as Transmission System Operator and direct CPS to lower Generator output by 80 Mwe.		
Time	Position	Applicant's Actions or Behavior
<p><u>Key Parameter Response:</u> Reactor Power, Generator MWe, RR Flow</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. <p>CPS 3005.01 Unit Power Changes, Section 8.2:</p> <ul style="list-style-type: none"> ○ Makes an announcement that the plant is performing an Emergency Power Reduction at the request of the Transmission System Operator. • Lowers Reactor Power ~ 80 MWe by reducing Reactor Recirc flow and/or rods. ○ Monitors Generator output. • Monitors for core instabilities. ○ Reports when Generator output has been lowered by ~ 80 MWe.
	BOP	<ul style="list-style-type: none"> • Monitors control room panels, notifies the SRO of unusual/unexpected conditions. ○ Makes an announcement that the plant is performing an Emergency Power Reduction at the request of the Transmission System Operator. ○ Monitors Generator output. ○ Reports when Generator output has been lowered by ~ 80 MWe.
	SRO	<ul style="list-style-type: none"> • Acknowledges reports from ATC/BOP. • Directs ATC to perform an Emergency Power Reduction of 80 MWe per CPS 3005.01 Unit Power Changes Section 8.2. • Supervises the Emergency Power Reduction. ○ Reports to TSO when Emergency Power Reduction is complete. ○ Contacts RE, SM, MISO, Power Team, and RP of the power reduction.
Terminus: Clearly observable plant response from change in power level		

NOTES:

Operator Actions

Event No.(s): 6		Page 1 of 1
Description: Spurious HPCS auto initiation		
Initiation: Following Event 5 and upon direction of the Lead Examiner, insert REMOTE 4		
Cues: Annunciator 5062-4E, HPCS Pump Auto Start		
Time	Position	Applicant's Actions or Behavior
Key Parameter Response: None		
Expected Annunciators: Multiple annunciators		
Automatic Actions: 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"> • Stops HPCS Pump, 1E22-C001. • Shuts 1E22-F004 HPCS To CNMT Outbd Isln Valve. ○ 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. ○ 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): 7, 8		Page 1 of 3
Description: MSL break in the Drywell/Fig N Blowdown / Div 1 Containment Spray arm & depress failure		
Initiation: Following Event 6 and upon direction of the Lead Examiner, insert REMOTE 5		
Cues: Annunciator 5068-3A Drywell Ambient Temp High		
Time	Position	Applicant's Actions or Behavior
Key Parameter Response: Rising DW Pressure (multiple points), rising MSL 'D' temperature on recorder E31-R608 (P632)		
Expected Annunciators: Multiple		
Automatic Actions: RR FCVs lockout at 1.08 psig; ECCS and DGs actuate at 1.68 psig DW Pressure		
[CT]	ATC	<ul style="list-style-type: none"> ○ Reports DW Pressure rising. ○ Evacuates the Containment. ● Monitors leakage using available LD monitoring systems. ○ Attempts to locate and isolate the leakage (MSL 'D'). ● Places the Mode Switch in S/D. ● Carries out ATWS Scram Choreography by reporting: <ul style="list-style-type: none"> – Mode Switch in Shutdown... – Reactor Power is... and trend ● Determines Shutdown Criteria is not met. ● Arms and depresses Manual Scram Pushbuttons. ● Initiates ARI. ● Determines Shutdown Criteria is met ● Reports: <ul style="list-style-type: none"> – Shutdown Criteria is met – Reactor Power is... and trend – Reactor pressure is... and trend – Reactor water level is... and trend – Any EOPs with entry conditions (EOP-1, 6) (EOP-6 only if DW pressure is ≥ 1.68 psig) ● <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.
[CCT]		<ul style="list-style-type: none"> ● Secures both RR Pumps within one minute of DW pressure exceeding 1.68 psig. ● Rapidly depressurizes the RPV by opening all Main Turbine Bypass Valves when directed to anticipate blowdown by the SRO. ● Performs EOP actions as directed by SRO.

Event No.(s):	7, 8	Page 2 of 3
[CT]	BOP	<ul style="list-style-type: none"> ○ Reports DW Pressure rising. ○ Evacuates the Containment. ● Monitors leakage using available LD monitoring systems. ● Attempts to locate and isolate the leakage (MSL 'D'). <p>Carries out ATWS Scram Choreography by:</p> <ul style="list-style-type: none"> ● Announcing: <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 met to SRO. <p>Per EOP-1 RPV Control and/or EOP-3 Emergency RPV Depressurization (Blowdown):</p> <ul style="list-style-type: none"> ○ Terminates and prevents LPCS and LPCI injection when directed by the SRO by providing close signals to: <ul style="list-style-type: none"> ○ 1E21-F005 LPCS To Cnmt Outbd Isol Valve ○ 1E12-F042A LPCI Fm RHR A Shutoff Valve ○ 1E12-F042B LPCI Fm RHR B Shutoff Valve ○ 1E12-F042C LPCI Fm RHR C Shutoff Valve. <p>Per EOP-6 Primary Containment Control:</p> <ul style="list-style-type: none"> ● Starts Drywell Mixers, as directed by the SRO. ● Monitors the start of the ECCS Systems on High Drywell Pressure. ● Starts Containment Spray, as directed by the SRO. ● Determines failure of 1E12-F028A RHR A To CNMT Spray Shutoff Vlv to automatically open (failure of Containment Spray Loop 'A' to initiate) and manually opens 1E12-F028A. ● Operates ECCS Systems as needed to control RPV Water Level between Level 3 and Level 8. <p>Per EOP-3 Emergency RPV Depressurization (Blowdown):</p> <ul style="list-style-type: none"> ● Sounds the Containment Evacuation Alarm. ● Initiates ADS when directed by the SRO. ● Verifies 7 ADS valves open (if ADS is initiated).

Event No.(s): 7, 8		Page 3 of 3
[CCT]	SRO	<ul style="list-style-type: none"> ● Acknowledges reports from ATC/BOP. ○ Directs ATC/BOP to perform a manual Group 1 Isolation. <p>Enters and executes 4001.01 Reactor Coolant Leakage:</p> <ul style="list-style-type: none"> ● Directs ATC/BOP to attempt to locate the source of the leakage. <p>Enters CPS 4100.01 Reactor Scram:</p> <ul style="list-style-type: none"> ● Directs ATC to scram the reactor if DW Pressure reaches 1.3 psig and rising ● Carries out Scram Choreography by performing an Update: <ul style="list-style-type: none"> ● Update ● Entering EOP-1 and 6 ● 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. ● Determines Shutdown Criteria is met when Manual Scram pushbuttons have been armed and depressed and transitions from EOP-1A back to EOP-1. <p>Enters EOP-1 RPV Control, and directs the following:</p> <ul style="list-style-type: none"> ● Stabilize RPV pressure between 800 to 1065 psig with Bypass Valves or SRVs. ● Control RPV water level between Level 3 to Level 8 by using Preferred Injection Systems. ○ Anticipates blowdown and directs the ATC to depressurize the RPV rapidly using the Turbine Bypass Valves when determination is made that Containment Pressure cannot be maintained below EOP-6 Fig. N Pressure Suppression Pressure limit. <p>Enters EOP-6, Primary Containment Control, and directs the following:</p> <ul style="list-style-type: none"> ● Start DW Mixing Compressors. ● Initiate Containment Spray when Containment Pressure reaches the OK TO Spray Region of Fig. O Containment Spray Initiation Limit curve. <p>Enters EOP-3, Emergency RPV Depressurization, when Containment Pressure cannot be lowered below EOP-6 Figure N Pressure Suppression Pressure limit:</p> <ul style="list-style-type: none"> ○ Directs BOP to terminate LPCS and LPCI injection not needed for core cooling (may also be directed from the pressure leg of EOP-1 RPV Control). ● Directs initiation of ADS (only if Containment Pressure cannot be lowered below Figure N Pressure Suppression Pressure limit). ○ Directs the isolation of RT and/or RR. ● Ensures operations are conducted IAW Operations standards and approved procedures.
		Terminus: 7 SRVs open and/or all Turbine Bypass Valves open. RPV level maintained between Level 3 and Level 8.

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-202** (PW 91632) @ **97% 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:
 - ROD1225TFIA6 Rod 1225 Accumulator Trouble
 - ROD 1225 TFIA4 Rod 1225 Is Stuck At Present Location
 - RH0VCE12F028AFP E12F028A (immediate) Fail-To Position
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 32** is in progress - **Gang 14A** is at **Position 02**.
12. Make sure Sequence A is selected.
13. Make sure Individual Drive Mode is selected on the OCM.
14. Load MCR Baseline Data on PPC Display #10. On the Data Viewer File Menu, click on "Viewer / Load Env / MCR Baseline.uall".
15. 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
16. Procedures that are expected to be used during this scenario are:
 - CPS 3005.01 Unit Power Changes
 - CPS 9064.01 Drywell Post-LOCA Vacuum Breaker Verification Test
 - ITS 3.6.5.6 Drywell Post-LOCA Vacuum Relief System
 - ORM 2.4.6 Drywell Post-LOCA Vacuum Relief Valves
 - CPS 5000.02 Alarm Panel 5000 Annunciators – Row 2
 - CPS 3303.01 Reactor Water Cleanup (RT)
 - CPS 5050.01 Alarm Panel 5050 Annunciators – Row 1
 - CPS 3402.01P001 Control Room HVAC (VC) Train Shifting
 - ITS 3.7.3 Control Room Ventilation System
 - ITS 3.7.4 Control Room Air Conditioning (AC) System
 - CPS 5006.01 Alarm Panel 5006 Annunciators – Row 1
 - CPS 3304.01 Control Rod Hydraulic & Control (RD)
 - CPS 5062.04 Alarm Panel 5062 Annunciators – Row 4
 - CPS 5062.02 Alarm Panel 5062 Annunciators – Row 3
 - CPS 5064.01 Alarm Panel 5064 Annunciators – Row 1
 - CPS 5064.04 Alarm Panel 5064 Annunciators – Row 4
 - CPS 5042.02 Alarm Panel 5042 Annunciators – Row 2
 - CPS 5042.03 Alarm Panel 5042 Annunciators – Row 3

- CPS 5130.01 Alarm Panel 5130 Annunciators – Row 1
- CPS 5002.02 Alarm Panel 5002 Annunciators – Row 2
- CPS 3009.01 High Pressure Core Spray (HPCS)
- ITS 3.5.1 ECCS – Operating
- CPS 4100.01 Reactor Scram
- EOP-1 RPV Control
- EOP-1A ATWS RPV Control
- EOP-6 Primary Containment Control
- EOP-3 Emergency RPV Depressurization

17. Hang OOS tags on: N/A
18. Identify T/S issues associated with OOS and turnover: None
19. Operating Equipment: None
20. Marked up copies: NA
21. Verify simulator conditions match the turnover.

Event Triggers and Role Play

Event

1. Drywell Vacuum Breaker Test

- a. Event Trigger – When 1HG010D is opened, verify the following command(s):
 - (1) H_A06_S12_1 Press (HG010D Test Pushbutton remains depressed after PB released)
- b. Role play
 - (1) Independent Verifier (IV) - as necessary (do NOT cue the examinee)
 - (2) EO (when directed to determine the position of 1HG010D) – Wait 3 minutes and report, “1HG010D is fully open”.

2. ‘B’ RWCU pump seal plate temperature high

- a. Event Trigger - Following Event 1 and when directed by the Lead Examiner, **Activate Remote 1** and verify the following command(s):
 - (1) **A01_A01_02_5_TMV=2** (Annunciator 5000-2E, Cleanup Pump Seal Gland Plate Temp Hi)
- b. Role Play
 - (1) EO (if requested):
 - a) To check RT pump seal temperatures locally – report, “‘B’ RT pump seal temperature is 285 degrees and rising slowly”.
 - b) Verify CCW lineup/‘A’ RT pump status – report, “CCW is lined up to the RT pumps and the ‘A’ RT pump is at 175 degrees and stable”
 - c) To check for steam in the RT pump room – report, “there is no steam in the room.”
 - d) To perform local actions to isolate and vent ‘B’ RT pump - respond that you will go to RP to obtain a Hi Rad Brief.
 - (2) Chemistry:
 - a) When informed of RT F/D removal from service – acknowledge the report.
 - b) If/When asked on preference on final F/D alignment – report, “Chemistry has no preference on which F/D to restore to service.
 - (3) Booth Operator (when requested):
 - a) To remove RT F/D ‘A’ from service, **Release - Remove RT F/D ‘A’ from service**
 - b) To remove RT F/D ‘B’ from service, **Release - Remove RT F/D ‘B’ from service**
 - c) To place RT F/D ‘A’ in service, **Release - Place RT F/D ‘A’ back in service**
 - d) To place RT F/D ‘B’ in service, **Release - Place RT F/D ‘B’ back in service**

3. Train A Control Room Supply Fan (0VC03CA) trips

- a. Event Trigger – Following Event 2 and when directed by the Lead Examiner, **Activate Remote 2** and verify the following command(s):
 - (1) **YP_XMFTB_5010** (Trip 0VC03CA)
- b. Role Play
 - (1) EO – (when directed to investigate the trip of 0VC03CA ‘A’ MCR HVAC Supply Fan), acknowledge the order and report that the breaker for 0VC03CA has tripped on overcurrent.
 - (2) EO – when directed to perform the following actions from CPS 3402.01P001:
 - a) Section 8.1.7.1 Humidification Line Up For Shifting VC Trains - wait 1 minute and report, “CPS 3402.01P001 section 8.1.7.1 is complete.”
 - b) Section 8.1.7.2 Removing Sidestream Filter Skid From Service - wait 1 minute and report, “CPS 3402.01P001 section 8.1.7.2 is complete.”
 - c) Section 8.1.7.3 ‘A’ VC Chiller Shutdown:
 - (1) **Release Event 3 Secure VC Chiller ‘A’** and verify remote function **VC10VC_CHILLERATCC OFF**, and then report, “3402.01P001 section 8.1.7.3 is complete. ‘A’ VC Chiller has been secured.”

- d) Step 8.1.7.4.1 Place Control Room Heating Coil A control switch 0HS-VC032 in OFF – wait one minute and report, “Control Room Heating Coil A control switch 0HS-VC032 has been placed in OFF.”
- e) Steps 8.1.7.5.1 - 8.1.7.5.6 (Local operations for ventilation train startup), wait 2 minutes and report, “Steps 8.1.7.5.1 - 8.1.7.5.6 are complete.”
- f) Step 8.1.7.5.9 Place Control Room Heating Coil B control switch 0HS-VC132 in ON, wait 1 minute and report, “The Control Room Heating Coil B control switch 0HS-VC132 has been placed in ON.”
- g) Step 8.1.7.5.15 Back Draft Damper Position Verification – wait one minute and report, “VC Train ‘A’ Back Draft Dampers (OVC22YA, 25YA, 28YA, 31YA, 34YA, 37YA, and 40YA) have been verified shut.”
- h) Section 8.1.7.6 ‘B’ VC Chiller Startup:
 - (1) At step 8.1.7.6.6, request the MCR verify 0VC06AB, Cont Rm Ch Wtr Coil Drain Valve control switch is in the FILL position.
 - (2) **Release Event 3 Start VC Chiller ‘B’** and verify the following command **Insert VC10C_CHILLERBTCC On**, then wait five minutes and report, “3402.01P001 section 8.1.7.6 is complete. VC Chiller ‘B’ is fully loaded and is operating normally. Chemistry has requested that I place the VC B Sidestream Filter Skid in-service per section 8.1.7.7. I have notified Chemistry that the VC Trains have been shifted and that monthly sampling may be required IAW 3402.01P001 step 8.1.7.6.25.”
 - (3) 3402.01P001 Appendix A: VC Chiller Start-up Data Log is complete. All VC Chiller ‘B’ parameters are within specifications.
- i) Section 8.1.7.7 Placing 1VC01FB In-Service – wait one minute and report, “Section 8.1.7.7 is complete. The VC ‘B’ Sidestream Filter has been placed in service.”
- j) Section 8.1.7.8 Humidification Lineup After VC Ventilation Train Shift – wait one minute and report, “Section 8.1.7.8 is complete. The VC Humidification Lineup is complete for VC ‘B’.”
- (3) Maintenance (when directed to investigate the trip of the ‘A’ VC Supply fan) - acknowledge the report and inform the SRO that maintenance technicians will be dispatched to investigate.
 - a) Maintenance (if asked whether maintenance requires the control switch for 0VC03CA to remain in auto after start for troubleshooting) – inform the MCR that the control switch for 0VC03CA can be positioned as desired without adversely affecting troubleshooting.

4. **CRD high temperature**

- a. Event Trigger – Following Event 3 and when directed by the Lead Examiner, **Activate Remote 3** and verify the following command(s):
 - (1) **A02_A05_01_7_TVM=2** (Annunciator 5006-1G CRD Hydr Temp Hi).
- b. Role play – None.
 - (1) EO (if requested):
 - a) Report, “CRD 52-25 is alarming at 255°F and rising slowly. 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 225°F and slowly lowering.
 - (2) RE (when informed of high CRD temperature / insertion of 52-25 to 46) – report, “No thermal limits will be approached by inserting rod 52-25 to position 46.”

5. **EPR for Grid Load Reduction**

- a. Event Trigger – Following event 4 and when directed by the Lead Examiner, contact the MCR as the Transmission System Operator and direct CPS to lower Generator output by 80 MWe to mitigate grid emergency conditions.
- b. Role play
 - (1) RE (if requested to come to the MCR) – report presence as RE.

6. Spurious HPCS auto initiation

- 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_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.

7. MSL break in the Drywell/Fig N Blowdown

- a. Event Trigger - Following Event 6 and when directed by the Lead Examiner, **Activate Remote 5** and verify the following command(s):
 - (1) **YPXFALSE_252 0.1% Ramp=00:10:00** (MSL D Rupture in DW to 0.1% over 10 min)
 - (2) **YPXFALSE_252 0.1% to 1.25% Ramp=00:20:00** (MSL D Rupture in DW to 1.25% over 20 min) – inserted automatically after Mode Switch placed in shutdown.
 - (3) **YPCTHOLE 20%** (Leak between Drywell and Containment) – inserted automatically after Mode Switch placed in shutdown.
- b. Role play
 - (1) Maintenance (after 2 minutes from scram announcement) – report to the MCR as IMD
 - (2) IMD (when requested to defeat VP-WO interlocks per 4410.00C006) – acknowledge the order and then **release 4410.00C006 Defeat VP-WO Intlks**. Wait 6 minutes and then report that CPS 4410.00C006 steps 3.1 – 3.6 are complete.

8. Div 1 Containment Spray arm & depress failure

- a. Event Trigger – None
- b. Role play – None

Turnover

1. The plant is in Mode 1, operating at ~ 97% power.
 - a. Control rods - Step 32 / Gang 14A @ position 02.

2. Status of Tagged Out Equipment
 - Control Rod 12-25 is stuck at position 48 and has been hydraulically disarmed IAW CPS 3304.01 Control Rod Hydraulic and Control (RD) section 8.2.5.1 Hydraulically Disarming Stuck Withdrawn Control Rod.

3. Today Day Shift

4. Weather Conditions
 - Thunderstorms are expected in the area within the next hour.

5. Thermal Limit Problems or concerns
 - Maintain power at 97%.
 - RE and Rod Verifier are available on request.

6. LCO's in effect
 - ITS 3.1.3 (Control Rod 12-25 is stuck at position 48 - A.1, A.2, and A.3 actions are complete)

7. Surveillances in progress
 - None

8. Previous Shift Evolutions completed
 - The Drywell was vented per CPS 3316.01 Containment Combustible Gas Control (HG) to support performance of CPS 9064.01 Drywell Post-LOCA Vacuum Breaker Verification Test.

9. Evolutions planned for the shift
 - Perform CPS 9064.01 Drywell Post-LOCA Vacuum Breaker Verification Test.

10. Risk Levels
 - Green
 - Protected Equipment: FC 'B', Div 1 and 2 VX

11. Dose equivalent Iodine 131 is reading 1.5 E-6 μ curies per gram.