



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
801 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4351

October 13, 1998

NOTE TO: NRC Document Control Desk  
Mail Stop 0-5-D-24

FROM: Mary Ann Bies, Licensing Assistant  
Operating Licensing Branch, RIII *Mary Ann Bies*

SUBJECT: OPERATOR LICENSING RETAKE EXAMINATION ADMINISTERED  
ON SEPTEMBER 1, 1998, AT CLINTON POWER STATION,  
DOCKET NO. 50-461

On September 1, 1998, an Operator Licensing Retake Examination was administered at the referenced facility. Attached, you will find the following information for processing through NUDOCS and distribution to the NRC staff, including the NRC PDR:

- Item #1 -
- a) Facility submitted outline and initial exam submittal, designated for distribution under RIDS Code A070.
  - b) As-given operating examination, designated for distribution under RIDS Code A070.
- Item #2 - Examination Report with the as-given written examination attached, designated for distribution under RIDS Code IE42.

Attachments: As stated

9810160040 981013  
PDR ADOCK 05000461  
V PDR

FINAL AS-RUN WALKTHROUGH JPMS FOR  
CLINTON RETAKE EXAM - WEEK OF 08/31/98

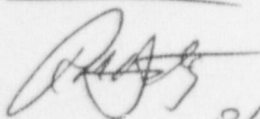
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A 070

Facility: <u>Clinton</u> Date of Examination: <u>September 1, 1998</u>		
Exam Level (Circle): RO/ <u>SRO(I)</u> SRO(U) Operating Test No.: <u>98-02</u>		
System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. 202001/Start RR Pump A in Slow D, S, L	1 - Reactivity Cont.	a. A2.10 - 3.9 - Seal Failure
		b. K4.17 - 3.5 - Fast Speed Pump Start
2. 209002/Manually Initiate HPCS D, S	2 - Inventory Cont.	a. K6.01 - 3.6 - Loss of Electrical Power
		b. G2.1.14 - 3.3 - Sys. Status Req. Notification
3. 223001/Emerg. S/U Standby DWC D, S	5 - Cont. Integrity	a. K6.11 - 3.0 - Loss of Electrical Power
		b. G2.1.12 - 4.0 - Not Qualified Equipment
4. 264000/Manually Start DG 1A D, A, S	6 - Electrical	a. K4.08 - 3.7 - Automatic Startup
		b. G2.1.12 - 4.0 - T.S. Requirements
5. 239001/Equalize Around and Open MSIVs D, S, L	3 - Pressure Cont.	a. A2.03 - 4.2 - MSIV Closure
		b. K4.01 - 3.8 - Automatic Isol. of Steam Lines
6. 217000/Shutdown Fl - Init. Sig. Clear N, S	4 - Heat Removal	a. A2.01 - 3.7 - Initiation Signal
		b. A2.17 - 3.4 - High Suppression Pool Lvl.
7. 261000/Purge PC Using VG N, S	9 - Rad. Release	a. K4.01 - 3.8 - Auto System Init.
		b. K6.04 - 3.1 High Rad. Response
8. 241000/Startup Steam Byp. HPU N, P, R	3 - Pressure Cont.	a. A2.01 - 3.7 - Pressure Reg. Failure
		b. A2.03 - 4.2 - Failed Open BPV
9. 201005/Respond to a Failed Transponder N, P	7 - Instrumentation	a. K3.02 - 3.5 - Effect on Reactor S/U
		b. K1.06 - 3.3 - Bypassed Rod in Gang
10. 400000/Respond to Abn. Level in CCW Exp. Tk. N, P, R	8 - Plant Service	a. K3.01 - 3.3 - Loads Cooled by CCW
		b. A2.01 - 3.4 - Loss of CCW Pump

\* - Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)liemate path, (C)ontrol room, (S)imulator, (L)ow Power, (P)lant, (R)CA

*Chief Examiner*



9/13/98

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

TASK TITLE: Start Reactor Recirculation Pump "A" in Slow Speed

TASK NUMBER: 011202C004

APPLICABILITY: RO    SRO X

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 15 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Initialize to an IC, similar to IC-5, at approximately 30% power. Shutdown the "A" RR pump by opening the CB1, CB2, CB3 and CB4 breakers and closing the FCV to minimum. Lockout the "A" FCV and restart the "A" RR HPU from the instructor console. Verify the Cavitation Interlock lights on P680 are both ON or both OFF.

**TASK STANDARDS:**

Reactor Recirculation Pump "A" is running in slow speed.

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3302.01, REACTOR RECIRCULATION, section 8.1.1

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

The plant is operating at approximately 30% power in single loop. The "B" loop is operating. The "A" RR pump is stopped and the "A" RR loop is unisolated. The CRS directs you to startup the "A" Recirc Pump in slow speed per section 8.1.1 of CPS 3302.01.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Start Reactor Recirculation Pump "A" in Slow Speed

- 8.1.1.1 (Local) Unless checked during drywell close-out, check RR pump motor oil level if the drywell is accessible. Reference MS-08.00 for proper RR Pump A(B), 1B33 C001A(B) oil level determination criteria.
- 8.1.1.2 (Local) Verify open 1C11-FO26A(B), CRD Supp Isol To RR Pump A(B) and verify CRD supply to the RR pump seals is 3-5 gpm on flowmeter 1C11-D020A(B). If required, adjust 1C11-D012A(B), Flow Control Valve to obtain 3-5 gpm. Flow regulator, 1C11-D012A(B) is used to adjust flow as follows (per K2801-0009): [CNMT755' AZM 189°].
- a) Loosen locknut and rotate stem until desired flow is attained. (Clockwise for decreasing flow, counter-CW for increasing flow)
  - b) Lock stem in desired position by holding stem steady while re-tightening locknut.

STANDARD:

Directs Area Operator to verify CRD flow to RR pump "A" seals at 3-5 gpm.

CUE:

Flow is 4 gallons per minute.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

NOTE

When starting pumps at low power/low feed flow conditions, the white light above the Cavitation Interlocks switch will stay on and the pumps will start in slow speed.

8.1.1.3 a) Zero the A/B loop SERVO ERROR

STANDARD:

Adjusts B33-K603A, Recirc Loop A Flow Control, so Servo Error meter indicates 0% on P680

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

8.1.1.3 b) Depress following reset buttons to clear interlocks/alarms:

- 1) FCV A/B Motion Inhibit Reset  
Verify the lead HPU becomes operational, and FCV motion is longer inhibited.
- 2) Pump A/B Vibration Reset.
- 3) Cav Intlk A/B Reset / Rx Run Back Reset.
- 4) Low Level Intlk A/B Reset

STANDARD:

Depresses "A" Motion Inhibit reset pushbutton and observes WHITE light OFF.  
Depresses "A" Vibration reset pushbutton.  
Depresses "A" Cavitation Interlock pushbutton.  
Depresses "A" Vessel Low Level pushbutton

CUE:

COMMENTS:

Cavitation interlock will not clear when feedwater flow is less than 30%.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

8.1.1.4 Verify RWCU system in operation with flow established through bottom head drain line to obtain a reliable indication of bottom head drain coolant temperature.

STANDARD:

Verifies RWCU system in operation with flow established through bottom head drain line.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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8.1.1.5 Within 15 min. prior to starting the A(B) RR pump, Verify following ITS SR 3.4.11.3/4 temperature limits and GEK-75635A Thermal Shock limits (use table below for data point locations) are met, and log data in the MCR Journal.

- a) Difference between bottom head coolant temperature and the RPV coolant temperature is  $\leq 100^{\circ}\text{F}$ . (ITS/GEK)
- b) Difference between the RPV coolant temperature in the RR loop to be started and the RPV coolant temperature is  $\leq 50^{\circ}\text{F}$ . (ITS/GEK)
- c) Difference between idle RR loop to be started and the other RR loop is  $\leq 50^{\circ}\text{F}$ . (GEK-75635 only: verifies Bkr 5A(5B) Thermal Interlock item satisfied.



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

RPV Coolant Temperature	Bottom Head Coolant Temperature	RPV Coolant Temperature in the RR Loop to be Started
<p><u>MODEs 3/4 with RHR SDC in operation:</u> Use RHR Hx inlet temperature from recorder E12-R601 at 1H13-P601</p>		
<p><u>MODEs 2-4 with RR loop in operation and RHR SDC secured:</u> Use Recirc Pmp A/B Suction Temp from B33-R604 at 1H13-P614.</p>	<p>Use Point 4 (Bottom Head Drain Temp) on recorder 1B21-R643 at 1H13-P614, <u>or</u> computer points B22DA002/017 (valid when &gt; 214°F).</p>	<p>Use RR pump suction temperature for the idle RR loop from recorder B33-R604 at 1H13-P614.</p>
<p><u>MODEs 1-3 with Rx coolant &gt; 214°F:</u> Use Steam Dome Temperature computer point B21NA006.</p>		

STANDARD:

- Verifies  $\leq 100^{\circ}\text{F}$  difference between bottom head and RPV coolant
- Verifies  $\leq 50^{\circ}\text{F}$  difference between "A" RR loop and RPV coolant
- Verifies  $\leq 50^{\circ}\text{F}$  difference between "A" RR loop and other loop

CUE:

COMMENTS:

May simulate logging information in CRO log.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

8.1.1.6 Verify annunciators 5003-2C/2J, Recirc Pmp A/B Temp Intlk Actuated are extinguished (verifies GEK-75635A Bkr 5A(5B) pump start loop to loop thermal interlock in effect) (annunciator only valid when > 214°F.)

STANDARD:

Verifies annunciators 5003-2C/2J are extinguished.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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\*8.1.1.7 Place 1B33-F060A(B), Recirc FCV in minimum open position.

STANDARD:

Verifies "A" Flow Control Valve in minimum open position.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

8.1.1.8 Verify CRD supply and seal staging flow has been in operation for at least one hour prior to pump start to ensure pump seals are vented.

STANDARD:

Requests information for CRS

CUE:

It has been 1 hour.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CAUTION

Do not simultaneously start both RR pumps.

\*8.1.1.9 Close the following P680 breakers in order:

- a) Recirc Pump A(B) Mtr Bkr 3A(3B).
- b) Recirc Pump A(B) Mtr Bkr 4A(4B).

STANDARD:

Closes 3A then 4A breakers and observes RED light ON for each breaker.

CUE:

COMMENTS:

The annunciator RECIRC PMP A MTR BRKR TRIP will clear.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

NOTE

If FW flow is < 30% (~ 3.74 mlbm/hr), then:

- a) RR pump will accelerate on the 60 cycle source.
- b) The 1A(1B) breaker will close at the same time the 5A(5B) breaker closes
- c) When pump speed is > 95% (1691 rpm), the 5A(5B) breaker will close
- d) When pump speed drops to 20-26% (356 - 463 rpm), the 2A(2B) breaker will close.

If FW flow is > 30% (~ 3.74 mlbm/hr), then RR pump speed will accelerate directly to 100% (1780 rpm).

8.1.1.10 Notify security that perimeter lighting may go out for ~ 2 to 6 minutes due to the pump start.

STANDARD:

Requests that security be notified.

CUE:

Security has been notified.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

- 8.1.1.11 Monitor reactor power and RPV water level during the starting of a RR pump.
- \*8.1.1.12 Start RR pump A(B) by closing Recirc Pump A(B) Drive Motor Bkr 5A(5B).

STANDARD:

Closes RR pump "A" 5A breaker and observes RED light ON, pump amps and loop flow increasing. Monitors reactor power and RPV water level during pump start.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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- 8.1.1.13 If RR pump startup was directed from section 8.2.6, Idle RR Loop - restart (step 8.2.6.6), return to step 8.2.6.7. Otherwise continue in this section.

STANDARD:

Continues in this section

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

NOTE

A 40 sec incomplete sequence timer starts when the CB-5 breaker is closed. If after 40 sec, pump speed is not 20-26% or CB-2 is not shut, the incomplete sequence relay will trip CB-1 & CB-5.

\*8.1.1.14 **After the RR pump is in service on the LFMG, open the FCV to full open position.**  
OK to inhibit FCV motion per CPS No. 3302.02, REACTOR RECIRCULATION FLOW CONTROL HYDRAULIC SYSTEM while in slow speed RR pump operation to prevent inadvertent FCV runbacks.

OK to restart RR HPUs per CPS No. 3302.02 after a short shutdown.

STANDARD:

Opens "A" recirc loop FCV to full open.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

8.1.1.15 Monitor Table 1, RR Pump Seal Key Parameters. (page 26). If they approach or reach the maximum allowable, corrective action should be taken.

STANDARD:

As a minimum seal staging pressure, Cooling Water (CCW) temperature, and injection water temperature should be checked.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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TERMINATING CUES:

Reactor Recirculation Pump "A" is running in slow speed.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

2020002

A4.07

3.2



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

QUESTION NO.: 1

You are the CRS on shift with the plant operating at near rated conditions for the past several weeks. The reirc pumps are operating at Fast Speed with the Flow Control Valves at 96 and 92% respectively. CROA reports the following recirc parameters:

	"A"	"B"
Seal 1 dP	1020 psig	1015 psig
Seal 2 dP	510 psig	500 psig
Seal 1 cavity	110°F	110°F
Seal 2 cavity	125°F	125°F

Four hours later, the CROA reports the following:

	"A"	"B"
Seal 1 dP	1020 psig	1015 psig
Seal 2 dP	510 psig	500 psig
Seal 1 cavity	115°F	112°F
Seal 2 cavity	125°F	125°F

What action should be taken by the operating crew?

**ANSWER:**

Direct NSED to prepare an evaluation to determine if continued plant operation is warranted.

**REFERENCE(S):**

CPS No. 3302.01 Step 8.3.1.5  
CPS No. 3302.01 Table 1

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

QUESTION NO.: 2

The plant is operating at 100% reactor power when the 'A' Reactor Recirculation (RR) pump trips. After taking the proper actions, the problem is determined to be a faulty overcurrent relay on breaker 5A. The relay is replaced and the operators prepare to start the 'A' RR pump. The following conditions exist:

Loop 'B' flow	14,950 gpm
Bottom Head Drain temperature	444°F
Loop 'A' suction temperature	481°F
Loop 'B' suction temperature	510°F
Steam Dome temperature	540°F
Loop 'A' Flow Control Valve	Min. position (0)
Loop 'A'	Unisolated

What operator action must be performed prior to returning the idle loop to service?

**ANSWER:**

Slowly throttle open the idle 'A' loop Flow Control Valve ( to increase loop 'A' temperature).

**REFERENCE(S):**

CPS No. 3302.01 section 8.2.6.4

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

Importance Rating

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>RO</u>	<u>SRO</u>
202001	A2.10		3.9
202001	K4.17		3.5

JTA:

TASK NUMBER

ANSWER TIME: Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

TASK TITLE: Manually Initiate the High Pressure Core Spray System (HP) - Initiation Logic Available per CPS 3309.01

TASK NUMBER: 015200C617

APPLICABILITY: RO    SRO X

_____	_____
TRAINEE	DATE
_____	_____
EVALUATOR	

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METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 3 minutes

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Prepared/Revised by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
                  Instructor - Operations

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
                  Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Initialize to any suitable IC with HPCS in Standby. Suppression Pool Level is < 19' 11.5".  
RCIC Storage Tank Level is > 2200 gal. Level 8 is clear on HPCS.  
Override **MANUAL INITIATION PUSHBUTTON**

**TASK STANDARDS:**

The High Pressure Core Spray (HPCS) System is manually initiated and is injecting into the reactor vessel.

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3309.01, HIGH PRESSURE CORE SPRAY

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

The CRS directs you to manually initiate and inject with HPCS. Transient annunciator response is in effect.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Manually Initiate High Pressure Core Spray (HP) - Logic Operable

- 8.1.3 a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow to Suppr Pool:  
Opens whenever HPCS flow is < 625 gpm with HPCS discharge pressure > 145 psig, and  
Shuts whenever HPCS flow is  $\geq$  625 gpm.

- \* b) **Arm and Depress HPCS MANUAL INITIATION pushbutton.**

STANDARD:

HPCS Manual Initiation pushbutton is armed and depressed and observes NO response on HPCS. Reports failure to CRS.

CUE:

Acknowledge failure and direct manual initiation of HPCS

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

- 8.1.4 a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow To Suppr Pool:
  - Opens whenever HPCS flow is , 625 gpm with HPCS discharge pressure < 145 psig, and
  - Shuts whenever HPCS flow is  $\geq$  625 gpm.
- b) Start HPCS Pump, 1E22-C001.

STANDARD:

Takes handswitch for 1E22-C001 to START and verifies RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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- c) Verify 1E22-F012, HPCS Pump Min Flow To Suppr Pool opens.

STANDARD:

Verifies RED light ON 1E22-F012

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CANTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

- d) Verify HPCS Pmp Rm Sply Fans, 1VY08CA and B start.

STANDARD:

Verifies RED light ON for 1VY08CA and B

CUE:

COMMENTS:

On vertical section of panel P-800

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

NOTE

To open 1E22-F004 that has closed on Level 8, the RX WTR LEVEL HI SEAL IN RESET push-button must be depressed (when > level 2).

- e) Open 1E22-F004, HPCS To CNMT Outbd Isln Valve

STANDARD:

Takes handswitch for 1E22-F004 to OPEN and verifies RED light ON.  
Verifies RED and GREEN light ON for 1E22-F012

CUE:

COMMENTS:

Min. Flow valve may be in mid position based on pressure and flow.  
Red and green lights for the injection valve may be ON at the same time due to the long valve stroke time.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

- 
- f) Restore and maintain level using 1E22-F004, HPCS To CNMT Outbd Isln Valve.

STANDARD:

Operates handswitch for 1E22-F004 to adjust HPCS flow to restore and maintain RPV level.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

TERMINATING CUES:

The HPCS system is injecting water into the reactor vessel.

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

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

K/A REFERENCE NUMBERS

K/A SYSTEM NUMBER

Importance Rating

209002

K/A NUMBER

RO

SRO

A4.05

3.8

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

209002

A4.05

3.8

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 1

The plant was at 100% power when 4.16 KV Bus 1B locked out due to an overcurrent condition. The loss of the 4.16 bus resulted in a trip of the reactor feed pumps with the resulting level transient. Level decreased below level 2 before recovering. Diesel Generator 1C automatically started during the transient. What caused the auto start of Diesel Generator 1C?

**ANSWER:**

Actuation of High Pressure Core Spray (HPCS) logic

**REFERENCE(S):**

E02-1HP99, Sheet 5

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

The High Pressure Core Spray (HPCS) System is in standby and reactor power is 75%. As CRS, you have just been informed that during the performance of a surveillance, it was found that the Suppression Pool Water Level - High setpoint was 15 inches. What action, with regard to HPCS, must be taken for this condition?

**ANSWER:**

The allowable value is  $\leq 12$  inches. Declare HPCS System inoperable within 1 hour and place the channel in trip within 24 hours OR align the HPCS pump suction to the suppression pool within 24 hours.

**REFERENCE(S):**

ITS 3.3.5.1, Actions D.1, D.2.1 and D.2.2  
ITS Table 3.3.5.1-1, Function 3.e

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
209002	K6.01		3.6
209002	G2.1.14		3.3

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

TASK TITLE: Emergency Startup of Standby Drywell Cooling System

TASK NUMBER: 011222C506

APPLICABILITY: RO    SRO X

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 6 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Initiate to any suitable IC that has a VP in standby.

**TASK STANDARDS:**

Operator actions performed per CPS No. 3320.01, Step 8.2.2

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3320.01, DRYWELL COOLING SYSTEM, Step 8.2.2

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

An Emergency Condition Exists; the CRS directs you to perform an emergency startup of the 'A' Drywell Cooling System per CPS No. 3320.01. Transient annunciator response is in effect.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

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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

JPM TITLE: Emergency Startup of Standby Drywell Cooling System

8.2.2.1 At 1H13-P801, start the standby Drywell Cooling System as follow:

\*8.2.2.1.1 **Start Drywell Cooling Fans 1VP01CB and 1VP01CD (1VP01CA and 1VP01CC).**

STANDARD:

Takes handswitches for Drywell Cooling Fans 1B and 1D to START and observes RED light ON for each fan.

CUE:

COMMENTS:

If an area operator is dispatched to the chiller, cue that an area operator is on his way to the chiller.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

\*8.2.2.1.2 Start Chill Water Pump 1VP03PB (1VP03PA) without first closing discharge valve.

STANDARD:

Takes handswitch for Drywell Chill Water Pump 1B to START and observes RED light ON.  
Observes RED no flow light ON.

CUE:

COMMENTS:

Low flow chilled water annunciator clears.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.1.3 Verify/Place 1SX020B(A), Drywell Chiller 1B(1A) Inlet Valve in AUTO AFTER OPEN.

STANDARD:

Verifies 1SX020B in AUTO AFTER OPEN

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

\*8.2.2.1.4 Start standby Drywell Chiller 1VP04CB (1VP04CA) using the START pushbutton on 1H13-P801.

STANDARD:

Depresses START pushbutton for standby Drywell Chiller 1B and observes RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.1.5 Send an area operator to the Drywell Chiller to monitor performance and load the chiller as required in accordance with steps 8.1.1.5.7 and 8.1.1.5.8.

STANDARD:

Dispatches area operator to monitor and load the chiller as required.

CUE:

As area operator, report that the chiller is loaded and operating normally.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

8.2.2.1.6 If 1VP01CA, 1VP01CC, and 1VP01CB, 1VP01CD are all going to be left running, then open 1VP10Y and 1VP12Y at PNL 1PL43JA and JB.

STANDARD:

Notifies area operator to open the dampers as required.

CUE:

Dampers have been opened.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.2 At 1H13-P800-65, transfer Supplemental Drywell Cooling Coil Units 1VP02SE and 1VP02SF to the operating Drywell Cooling System as follows:

\*8.2.2.2.1 **Close Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves 1VP090A/1VP091A (1VP090B/1VP091B).**

STANDARD:

Takes handswitch for 1VP090A/91A to CLOSE and observes GREEN light ON for both valve:

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

**\*8.2.2.2.2 Open Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves  
1VP090B/1VP091B (1VP090A/1VP091A).**

STANDARD:

Takes handswitch for 1VP090B/91B to OPEN and observes RED light ON for both valves

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.2.3 Verify WO system lineup to supplemental drywell cooling coil units 1VP02SG and 1VP02SH.

STANDARD:

Verifies WO system lineup by observing RED light ON for the following:  
1WO551A/552A CH WTR OUTBD ISOL VLVS  
1WO551B/552B CH WTR INBD ISOL VLVS

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

8.2.2.3 Locally monitor Drywell Chiller 1A for proper operation.

STANDARD:

Notifies area operator to monitor the Drywell Chiller 1A for proper operation

CUE:

Drywell Chiller 1A is operating properly

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

TERMINATING CUES:

Startup of drywell cooling system is complete.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

295024

EA1.14

3.5



CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 1

A small break LOCA has occurred and drywell pressure has increased to 2.5 psig. Describe the response of the Drywell Cooling System (VP) components as a result of the event.

**ANSWER:**

Drywell Chillers, Chill Water Pumps, and Fans trip. The Containment Isol. Vlvs 1VP004A&B, 5A&B, 14A&B, 15A&B, 1W0551A&B and 552A&B isolate. (These components/valves cannot be restarted/reopened until the condition clears)

Supplemental Drywell Cooling Fans (1E, 1F, 1G, and 1H) 'shunt trip'. (These components can be restarted at the local breakers)

**REFERENCE(S):**

CPS No. 3320.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 2

The Plant is operating at 100 % power. A CR has just been delivered to the Control Room which has identified the oil coolers for the Drywell Purge Compressors as being Non-Q . What action must be taken due to this condition?

Follow-up question:

What constitutes the Hydrogen Control Function?

**ANSWER:**

The Drywell Purge Compressors must be declared INOP and verify the status of the Hydrogen Control Function.

At least ONE (1) Division of Hydrogen Igniters are OPERABLE.

**REFERENCE(S):**

ITS 3.6.3.3 Action B.1 and Bases

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
223001	K6.11		3.0
223002	G2.1.12		4.0

JTA:

TASK NUMBER

ANSWER TIME:     Min

ORIGINATED/REVISED BY: \_\_\_\_\_ /

REVIEWED BY: \_\_\_\_\_ /

APPROVED BY: \_\_\_\_\_ /

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

TASK TITLE: Manually Start Emergency Diesel Generator 1A

TASK NUMBER: 011264C526

APPLICABILITY: RO    SRO X

_____	_____
TRAINEE	DATE
_____	
EVALUATOR	

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 20 minutes

Prepared/Revised by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
                                Instructor - Operations

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
                                Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Any suitable IC in which DG 1A is in standby with support systems available.  
Insert Instructor Override 05A1A5S19\_X DG 1A Voltage Regulator switch disabled.

**TASK STANDARDS:**

Diesel Generator 1A running at rated frequency, DG 1A Voltage Regulator identified as malfunctioning and all post-start verifications are completed.

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3506.01, DIESEL GENERATOR AND SUPPORT SYSTEMS, Section 8.1.3 and 8.3.  
CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS  
CPS No. 3506.01C002, DIESEL GENERATOR START LOG

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

The CRS directs you to manually start Diesel Generator 1A per CPS 3506.01 starting at 8.1.3.7. An A/C Area qualified operator is standing by in the DG Room and prestart checks have been completed.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

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**PERFORMANCE INFORMATION**

Critical steps are denoted with an asterisk (\*) to the left of the step number and appear in **BOLDED**, **CAPITAL** 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.

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**PERFORMANCE STEPS**

JPM TITLE      Manual Start Emergency Diesel Generator 1A

8.1.3.7      Notify operator in Diesel Generator 1A(1B)(1C) Room of impending diesel start, and ensure the respective Diesel Generator HVAC Room is clear of personnel.

STANDARD:

Notifies C-Area operator of impending diesel start. Dispatches operator to verify DG 1A HVAC Room is clear of personnel.

CUE:

As C-Area operator, acknowledge that a start of DG 1A is impending and DG 1A HVAC Room is clear.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

**\*8.1.3.8 Start Diesel Generator 1A (1B) (1C) with the DG 1A (1B) (1C) Control switch on 1H13-P877 (P601).**

STANDARD:

Starts DG 1A using Control switch on 1H13-P877 and observes DG 1A light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**8.1.3.9 Verify the Fuel Oil Transfer Pump starts at 1H13-P877 (P601), or locally.**

STANDARD:

Observes RED light ON for 1DO01PA.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

8.1.3.10 Verify DG 1A (1B) (1C) Room Ventilation Fan running on 1H13-P801 (P800), or locally.

STANDARD:

Observes RED light ON for 1VD01CA.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.3.11 Verify DG 1A (1B) (1C) Hx Outlet Vlv 1SX063A(B) (1SX006C) open.

STANDARD:

Observes RED light ON for 1SX063A.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

8.1.3.12 IF SX pump 1SX01PA(B)(C) starts,  
THEN Verify Plant Service Water (WS) to Shutdown Service Water (SX) header  
isolation valve 1SX014A (B) (C) closed.

STANDARD:

Verifies GREEN light ON for 1SX014A if 1SX01PA starts..

CUE:

COMMENTS:

1SX01PA should not start due to this evolution.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.3.13 Verify DG 1A (1B) (1C) frequency 58.8-61.2 Hz.

STANDARD:

Verifies DG 1A frequency 58.8 to 61.2 on Output Frequency meter.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

8.1.3.14 Verify (using one of the following indications) DG1A (1B) (1C) voltage, panel meter 4000 (4000) (4000), computer point 4015 (4015) (4015), GETARS 3911 (3911) (3902) to < 4200 volts.

STANDARD:

Verifies DG 1A voltage < 4200 volts using panel meter 4000, computer point 4015, or GETARS 3911.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

\*8.1.3.15 Verify remote speed control by varying DG 1A (1B) (1C) frequency with DG 1A (1B) (1C) Governor control switch on 1H13-P877 (P601)

STANDARD:

Alternately selects "RAISE" and "LOWER" on the Governor Control Switch. Observes frequency increase and decrease.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

\*8.1.3.16 Verify remote voltage control by varying DG 1A (1B) (1C) voltage with DG 1A (1B) (1C) Generator Voltage Regulator control switch on 1H13-P877 (P601)

STANDARD:

Alternately selects "INCREASE" and "DECREASE" on the voltage regulator control switch. Observes no change in voltage and reports to CRS that the voltage regulator is malfunctioning (not responding to manual control).

CUE:

As CRS, acknowledge the malfunctioning voltage regulator and direct that the diesel remain running until EC&I can investigate the problem.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.3.17 Locally check cylinder test valves and handhold covers for leakage and tighten as necessary.

STANDARD:

Directs C Area operator to check cylinder test valves and handhole covers for leakage.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

**TERMINATING CUES:**

DG 1A is operating at rated frequency and post-start verifications are complete.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

264000

A4.04

3.7

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

**THIS IS A CLOSED BOOK QUESTION**

**QUESTION NO.:** 1

Diesel Generator 1A has been started and paralleled with the RAT. The ERAT is tagged out. A small leak has caused drywell pressure to increase to 2.3 psig. Subsequently, 4160 vac bus 1A1 experiences a momentary (approximately 3 seconds) voltage drop to 3100 volts. Describe the response of diesel generator 1A to this sequence of events

**ANSWER:**

The diesel generator output breaker would OPEN on the LOCA signal but would remain running. The momentary drop in bus voltage WOULD NOT cause the output breaker to reclose on the bus. (There is a time delay of 15 seconds)

**REFERENCE(S):**

CPS No. 3506.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 2

The plant is at 100% power with all equipment normal except that 1A Diesel Generator is tagged out for turbocharger repair. Annunciator "HIGH/LOW TEMP DG ROOM 1B" (5052-4A) alarms. The operator notes that the temperature in the 1B Diesel Generator room is 48°F and decreasing at approximately 1°F. per minute. What action(s) must be taken by the control room operators?

**ANSWER:**

Declare the 1B Diesel Generator inoperable and attempt to restore DG Room Make Up Heater.

**REFERENCE(S):**

CPS ITS Section 3.8.1 Action E  
CPS No. 5052.04, page 1 (4A)  
CPS No. 3403.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

Importance Rating

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>RO</u>	<u>SRO</u>
264000	K4.08		3.7
264000	G2.1.12		4.0

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training





CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER. NRC 5

REVISION. 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Any IC with the reactor shutdown, RPV pressurized, and MSIVs/MSL drains shut. Establish/verify a condenser vacuum pump is lined up and running on the Main Condenser. Reset the Main Turbine and close Turbine Drains.

**TASK STANDARDS:**

Operator actions performed per CPS No. 4411.09

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 4411.09, RPV PRESSURE CONTROL SOURCES

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

A loss of IA resulted in closure of the MSIVs. IA has been recovered and EOP-1 has been entered. The CRS directs you to reopen the MSIVs per CPS No. 4411.09 to assist in RPV pressure control

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

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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.

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PERFORMANCE STEPS

JPM TITLE: Equalize Ar. und and Open MSIVs per CPS No. 4411.09

NOTE

Additional guidance for normal operating modes is in CPS No. 3101.01, MAIN STEAM (MS, IS & ADS).

- 2.2.2 a     **IF**     This step was entered from EOP-2, EOP-3, or EOP-4,  
              **THEN** 1)    OK to defeat isolations per  
                          CPS No. 4410.00C007, DEFEATING RPV  
                          PRESSURE CONTROL SYSTEM INTERLOCKS.  
                  2)    OK to exceed 100°F/hr cooldown.

2.2.2 b     Reset any cleared GROUP 1 isolations.

STANDARD:

Determines that no pressure control system interlocks need to be defeated and that Group 1 isolation is reset.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

2.2.2 c      Regardless if Circ Water (CW) is available or not:  
☞      OK to position Div 1(2,3,4) Condenser Low Vacuum Bypass switches to  
                BYPASS to clear Gr 1 interlocks.

- 1)      Establish vacuum per  
                CPS No. 3112.01, CONDENSER VACUUM (CA), or
- 2)      If vacuum cannot be established,  
                open 1CA007, Condenser Vacuum Breaker Valve.

2.2.2 d      To avoid inadvertent bypass valve operation, maintain Pressure Set Point at least 50 psig  
                > RPV pressure.

STANDARD:

Determines that Condenser vacuum is already established

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

**\*2.2.2 e Open 1B21-F098A(B, C, & D), Main Steam Shutoff Valves.**

STANDARD:

Takes handswitches for 1B21-F098A(B,C,&D) to OPEN and observes RED light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**\*2.2.2 f Open 1B21-F028A(B, C, & D), Main Steam Line Outbd MSIVs.**

- ☞ OK to open following drains to assist in the attempt.
  - 1B21-F067A(B, C, & D), MSL Outbd MSIV Before Seat Drn Vlvs.
  - 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
  - 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.

STANDARD:

Takes handswitches for 1B21-F)28A(B, C, & D), to OPEN and observes RED light ON for each valve.

CUE:

COMMENTS:

May open drain valves to assist in equalizing

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

\*2.2.2 g Equalize around the MSIVs by opening:

- 1) 1B21-F016, MS Drn & MSIV Byp Inbd Isol Valve.
- 2) 1B21-F019, MS Drn & MSIV Byp Outbd Isol Valve.
- 3) 1B21-F020, MSIV Byp Vlv For MS Line Warm Up.

STANDARD:

Takes handswitches for 1B21-F016, 19, and 20 to OPEN and observes RED light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

\*2.2.2 h **Establish a  $\Delta P \leq 200$  psid across the MSIVs.**

- ☞ OK to shut following drains to assist in the attempt.
  - 1B21-F015, MS Low Points Drn Shutoff Valve.
  - 1B21-F021, Inbd MSIV Before Seat Warmup Drn Valve.
  - 1B21-F033, Inbd MSIV Before Seat Warmup Drn Valve.
  - 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
  - 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.
  - 1B21-F070, MS Low Point Warm Up Drn Vlv.
  - 1B21-F071, MS Low Point Normal Drn Vlv.
  - 1TD-SV1(3,5,7), Mn Turb Stop Vlv #1(2,3,4) Drn Vlv (TG needs to be reset to shut).

STANDARD:

Establishes < 200 psid across MSIVs. Shuts drain valves as necessary.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

\*8.2.2.2 i Open 1B21-F022A(B, C, & D), Main Steam Line Inbd MSIVs.

STANDARD:

Takes handswitches for 1B21-F022A(B, C, & D) to OPEN, and observes RED light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

TERMINATING CUES:

MSIVs are reopened.

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



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

239001

A4.01

4.0

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: \_\_\_\_\_ 1 \_\_\_\_\_

The plant operating at 96% power. A C&I tech is performing a surveillance on Group One closure signals and currently has one of the channels tripped to perform the surveillance. The plant experiences a transient that results in the other channel tripping and causing an MSIV closure and a resultant SCRAM. The operators perform the immediate actions for the SCRAM. When the turbine generator tripped off line, one of the bypass valves came open about 50% and stuck open. The MSL pressure dropped quickly (<300 psig), while reactor vessel pressure is being controlled by the relief valves 51C and 51D.

Determine how you would recover (unisolate and open MSIVs) from this situation.

**ANSWER:**

Shut the open bypass valve,  
Open all the MSIVs except the inboards,  
Bypass the Inboard MSIVs and reduce dP to less than 100 psid, open Inboard MSIVs

**REFERENCE(S):**

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

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 2

You are the CRS and the plant has been operating at near rated power for several weeks. Earlier in the shift, the BCRO announced that temperatures in the main steam line tunnels were approximately 140°F and slowly increasing. He now reports that main steam line tunnel temperature is 160°F and still slowly increasing. What action(s) should the control room crew take as a result of this condition?

**ANSWER:**

Initiate a reactor scram  
Initiate Group 1 (MSLs and Drains) and Group 4 (RWCU) isolations.  
(A Group 1 and 4 isolation should have occurred at 156°F)

**REFERENCE(S):**

CPS No. 5067.01D  
CPS No. 5067.02F

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
239001	A2.03		4.2
239001	K4.01		3.8

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

TASK TITLE: Shutdown RCIC - Initiation Signal Clear

TASK NUMBER: 011217C005

APPLICABILITY: RO     SRO X

_____	_____
TRAINEE	DATE
_____	
EVALUATOR	

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 5 minutes

Prepared/Revised by: _____	Date: _____
Reviewed by: _____	Date: _____
Instructor - Operations	
Approved by: _____	Date: _____
Supervisor - Operations Training	

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

100% power with RCIC operating in the tank to tank mode.

**TASK STANDARDS:**

RCIC shutdown per CPS No. 3310.01, Section 8.1.6

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3310.01, REACTOR CORE ISOLATION COOLING (RI), Section 8.1.6

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

RCIC is currently operating in tank to tank mode. The CRS directs you to shutdown RCIC per CPS No. 3310.01.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Shutdown RCIC - Initiation Signal Clear

NOTE

Do not secure or place RCIC in manual override unless directed to per the EOPs, or by at least two independent indications:

- a) misoperation in automatic mode is confirmed,
- b) adequate core cooling is assured.

Minimize time on RCIC Min flow per Limitation 6.2.5.

8.1.6.1 If necessary, depress RCIC SEAL IN RESET push-button.

STANDARD:

Determines RESET is not necessary. WHITE light is extinguished.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

**\*8.1.6.2 Shut (if open) 1E51-F022,  
RCIC Pmp First Test Valve To Stor Tank.**

STANDARD:

Takes handswitch for 1E51-F022 to CLOSE and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**\*8.1.6.3 Shut 1E51-F095, RCIC Turb Stm Supp Bypass Valve.**

STANDARD:

Takes handswitch for 1E51-F095 to SHUT and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

**\*8.1.6.4 Trip RCIC turbine from 1H13-P601 by depressing the RCIC TURBINE REMOTE TRIP push-button.**

STANDARD:

Trips the RCIC turbine by depressing the trip pushbutton and observes GREEN light ON for trip/throttle valve, turbine speed decreasing

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**\*8.1.6.5 Shut (if open) 1E51-F059, RCIC Pmp Second Test Valve To Stor Tank.**

STANDARD:

Takes handswitch for 1E51-F059 to close and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

**\*8.1.6.6 Shut/verify shut 1E51-F045,  
RCIC Turb Stm Supp Shutoff Valve.**

STANDARD:

Takes handswitch for 1E51-F045 to CLOSE and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

NOTE

1E51-F005 is normally closed and opens as required by a level signal from the turbine exhaust drain pot.

- 8.1.6.7 After 1E51-F045 closes,  
verify the following valves open automatically:
- a) 1E51-F004, RCIC Turb Exh Drn To RF First Isol Vlv.
  - b) 1E51-F025, RHR & RCIC Stm Supp First Drn Isol Valve.
  - c) 1E51-F026, RHR & RCIC Stm Supp Second Drn Isol Valve.

STANDARD:

After 1E51-F045 is SHUT, verifies 1E51-F004, F025, and F026 OPEN by observing RED light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

8.1.6.8 Verify following valves shut:

- a) 1E51-F013, RCIC Pump Disch To Rx Outbd Isol Valve.
- b) 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr Pool.

STANDARD:

Verifies 1E51-F013 and 1E51-F019 SHUT by observing GREEN light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.6.9 Reset the RCIC Turbine Trip & Throttle Valve as follows:

- a) Place 1E51-C002, RCIC Turbine Trip Vlv Opr switch to CLOSE to reset the RCIC Turbine Trip & Throttle Valve.
- b) Open 1E51-C002, RCIC Turbine Trip Vlv Opr (Stem).

STANDARD:

Takes handswitch for 1E51-C002 to CLOSE and verifies GREEN light ON. Takes handswitch for 1E51-C002 to OPEN and verifies RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

8.1.6.10 Stop the Gland Seal Air Compressor

STANDARD:

Takes handswitch for Gland Seal Compressor to STOP and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.6.11 Shut 1E51-F046, RCIC Pmp Supp To Turb Lube Oil Clr.

STANDARD:

Takes handswitch for 1E51-F046 to CLOSE and verifies GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.6.12 Verify RCIC Pump Flow Cont, 1E51-R600 set to 600 gpm/AUTO.

STANDARD:

Verifies 1E51-R600 set to 600 gpm and in AUTO.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

TERMINATING CUES:

RCIC is shutdown

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

217000

A4.04

3.6

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 1

The plant was operating at ~54% power with the 'B' TDRFP having been shutdown for troubleshooting. A small break LOCA occurred causing drywell temperature and pressure to increase to the point of a reactor scram. Current plant conditions are as follows:

RPV Pressure	800 psig	Slowly decreasing
RPV Level	- 50 inches	Slowly decreasing
Drywell Pressure	2.5 psig	Slowly increasing
Drywell Temperature	160°F	Slowly increasing

During this transient, RCIC tripped and isolated. Why did RCIC trip and isolate AND what caused the condition that led to the trip and isolation?

**ANSWER:**

RCIC isolated on a high area temperature which caused the trip. The high temperature was caused by the failure of the gland seal air compressor to auto start on an initiation signal because it had been shunt tripped on the high drywell pressure signal.

**REFERENCE(S):**

CPS 3310.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

**THIS IS A CLOSED BOOK QUESTION**

**QUESTION NO.:** 2

The plant is operating at rated conditions. RCIC has been operating and aligned in the CST to CST mode. Current conditions are as follows:

RCIC Steam Tunnel temperature	125°F	Slowly increasing
RCIC Steam Tunnel delta T	30°F	Slowly increasing
RCIC Equip. Area temperature	140°F	Slowly increasing
RCIC Equip. Area delta T	22°F	Slowly increasing
Suppression Pool temperature	87°F	Slowly increasing
Suppression Pool level	feet	Slowly increasing

What is the affect on RCIC due to these conditions?

**ANSWER:**

RCIC suction should have realigned to the Suppression Pool.

RCIC Suppr Pool Suction Valve, opens  
RCIC Storage Tank Suction Valve, closes  
RCIC Pmp First Test Valve to Stor Tank, closes  
RCIC Pmp Second Test Valve to Stor Tank, closes  
Pump runs on minimum flow

**REFERENCE(S):**

CPS No. 3310.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

Importance Rating

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>RO</u>	<u>SRO</u>
217000	A2.01		3.7
217000	A2.12		3.4

JTA:

TASK NUMBER

ANSWER TIME: Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

TASK TITLE: Purge Primary Containment Using VG

TASK NUMBER: 011261C505

APPLICABILITY: RO     SRO X

\_\_\_\_\_  
                    **TRAINEE**

\_\_\_\_\_  
                    **DATE**

\_\_\_\_\_  
                    **EVALUATOR**

**METHOD OF TESTING:**

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

**APPROXIMATE TIME FOR COMPLETION:** 15 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Any suitable IC with VG trains in standby and containment pressure < 2.6 psig. Remove tags and covers for 1VQ006A/B and 1VQ002A/B

**TASK STANDARDS:**

Primary Containment purged using SGTS per CPS No. 3319.01

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3319.01, STANDBY GAS TREATMENT (VG), Section 8.2.5

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps. Annunciator on the 5043 panel may come in, but they are not applicable to the task being performed in this JPM. When annunciators alarm, the annunciator(s) should be announced to the control room and then the reason should also be stated if known or expected.

**INITIAL CONDITIONS AND INITIATING CUE:**

Due to increasing Containment pressure, the CRS directs you to hold Containment pressure less than 1.68 psig using SGTS (VG) Train B.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Purge Primary Containment Using Standby Gas Treatment (VG)

CAUTION

SBGT should not be used if area being ventilated is > 212°F.

NOTE

CNMT purge is not available if CNMT pressure is  $\geq 2.6$  psid. This interlock shall not be defeated to run VG for CNMT purge. (Actual setpoint 2.56 psid, SPDS reads only to tenths)

8.2.5.1 Verify CNMT pressure < 2.6 psid by observing HI CNMT PRESS white indicating light (above 1VG01YA/B switch) OFF.

STANDARD:

Verifies containment pressure < 2.6 psid by observing HI CNMT PRESS WHITE light OFF.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

8.2.5.2 Notify Radiation Protection to verify OPR03S or OPR04S in service and Chemistry Department should be notified immediately after establishing flow.

STANDARD:

Notifies RP to verify OPR03S or OPR04S in service. Notifies Chemistry after establishing flow.

CUE:

As RP, cue that OPR03S is in service. As Chemistry, acknowledge establishing SGTS flow.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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**\*8.2.5.3 Position the selected train's 1VG02YA(B), Fuel Building Isolation Damper control switch to CLOSE and verify:**

- a) 1VG02YA(B) closes. (if open)
- b) 1VG04YA(B), SGTS TRN A(B) Pmp Rms Suction Damper closes.
- c) 1VG05YA(B), SGTS TRN A(B) Fuel Bldg Suct Dmpr closes (if open)
- d) 1VG06YA(B), SGTS TRN A (B) ECCS Rms Suct Dmpr closes.

STANDARD:

Takes handswitch for 1VG02YB to CLOSE and verifies GREEN light ON for 1VG02YB, 1VG04YB, 1VG05YB, and 1VG06YB.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

c

NOTE

In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, & 3, the following valves shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

☛ Obtain Shift/Assistant Shift Supervisors approval to perform the following step.

**\*8.2.5.4 Open 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.**

STANDARD:

Requests permission to complete step 8.2.5.4 and open 1VQ006A and 1VQ006B. After receiving permission, takes handswitch for 1VQ006A/6B to OPEN and observes RED light for each damper.

CUE:

As CRS, direct that 1VQ006A and 1VQ006B. If asked, the WCS has temporarily lifted and removed tags for 1VQ006A/B

COMMENTS:

If asked, the plant is currently in Mode 3, and the WCS has temporarily lifted and removed tags for 1VQ006 A/B

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

NOTE

Starting an Exhaust Fan will automatically close 1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper.

\*8.2.5.5 **Place the selected train in service by starting its respective Exhaust Fan, 0VG02CA(B).**

STANDARD:

Takes handswitch for 0VG02CB Exhaust Fan to START and observes RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

NOTE

The SGTS Trn A(B) DW Purge Isolation Damper, 1VG01YA(B) will not open if Containment pressure is 2.6 psid or more.

For the following steps, the flow rate for SGTS will be substantially less than the nominal flow of 4000 SCFM due to piping restrictions. The flow should be about 400 - 500 SCFM.

- \*8.2.5.6 If the **white** Permissive light is unlit (indicating less than 2.6 psid Containment pressure), then **open** 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by **positioning its control switch to PURGE**.

STANDARD:

Verifies **WHITE** Permissive light is **UNLIT** and takes handswitch for 1VG01YB to **PURGE** and observes **RED** light **ON**.

CUE:

COMMENTS:

May verify by checking Containment pressure.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

c                      NOTE  
In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, &3, the following valves [1VR002A(B) & 1VQ006A(B)] shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

☛ Obtain Shift/Assistant Shift Supervisors approval to perform the following step.

**\*8.2.5.7      When Containment pressure becomes negative, open 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.**

STANDARD:

Requests permission to open 1VR002A and 1VR002B when containment pressure becomes negative. When Containment pressure becomes negative, takes handswitch for 1VR002A and 1VR002B to OPEN and observes RED light ON for each damper.

CUE:

As CRS, direct 1VR002A and 1VR002B be OPENED when containment pressure becomes negative.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

**\*8.2.5.8 When Containment Purge with SGTS is no longer desired, close 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.**

STANDARD:

Takes handswitch for 1VR002A and 1VR002B to CLOSE and observes GREEN light ON for each damper.

CUE:

Containment purge using SGTS is no longer needed.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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**\*8.2.5.9 Close 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers..**

STANDARD:

Takes handswitch for 1VQ006A and 1VQ006B to CLOSE and observes GREEN light ON for each damper.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

\*8.2.5.10 Close 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its handswitch to NORMAL.

STANDARD:

Takes handswitch for 1VG01YB to NORMAL and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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8.2.5.11 Verify Chemistry has performed samples as required per CPS 919940.01, WEEKLY CHEMISTRY SURVEILLANCE LOG and ODCM 3.2.2/ TBL 3.4-1 ITEM B prior to shutdown.

STANDARD:

Contacts Chemistry to verify samples have been performed per CPS 919940.01

CUE:

Samples have been performed per CPS 919940.01

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

NOTE

1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and  
1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, will open when  
the Exhaust Fan is stopped.

\*8.2.5.12 **Shutdown the operating SGTS train by stopping its respective Exhaust Fan, 0VG02CA(B) by returning its control switch to AUTO.**

STANDARD:

Takes handswitch for 0VG02CB to AUTO and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

- 8.2.5.13 Start the SGTS TRN A(B) STANDBY CLG FAN, 0VG03CA(B) per 8.2.2.1 and continue to operate the fan until such time that it has been determined that the decay heat in the charcoal absorber has decreased to the point where the Cooling Fan is no longer needed. (Refer to section 8.2.2.2 for shutting down the fan.)
- 8.2.3.1 Start Cooling Fan, 0VG03CA(B), and verify that the following dampers open:
- a) 0VG03YA(B), SGTS TRN A(B) Cont. Bldg Isol Damper
  - b) 0VG04YA(B), SGTS TRN A(B) Clg Fan 3CA(B) Exh Damper
  - c) 0VG05YA(B), SGTS TRN A(B) Exh Fan (Stack) Damper

STANDARD:

Takes handswitch for 0VG03CB to AUTO and observes RED light ON. Verifies RED light ON for dampers 0VG03YB, 0VG04YB, and 0VG05YB.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

\*8.2.5.14 Position 1VG02YA(B), Fuel Bldg Isolation Damper control switch to AUTO and verify 1VG04YB, Pump Rooms Suction Damper, opens (1VG04YA remains closed).

STANDARD:

Takes handswitch 1VG02YA to AUTO and verifies RED light ON for 1VG04YB. Verifies 1VG04YA GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.5.15 If desired, establish Containment Building ventilation/purge per CPS No. 3408.01, CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ).

STANDARD:

Requests direction to establish Containment Building ventilation.

CUE:

Will not be established at this time.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

**TERMINATING CUES:**

Containment Purge using SGTS has been completed.

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

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

261000

A4.04

3.4



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

**THIS IS A CLOSED BOOK QUESTION**

QUESTION NO.: \_\_\_\_\_ 1 \_\_\_\_\_

Given the following conditions:

- A complete Standby Gas Treatment System initiation signal was received.
- Both Standby Gas Treatment Trains started as designed.
- The "A" Standby Gas Treatment Train was manually secured by the BCRO.
- The "B" Standby Gas Treatment Train is currently operating.

What condition will automatically start the "A" Standby Gas Treatment Train?

**ANSWER:**

Low flow in the operating train (Standby Gas Treatment Train).

**REFERENCE(S):**

CPS No. 3319.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
 JOB PERFORMANCE MEASURE  
 OPERATOR COPY

QUESTION NO.: 2

The plant was operating at 100% power when an accident occurred that caused a radiation release. CCP Exhaust radiation is currently 120 mr. Describe how this condition affects Continuous Containment Purge (CCP).

**ANSWER:**

Continuous Containment Purge fans should have tripped and CCP should have isolated at 100 mr.

VR006A1	CNMT Bldg Outbd Isol Vlv	Shut
1VR006B	CNMT Bldg Inbd Isol Vlv	Shut
1VR007B	CNMT Bldg Exh/Prg Inbd Isol Vlv	Shut
1VR007A	CNMT Bldg Exh/Prg Outbd Isol Vlv	Shut
1VR036	IA Sig Outbd Isol Vlv For Dmpr 1VR04Y	Shut
1VR041	IA Sig Outbd Isol Vlv For Dmpr 1WO521	Shut
1VR035	IA Sig Inbd Isol Vlv For Dmpr 1VR04Y	Shut
1VR040	IA Sig Inbd Isol Vlv For Dmpr 1WO521	Shut

**REFERENCE(S):**

CPS No. 3319.01  
 CPS No. 3404.01  
 CPJ No. 3408.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

Importance Rating

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>RO</u>	<u>SRO</u>
261000	K4.01		3.8
261000	K6.04		3.1

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

TASK TITLE: Startup a Steam Bypass Hydraulic Power Unit

TASK NUMBER: 041248C517

APPLICABILITY: RO    SRO X

\_\_\_\_\_  
                                  **TRAINEE**

\_\_\_\_\_  
                                  **DATE**

\_\_\_\_\_  
                                  **EVALUATOR**

**METHOD OF TESTING:**

Simulated Performance    X    Actual Performance   

Classroom    Simulator    Plant    X

**APPROXIMATE TIME FOR COMPLETION:** 20 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

None

**TASK STANDARDS:**

Operator actions performed per CPS No. 3105.04

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3105.04, STEAM BYPASS AND PRESSURE REGULATOR (SB)

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

A plant is currently in an outage. The CRS directs you to start the 'A' Steam Bypass HPU for testing. The pump is being started on a daily basis. All prerequisites have been met.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Startup a Steam Bypass Hydraulic Power Unit

NOTE

The following startup refers to the HPU associated with the steam bypass valves. The operation of the Steam Bypass and Pressure Regulation (SB) system will be per the plant startup/shutdown integrated 300X.01 series.

Temperature of the fluid must be  $\geq 90^{\circ}\text{F}$  before the pumps are started.

- 8.1.1 a) **IF:** Fluid temperature is  $< 90^{\circ}\text{F}$ ,  
**THEN:** Turn on space heaters 1A and/or 1B to increase fluid temperature.
- b) **IF:** Temperature is  $\geq 90^{\circ}\text{F}$ ,  
**THEN:** Verify/Place space heaters 1A and 1B in Auto.

STANDARD:

Simulates turning space heater 1A and/or 1B ON.

CUE:

Switch is in ON

COMMENTS:

If temperature is  $\geq 90$ , verifies space heaters 1A and 1B in Auto.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

NOTE

Following maintenance on the suction piping, the hydraulic pump or extended shutdown, the hydraulic pumps must be filled with oil before starting in order to prevent damage to the pumps.

c) **IF:** This will be a startup following maintenance on the suction piping, the hydraulic pump or an extended shutdown.

**THEN:** Perform the following steps to fill the pump(s):

- 1) Isolate and remove from service the EHC pump(s) per CPS No. 1014.01, SAFETY TAGGING.
- 2) Clean the area around the case vent connection.
- 3) Fill/verified filled the EHC pump(s) with fluid through the case vent connection located on top of the pump housing.
- 4) Re-install the case vent connection
- 5) Remove the tagout that was installed in step 1.

\*d) **Open 1C85-FV01, Supply HDR Bypass Valve one-half turn**

STANDARD:

Simulates opening 1C85-FV01 one-half turn by turning the valve handwheel in the COUNTERCLOCKWISE direction

CUE:

The valve handwheel is turning.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

\*e) **START Hydraulic Pump 1A (1B) by placing control switch to RUN.**

STANDARD:

Simulates placing Hydraulic Pump 1A control switch to RUN

CUE:

Switch is in RUN

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

f) **Verify pump discharge pressure increases**

STANDARD:

Verifies pump discharge pressure increasing

CUE:

Pressure is increasing

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

g) **IF:** Motor current > 50 amps,

**THEN:** Shut slightly 1C85-FV01, Supply HDR Bypass Valve to reduce motor current amps.

STANDARD:

Checks motor current < 50 amps

CUE:

Motor current is 40 amps

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

\*h) **Pressurize system by slowly opening 1C85-FV23, Supply HDR Isol Valve, and simultaneously slowly shutting 1C85-FV01, Supply HDR Bypass Valve.**

STANDARD:

Simulates simultaneously slowly OPENING 1C85-FV23, by turning the valve handwheel in the COUNTERCLOCKWISE direction, and slowly SHUTTING 1C85-FV01, by turning the valve handwheel in the CLOCKWISE direction.

CUE:

For each valve cue, the valve handwheel is turning, then, the valve handwheel has stopped turning.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

i) **IF:** Pump discharge pressure is not between 1600 - 1650 psig,

**THEN:** Adjust the compensator on the pump as necessary to maintain pressure within the band.

STANDARD:

Verifies pump discharge pressure is between 1600 - 1650 psig

CUE:

Pressure is 1625 psig

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

j) Place Control Switch for Hydraulic Pump not started in AUTO.

STANDARD:

Simulates placing the control switch for Hydraulic Pump 1B in AUTO.

CUE:

Switch is in AUTO

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

NOTE

Step k is not required if the system was started up for testing during a outage or the standby pump is unavailable.

- k) Perform Section 8.2.5 Testing Pumps Auto Start Features.

STANDARD:

No action. System was started for testing.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

NOTE

Fuller's Earth Filter System should be in operation as much as possible.

- l) If desired place the Fuller's Earth Filter in service per section 8.2.3.

STANDARD:

No action.

CUE:

The Fuller's Earth Filter system will not be put in operation.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

**TERMINATING CUES:**

The 'A' Steam Bypass HPU has been started for testing.

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

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

241000

A4.06

3.9

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

**THIS IS A CLOSED BOOK QUESTION**

QUESTION NO.:     1    

The plant is operating at full power. The following parameters/indications and trends are observed:

Main Generator	950 Mwe	Increasing
Reactor Power	100%	Increasing
Reactor Pressure	1014	Increasing
Turbine Control Valves	1-3 Open, 4 Partially Open	Closing
RGLTR ERROR	indicating light illuminated	
MODULE 1(2,3) TRIPPED	indicating light on 1H13-P637 illuminated	

What has occurred to cause this transient?

**ANSWER:**

Pressure Regulator failure LOW

**REFERENCE(S):**

EHC System System Flow Path

**RESPONSE:**

SAT      UNSAT

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 2

The plant is operating with one of the Steam Bypass & Pressure Control pressure regulators in TEST when the remaining pressure regulator fails HIGH. What is the expected plant response assuming no operator action. Plant pressure begins to decrease due to the Bypass Valves opening.

Follow-up question:

What SB&PC control can be used to close the Bypass Valves?

**ANSWER:**

Steam Bypass Valves begin to OPEN causing Reactor Pressure to Decrease  
(TCVs should CLOSE in response but the reactor may scram on low pressure in RUN mode)

Maximum Combined Flow Limiter

**REFERENCE(S):**

EHC System Signal Flow Path

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RG</u>	<u>SRO</u>
241000	A2.01		3.7
241000	A2.03		4.2

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

TASK TITLE: Respond to a Failed Transponder

TASK NUMBER: 011201C529

APPLICABILITY: RO  SRO

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

METHOD OF TESTING:

Simulated Performance  Actual Performance \_\_\_\_\_

Classroom \_\_\_\_\_ Simulator \_\_\_\_\_ Plant

APPROXIMATE TIME FOR COMPLETION: 45 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Not Applicable.

**TASK STANDARDS:**

Rod Drive bypassed, directional control valves disarmed, and RCIS reset per CPS No. 3304.02

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3304.02, ROD CONTROL AND INFORMATION SYSTEM (RCIS)

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

Control rod 20-25 in INOP due to a failed transponder card. RCIS is needed to support current plant conditions. The CRS directs you to bypass control rod 20-25 and reset RCIS.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Respond to a Failed Transponder

NOTE

The required position of the control rod/drive is specified in UT's LCOs 3.1.3 and 3.9.4.

Only one rod can be bypassed at a time at the RGDC.

The bypassed rod's normal drive motion is inhibited when bypassed.

- 8.2.10.1 **IF** A failed transponder card is present, and RCIS is needed to support current plant conditions/surveillances,
- THEN** To prevent inadvertent rod motion when resetting RCIS,
- a) First: Perform section 8.2.10.3 to electrically disarm the directional control valve.
  - b) Second: Perform section 8.2.10.2 to bypass the drive's transponder card & reset RCIS

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

NOTE

Electrically disarming a second INOP control rod will shut down RCIS.

8.2.10.3 To electrically disarm the directional control valves of the subsequent INOP control rods as governed by ITS LCO 3.1.3, or for Transponder Card Failures:

- \*a) **Remove the amphenol connectors, and place CAUTION TAGS on the directional control valves disconnected at the transponder card (CNMT 755') for the INOP control rod drive(s):**
- JIE (insert exhaust)
  - JWE (withdraw exhaust)
  - JWS (withdraw supply)
  - JIS (insert supply)

STANDARD:

Simulates opening cover on transponder card box and removing amphenol connectors JIE, JWE, JWS, and JIS. Simulates placing Caution Tags on the directional control valves.

CUE:

Amphenol connectors are removed and caution tags placed.

COMMENTS:

If desired, use picture and drawing of the inside of the transponder card box.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- b) To restore the drive when the control rod is OPERABLE: (OK to defer while continuing on in procedure):
  - 1) Clear CAUTION TAGS
  - 2) Reconnect the amphenols to the transponder card.

STANDARD:

Continues to 8.2.10.2

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.10.2 To bypass the directional control valves for the first INOP control rod, or for Transponder Card failures:

- \* a) **Locate the drive to be disarmed/bypassed on the Rod Gang Drive Cabinet (RGDC) Fault Map Legend. Transponder card failure location will have an illuminated area for the Transponder that has a fault.**

STANDARD:

Locates rod 20-25 on RGDC Fault Map Legend.

CUE:

After rod identified, cue that area is illuminated. If the wrong rod is identified, cue that the area is NOT illuminated.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

\* b) Using the legend data on the right and bottom of the legend, identify the binary values for the drive to be disarmed/bypassed.

STANDARD:

Identifies the binary values for rod 20-25 IDENTIFIED: \_\_\_\_\_, \_\_\_\_\_

CUE: ACTUAL: 00111 , 01000

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

\* c) On the analyzer card of the RGDC, set the ten BYPASSED ROD IDENTITY TOGGLE SWITCHES (1 = Switch up, 0 = Switch down) using the binary values found on the Fault Map Legend.

STANDARD:

Simulates setting toggle switches either up or down in accordance with the binary value determined from the Fault Map Legend

CUE: X4 X3 X2 X1 X0 Y4 Y3 Y2 Y1 Y0  
— — — — — — — — — —

Toggle switch up (or down) 0 0 1 1 1 0 1 0 0 0  
D D U U U D U D D D

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- d) Have a second licensed operator verify that the correct rod identity is selected.

STANDARD:

Requests that a second licensed operator verify the correct rod identity is selected.

CUE:

I acknowledge that you would have a second licensed operator verify the rod selection but as an evaluator I cannot verify that selection.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

- \* e) Position the rod BYPASS toggle switch "up" to bypass the rod.

STANDARD:

Simulates placing the rod BYPASS toggle switch "up"

CUE:

Switch is UP

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- f) Reset RCIS per 8.2.9.3 and 8.2.9.4
- 8.2.9.3 To reset RCIS
- a) Verify POWER GATE breaker CB2 is ON.  
If found to be OFF, then with SS/ASST.SS permission, place breaker CB2 to ON.  
System configuration may need to be checked per 5.0 Prerequisites.

STANDARD:

Verifies POWER GATE breaker CB2 is ON.

CUE:

If breaker is OFF, then as SM/CRS cue that CB2 can be CLOSED or taken to ON.

COMMENTS:

If Power Gate breaker is OFF and the operator has to switch to ON, step becomes critical.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

- 
- \* b) **Depress the RGDS STATUS INOPERATIVE RESET pushbutton in 1H13-P653 until the INOPERATIVE, SCAN ERROR, and MASTER ERROR lights extinguish.**

STANDARD:

Simulates depressing RGDS Status Inoperative Reset pushbutton.

CUE:

Inoperative, scan error, and master error lights are extinguished.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- c) **IF** RCIS does not properly RESET after the initial attempt in 'b' above,
- THEN** Wait ~ 20 seconds before trying to RESET the system a second blow.

8.2.9.4 After RCIS has been reset, perform an OD-7 Option 2 (or Option 4) and compare to previous rod position information.

STANDARD:

Requests an OD-7 Option 2

CUE:

Rod positions have been compared to previous rod position information.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

- g) Depress DRIVE BYPASSED pushbutton to display on the OCM that the correct rod was bypassed..

STANDARD:

Simulates depressing Drive Bypassed pushbutton

CUE:

OCM display indicates the correct rod.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

CAUTION

In GANG mode, selecting/moving a rod in the same gang will cause the bypassed rod to move also. If GANG mode is used for any reason extreme caution should be used to avoid moving the bypassed rod.

- h) Place CAUTION TAGS to maintain the DRIVE MODE select push-button in the "INVALID DRIVE" position, and provide information about the possible effect of using gang mode..

STANDARD:

Simulates placing Caution Tags on Drive Mode select pushbutton.

CUE:

Caution Tags are hung

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- i) To restore the drive when the control rod is OPERABLE (OK to defer while continuing on in procedure.
  - 1) Clear CAUTION TAGS.
  - 2) At the RGDC, position the rod BYPASS toggle switch, "down" to unbypass the rod.
  - 3) On the analyzer card of the RGDG, set the ten BYPASSED ROD IDENTITY toggle switches to the "down (0) position.
  - 4) Depress DRIVE BYPASSED push-button to display on the OCM that the rod in no longer bypassed.

STANDARD:

No action required

CUE:

Drive will not be restored.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

TERMINATING CUES:

Control rod 20-25 is bypassed and RCIS is reset.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

201005

A4.01

3.7

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 1

A reactor startup is in progress. During the performance of CPS No. 9014.02, ROD PATTERN CONTROL SYSTEM ROD SEQUENCE CHECK, an out of sequence control rod was selected and moved one notch. What is the effect on the reactor startup?

**ANSWER:**

The reactor startup must stop immediately due to the Rod Pattern Controller not performing its intended function. Rod movement is ONLY by scram.

**REFERENCE(S):**

CPS No. 9014.02  
CPS ITS 3.3.2.1 Action B.1

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

**THIS IS A CLOSED BOOK QUESTION**

**QUESTION NO.:**          2    

What affect does bypassing a control rod in the Rod Gang Drive System have on the ability to move the bypassed control rod, individually and in gang mode?

**ANSWER:**

The bypassed control rod if selected will not move. (The RCIS System does not know the control rod is even there). If gang mode is selected and another control rod in the gang is selected the bypassed control rod will move with the rest of the gang.

**REFERENCE(S):**

CPS No. 3304.02

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

Importance Rating

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>RO</u>	<u>SRO</u>
201005	K3.02		3.5
201005	K1.06		3.3

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

TASK TITLE: Respond To Abnormal Level in CCW Expansion Tank

TASK NUMBER: 044208C505

APPLICABILITY: RO    SRO X

_____	_____
TRAINEE	DATE
_____	
EVALUATOR	
=====	=====

**METHOD OF TESTING:**

Simulated Performance    X    Actual Performance   

Classroom    Simulator    Plant    X

APPROXIMATE TIME FOR COMPLETION: 15 minutes

Prepared/Revised by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
                  Instructor - Operations

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
                  Supervisor - Operations Training



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

None

**TASK STANDARDS:**

Operator actions performed per CPS No. 3203.01

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3203.01, COMPONENT COOLING WATER (CC)

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

There is a high level in the CCW Expansion Tank. The source of the in-leakage has been isolated. The CRS directs you to locally return CCW Expansion Tank level to normal.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

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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

JPM TITLE: Respond To Abnormal Level in CCW Expansion Tank

\*8.2.2.2.1 **Verify 1CC90, CCW Expansion Tank Makeup Valve, is isolated and 1CC092, CCW Expansion Tank Makeup Valve Bypass, is shut.**

STANDARD:

Verifies 1CC90 is isolated by simulating turning valve handwheels for 1CC089 and 1CC091 in a CLOCKWISE direction. Verifies 1CC092 shut by simulating turning valve handwheel in a CLOCKWISE direction.

CUE:

For each valve operated, cue that the valve handwheel is turning, then cue the valve handwheel stops turning.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

8.2.2.2.2 Notify Radiation Protection to check valve lineups on 1RIX-PR037, 1RIX-PR004, and 1RIX-PR005, if source of inleakage unknown.

STANDARD:

No action. Initial Conditions had the source isolated.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

NOTE

If necessary, place alternate system load on service, whenever possible.

8.2.2.2.3 If source of inleakage is unknown, isolate CCW to the system loads one at a time to determine the source of inleakage. See Appendix A, CCW SYSTEM LOADS.

STANDARD:

No action. Initial Conditions had the source isolated.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

NOTE

When the source of inleakage is isolated, the CCW Expansion Tank level should stabilize.

\*8.2.2.2.4 Lower CCW Expansion Tank level as follows:

- a) **Open 1TE083, CCW Exp Tk Drain**
- b) **Throttle open 1CC253, CCW Expansion Tank Auto Drain Valve to lower level to 105" to 117"**

STANDARD:

Simulates OPENING 1TE083 by turning handwheel in the COUNTERCLOCKWISE direction.  
Simulates throttling OPEN 1CC253 by turning handwheel in the COUNTERCLOCKWISE direction.

CUE:

For each valve operated, cue that the valve handwheel is turning. For 1TE083, cue the valve handwheel stops turning.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

\*8.2.2.2.5 When desired level is reached

a) Close ICC253, CCW Expansion Tank Auto Drain Valve

b) Close ITE083, CCW Exp Tk Drain

STANDARD:

Contacts MCR to monitor expansion tank level. After receiving cue that level is 115", simulates closing ICC253 and ITE083 by turning valve handwheels in the CLOCKWISE direction.

CUE:

As operator in the MCR, cue that level is 115".

For each valve operated, cue that the valve handwheel is turning then the valve handwheel has stopped.

COMMENTS:

May monitor level on expansion tank sightglass

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.2.6 Check pump suction pressure, adjust per 8.1.1.1.b, if necessary.

STANDARD:

Checks pump suction pressure by observing idle pump discharge pressure. Determines that no adjustment is necessary.

CUE:

COMMENTS:

idle pump discharge pressure should be approximately 14 psig.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

8.2.2.2.7 If possible, leave the component that is the source of inleakage off service and isolated, until it is repaired.

STANDARD:

No action.

CUE:

The component will be left isolated until repaired.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

TERMINATING CUES:

CCW Expansion Tank level has been returned to normal.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

400000

A4.01

3.0

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 1

The plant is in the power ascension program and currently at 75% power. The following parameters are noted:

CCW Outlet Pressure	96 psig	Steady
CCW Outlet Temperature	110°F	Increasing
Condenser Vacuum	27 inches	Decreasing

What option will be available for LONG TERM RPV pressure control?

**ANSWER:**

Only SRVs on compressed gas will be available

**REFERENCE(S):**

CPS No. 4004.01  
CPS No. 3203.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 2

The plant was at 100% power when 4.16 KV Bus 1B locked out due to an overcurrent condition. The loss of the 4.16 Bus 1B results in a trip of the reactor feed pumps with the resulting level transient. Level decreases below level 2 before recovering. Based on this transients effect on Component Cooling Water (CC), what system/component loss will occur if NO operator action is taken?

**ANSWER:**

Trip of the running Service Air Ccpressor.

**REFERENCE(S):**

CPS No. 5041.01-1A

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
400000	K3.01		3.3
400000	A2.01		3.4

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

INITIAL SUBMITTAL OF OUTLINE AND WALKTHROUGH JPMS FOR CLINTON  
RE-EXAMINATION THE WEEK OF 08/31/98

A070

Facility: <u>Clinton</u> Date of Examination: <u>September 1, 1998</u>		
Exam Level (Circle): RO / <input checked="" type="checkbox"/> SRO(I) / SRO(U) Operating Test No.: <u>98-02</u>		
System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G // Importance // Description
1. 202001/Start RR Pump A in Slow D, S, L	1 - Reactivity Cont.	a. A2.10 - 3.9 - Seal Failure
		b. K4.17 - 3.5 - Fast Speed Pump Start
2. 209002/Manually Initiate HPCS D, S	2 - Inventory Cont.	a. K6.01 - 3.6 - Loss of Electrical Power
		b. G2.1.14 - 3.3 - Sys. Status Req. Notification
3. 223001/Emerg. S/U Standby DWC D, S	5 - Cont. Integrity	a. K6.11 - 3.0 - Loss of Electrical Power
		b. G2.1.12 - 4.0 - Not Qualified Equipment
4. 264000/Manually Start DG 1A D, A, S	6 - Electrical	a. K4.08 - 3.7 - Automatic Startup
		b. G2.1.12 - 4.0 - T.S. Requirements
5. 239001/Equalize Around and Open MSIVs D, S, L	3 - Pressure Cont.	a. A2.03 - 4.2 - MSIV Closure
		b. K4.01 - 3.8 - Automatic Isol. of Steam Lines
6. 217000/Shutdown RI - Init. Sig. Clear N, S	4 - Heat Removal	a. A2.01 - 3.7 - Initiation Signal
		b. A2.17 - 3.4 - High Suppression Pool Lvl.
7. 261000/Purge PC Using VG N, S	9 - Rad. Release	a. K4.01 - 3.8 - Auto System Init.
		b. K6.04 - 3.1 High Rad. Response
8. 241000/Startup Steam Byp. HPU N, P, R	3 - Pressure Cont.	a. A2.01 - 3.7 - Pressure Reg. Failure
		b. A2.03 - 4.2 - Failed Open BPV
9. 201005/Respond to a Failed Transponder N, P	7 - Instrumentation	a. K3.02 - 3.5 - Effect on Reactor S/U
		b. K1.06 - 3.3 - Bypassed Rod in Gang
10. 400000/Respond to Abn. Level in CCW Exp. Tk. N, P, R	8 - Plant Service	a. K3.01 - 3.3 - Loads Cooled by CCW
		b. A2.01 - 3.4 - Loss of CCW Pump

\* - Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow Power, (P)lant, (R)CA

ES-301 Individual Walk-through Test Outline Form ES-301-2

Facility: <u>Clinton Power Station</u>		Date of Examination: <u>January 19, 1998</u>
Exam Level (Circle): <u>RO / SRO(I)</u>		Operating Test No.: <u>98-01</u>
System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G / Importance / Description
1. 295031 RCIC/Defeat Isolation  D, P	4. Emergency Plant Evolutions	a. 217000/ K6.01/ 3.4 //Electrical Power
		b. 217000/A1.05/3.6/RCIC Turbine Speed
2. 241000 EHC/Respond to low pressure  D, P, R	3. Pressure Control	a. K1.10/3.0/Front Standard Trip System
		b. K1.20/2.7/Turbine Speed
3. 286000 Manual Start of the Diesel Fire Pump  D, P, R	8. Plant Service Systems	a. K4.03/3.3/System Design
		b. K4.01/3.4/System Interrelationship
4. 259002 FW/Operate SULCV  D, S, L	2. Reactor Water Inventory Control	a. K4.12/A5.03/3.8/Operate components in manual
		b. K1.02/A2.01/3.5/Cause and Effects
5. 295016 RSP/IPC  D, S, A	5. Suppression Pool Cooling Mode	a. AA2.06/3.3/Cooldown Rate
		b. AK2.02/4.0/Local control stations
6. 202001 Normal S/D of RR pumps  D, S	1. Reactivity Control	a. K4.02/3.1/Adequate recirculation pump NPSH
		b. A1.08/3.7/Recirc FCV Position
7. 217000 Manual start of LPCS  M, S, A	4. Normal Plant Evolutions	a. K4.03/3.3/Valve Operation
		b. K1.10/3.7/System Interlocks
8. 288000 Shift VR Supply and Exhaust Fans (Auto Operation)  M, S, A	9. Radioactivity Release	a. K4.01/3.7/Vent Interlocks
		b. A3.01/3.8/System Operations
9. 300000 IA/ Pressurize DW/Containment air headers  D, S	8. Plant Service Systems	a. K3.02/3.3/Loss of Air
		b. K4.02/3.0/Interlocks
10. 264000 Manually Shutdown a Diesel Generator  N, S	6. Emergency Generators	a. A2.09/3.9/Loss of AC power
		b. K4.02/4.1/Generator Trips

\* - Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow Power, (P)lant, (R)CA

Facility: <u>Clinton Power Station</u>		Date of Examination: <u>January 19, 1998</u>
Exam Level: <u>SRO(U)</u>		Operating Test No.: <u>98-01</u>
System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G / Importance / Description
1.		
2.241000 EHC/Respond to low pressure D, P, R	3. Pressure Control	a. K1.10/3.0/Front Standard Trip System b. K1.20/2.7/Turbine Speed
3. 286000 Lineup FP (Fire Protection) Injection Flowpath to the RPV D, P, R	8. Plant Service Systems	a. K4.03/3.3/System Design b. K4.01/3.4/System Interrelationship
4. 259002 FW/Operate SULCV D, S, L	2. Reactor Water Inventory Control	a. K4.12/A5.03/3.8/Operate components in manual b. K1.02/A2.01/3.5/Cause and Effects
5.295016 RSP/SPC D, S, A	5. Suppression Pool Cooling Mode	a. AA2.06/3.3/Cooldown Rate b. AK2.02/4.0/Local control stations
6. 202001 Normal S/D of RR pumps D, S	1. Reactivity Control	a. K4.02/3.1/Adequate recirculation pump NPSH b. A1.08/3.7/Recirc FCV Position

\* - Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow Power, (P)lant, (R)CA



8/10/98  
JS

Illinois Power Company  
Clinton Power Station  
P O Box 678  
Clinton, IL 61727  
Tel 217 935-8881

Joseph V. Sipek  
Director - Licensing

U-603057  
1A.120

July 31, 1998

Docket No. 50-461

Mr. Melvyn N. Leach, Chief  
Operator Licensing Branch  
U.S. Nuclear Regulatory Commission  
Region III  
801 Warrenville Road  
Lisle, Illinois 60632-4351

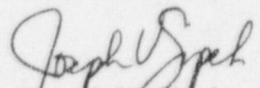
Subject: Initial Licensed Operator Examination Materials

Dear Mr. Leach:

The Clinton Power Station (CPS) Initial Licensed Operator examination materials for Mr. Jeff Naden are in the attached envelope. The examination materials are submitted in accordance with the guidance in Interim Revision 8, NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and your letter of May 12, 1998. The examination materials shall be withheld from public disclosure until after the examinations are complete.

Please direct questions concerning the CPS Initial Licensed Operator Examination to Mr. Dale Hill at (217) 935-8881, extension 4135.

Sincerely yours,

  
Joseph V. Sipek  
Director-Licensing

BGS/krk

cc: (without attachments)

Clinton Licensing Project Manager, Region III, USNRC  
NRC Resident Office, V-690  
Regional Administrator, Region III, USNRC  
Illinois Department of Nuclear Safety



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

TASK TITLE: Start Reactor Recirculation Pump "A" in Slow Speed

TASK NUMBER: 011202C004

APPLICABILITY: RO X SRO X

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 15 minutes

Prepared/Revised by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Instructor - Operations

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Initialize to an IC at approximately 30% power. Shutdown the "A" RR pump by opening the CB1, CB2, CB3 and CB4 breakers and closing the FCV to minimum. Lockout the "A" FCV and restart the "A" RR HPU from the instructor console. Verify the Cavitation Interlock lights on P680 are both ON or both OFF.

**TASK STANDARDS:**

Reactor Recirculation Pump "A" is running in slow speed.

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3302.01, REACTOR RECIRCULATION, section 8.1.1

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

The plant is operating at approximately 30% power in single loop. The "B" loop is operating. The "A" RR pump is stopped and the "A" RR loop is unisolated. Startup the "A" Recirc Pump in slow speed per section 8.1.1 of CPS 3302.01.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

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**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**

JPM TITLE: Start Reactor Recirculation Pump "A" in Slow Speed

- 8.1.1.1 (Local) Unless checked during drywell close-out, check RR pump motor oil levels if the drywell is accessible. Reference MS-08.00 for proper RR Pump A(B), 1B33 C001A(B) oil level determination criteria.
- 8.1.1.2 (Local) Verify open 1C11-FO26A(B), CRD Supp Isol To RR Pump A(B) and verify CRD supply to the RR pump seals is 3-5 gpm on flowmeter 1C11-D020A(B). If required, adjust 1C11-D012A(B), Flow Control Valve to obtain 3-5 gpm. Flow regulator, 1C11-D012A(B) is used to adjust flow as follows (per K2801-0009): [CNMT755' AZM 189°].
- a) Loosen locknut and rotate stem until desired flow is attained. (Clockwise for decreasing flow, counter-CW for increasing flow)
  - b) Lock stem in desired position by holding stem steady while re-tightening locknut.

STANDARD:

Directs Area Operator to verify CRD flow to RR pump "A" seals at 3-5 gpm.

CUE:

Flow is 4 gallons per minute.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

NOTE

When starting pumps at low power/low feed flow conditions, the white light above the Cavitation Interlocks switch will stay on and the pumps will start in slow speed.

8.1.1.3 a) Zero the A/B loop SERVO ERROR

STANDARD:

Adjusts so Servo Error meter indicates 0% on P680

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

8.1.1.3 b) Depress following reset buttons to clear interlocks/alarms:

- 1) FCV A/B Motion Inhibit Reset  
Verify the lead HPU becomes operational, and FCV motion is longer inhibited.
- 2) Pump A/B Vibration Reset.
- 3) Cav Intlk A/B Reset / Rx Run Back Reset.
- 4) Low Level Intlk A/B Reset

STANDARD:

Depresses "A" Motion Inhibit reset pushbutton and observes WHITE light OFF.

Depresses "A" Vibration reset pushbutton.

Depresses "A" Cavitation Interlock pushbutton.

Depresses "A" Vessel Low Level pushbutton and observes WHITE light OFF

CUE:

COMMENTS:

Cavitation interlock will not clear when feedwater flow is less than 30%.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

- 8.1.1.4 Verify RWCU system in operation with flow established through bottom head drain line to obtain a reliable indication of bottom head drain coolant temperature.

STANDARD:

Verifies RWCU system in operation with flow established through bottom head drain line.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

\*8.1.1.5 **Within 15 min. prior to starting the A(B) RR pump,**  
**Verify following ITS SR 3.4.11.3/4 temperature limits and GEK-75635A Thermal Shock limits** (use table below for data point locations) are met, and log data in the MCR Journal.

- a) Difference between bottom head coolant temperature and the RPV coolant temperature is  $\leq 100^{\circ}\text{F}$ . (ITS/GEK)
- b) Difference between the RPV coolant temperature in the RR loop to be started and the RPV coolant temperature is  $\leq 50^{\circ}\text{F}$ . (ITS/GEK)
- c) Difference between idle RR loop to be started and the other RR loop is  $\leq 50^{\circ}\text{F}$ . (GEK-75635 only: verifies Bkr 5A(5B) Thermal Interlock item satisfied.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

RPV Coolant Temperature	Bottom Head Coolant Temperature	RPV Coolant Temperature in the RR Loop to be Started
<p><u>MODEs 3/4 with RHR SDC in operation:</u> Use RHR Hx inlet temperature from recorder E12-R601 at 1H13-P601</p>		
<p><u>MODEs 2-4 with RR loop in operation and RHR SDC secured:</u> Use Recirc Pmp A/B Suction Temp from B33-R604 at 1H13-P614.</p>	<p>Use Point 4 (Bottom Head Drain Temp) on recorder 1B21-R643 at 1H13-P614, <u>or</u> computer points B22DA002/017 (valid when &gt; 214°F).</p>	<p>Use RR pump suction temperature for the idle RR loop from recorder B33-R604 at 1H13-P614.</p>
<p><u>MODEs 1-3 with Rx coolant &gt; 214°F:</u> Use Steam Dome Temperature computer point B21NA006.</p>		

STANDARD:

- Verifies  $\leq 100^{\circ}\text{F}$  difference between bottom head and RPV coolant
- Verifies  $\leq 50^{\circ}\text{F}$  difference between "A" RR loop and RPV coolant
- Verifies  $\leq 50^{\circ}\text{F}$  difference between "A" RR loop and other loop

CUE:

COMMENTS:

May simulate logging information in CRO log.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

8.1.1.6 Verify annunciators 5003-2C/2J, Recirc Pmp A/B Temp Intlk Actuated are extinguished (verifies GEK-75635A Bkr 5A(5B) pump start loop to loop thermal interlock in effect) (annunciator only valid when > 214°F.)

STANDARD:

Verifies annunciators 5003-2C/2J are extinguished.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**\*8.1.1.7 Place 1B33-F060A(B), Recirc FCV in minimum open position.**

STANDARD:

Verifies "A" Flow Control Valve in minimum open position.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

8.1.1.8 Verify CRD supply and seal staging flow has been in operation for at least one hour prior to pump start to ensure pump seals are vented.

STANDARD:

Requests information for CRS

CUE:

It has been 1 hour.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CAUTION

Do not simultaneously start both PR pumps.

\*8.1.1.9 **Close the following P680 breakers in order:**

- a) Recirc Pump A(B) Mtr Bkr 3A(3B).
- b) Recirc Pump A(B) Mtr Bkr 4A(4B).

STANDARD:

Closes 3A then 4A breakers and observes RED light ON for each breaker.

CUE:

COMMENTS:

The annunciator RECIRC PMP A MTR BRKR TRIP will clear.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

NOTE

If FW flow is < 30% (~ 3.74 mlbm/hr, then:

- a) RR pump will accelerate on the 60 cycle source.
- b) The 1A(1B) breaker will close at the same time the 5A(5B) breaker closes
- c) When pump speed is > 95% (1691 rpm), the 5A(5B) breaker will close
- d) When pump speed drops to 20-26% (356 - 463 rpm), the 2A(2B) breaker will close.

If FW flow is > 30% (~ 3.74 mlbm/hr), then RR pump speed will accelerate directly to 100% (1780 rpm).

8.1.1.10 Notify security that perimeter lighting may go out for ~ 2 to 6 minutes due to the pump start

STANDARD:

Requests that security be notified.

CUE:

It is daylight and the pump will only be started in slow speed.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

- 8.1.1.11 Monitor reactor power and RPV water level during the starting of a RR pump.
- \*8.1.1.12 **Start RR pump A(B) by closing Recirc Pump A(B) Drive Motor Bkr 5A(5B).**

STANDARD:

Closes RR pump "A" 5A breaker and observes RED light ON, pump amps and loop flow increasing. Monitors reactor power and RPV water level during pump start.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

- 8.1.1.13 If RR pump startup was directed from section 8.2.6, Idle RR Loop - restart (step 8.2.6.6), return to step 8.2.6.7. Otherwise continue in this section.

STANDARD:

Continues in this section

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

NOTE

A 40 sec incomplete sequence timer starts when the CB-5 breaker is closed. If after 40 sec, pump speed is not 20-26% or CB-2 is not shut, the incomplete sequence relay will trip CB-1 & CB-5.

\*8.1.1.14 **After the RR pump is in service on the LFMG, open the FCV to full open position.**  
OK to inhibit FCV motion per CPS No. 3302.02, REACTOR RECIRCULATION FLOW CONTROL HYDRAULIC SYSTEM while in slow speed RR pump operation to prevent inadvertent FCV runbacks.

OK to restart RR HPUs per CPS No. 3302.02 after a short shutdown.

STANDARD:

Opens "A" recirc loop FCV to full open.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

8.1.1.15 Monitor Table 1, RR Pump Seal Key Parameters. (page 26). If they approach or reach the maximum allowable, corrective action should be taken.

STANDARD:

As a minimum seal staging pressure, Cooling Water (CCW) temperature, and injection water temperature should be checked.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

**TERMINATING CUES:**

Reactor Recirculation Pump "A" is running in slow speed.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASUREMENT WORKSHEET

JPM NUMBER: NRC 1

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 1

You are the CRS on shift with the plant operating at near rated conditions for the past several weeks. The reirc pumps are operating at Fast Speed with the Flow Control Valves at 96 and 92% respectively. The recirc pump seal pressures have been reading in the normal range,

	"A"	"B"
Seal 1 dP	1020 psig	1015 psig
Seal 2 dP	510 psig	500 psig
Seal 1 cavity	115°F	115°F
Seal 2 cavity	125°F	125°F

The A CRO informs you that in the last hour that the "A" RR pump seal 1 cavity temperature has increased 5°F and that the "B" seal 1 cavity shows no temperature change.

What actions should or should not be taken?

**ANSWER:**

**IF** RR Pump Seal Key Parameters exceed any 'Abnormal Value' listed in Table 1,  
**THEN** Direct NSED to prepare an evaluation to determine if continued plant operation is warranted.

**REFERENCE(S):**

CPS No. 3302.01 Step 8.3.1.5  
CPS No. 3302.01 Table 1

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

QUESTION NO.: 2

The plant has been in a long outage due to recirc pump problems. The plant is currently operating at approximately 40% power with the Recirc Pumps in Fast Speed. The A CRO reports that all indications look good and are all in specifications. Two hours later, the A CRO reports that annunciator 5067-2K is alarming (Loose Part Monitoring Sys Trouble). When the alarm panel is checked, the channel 3 light is blinking with 3 other lights steady lit. (Channel 3 is A Recirc Pump Suction). The B CRO states that he has just checked the lower thrust bearing temperature on the A RRP and it has increased 20°F and that the upper thrust bearing temperature has decreased 15°F. Also the Seal cavity 1 has just had a pressure increase.

What is a possible cause and what actions will you take.

**ANSWER:**

The possible cause is a failure of the upper wear ring bolts on the A RR pump. (This results in the upper wear ring coming loose from the stuffing box and falling into the upper impeller region. The upper area then equalizes with the pump discharge pressure and overcomes the normal up thrust of the pump, causing the lower thrust shoes of the motor bearing to carry the thrust load.)

If a drop is suspected, contact the NSED - ECCS & Reactivity System Team immediately. If reverse thrust is suspected, the affected RR pump should be shutdown as soon as practical to minimize secondary component damage.

**REFERENCE(S):**

CPS No. 3302.01, Reactor Recirculation (RR)  
CPS No. 3301.02, Loose Parts Monitoring System (Lm)  
CPS No. 5067-2K, Loose part Monitoring Sys Trouble

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
202001	A2.10		3.9
202001	K4.17		3.5

JTA:

TASK NUMBER

ANSWER TIME:     Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

The plant is operating at approximately 30% power in single loop. The "B" loop is operating. The "A" RR pump is stopped and the "A" RR loop is unisolated. Startup the "A" Recirc Pump in slow speed per section 8.1.1 of CPS 3302.01.

- 8.0 PROCEDURE
- 8.1 Normal Operations
- 8.1.1 RR Pump - Startup

6.1.1.1 (Local) Unless checked during drywell close-out, check RR pump motor oil levels if the drywell is accessible. Reference MS-08.00 for proper RR Pump A(B), 1B33-C001A(B) oil level determination criteria.

4-20-97  
 Doc. 57-0542

c 8.1.1.2 (Local) <sup>Verify</sup> ~~SLOWLY~~ open 1C11-F026A(B), CRD Supp Isol To RR Pump A(B) and verify CRD supply to the RR pump seals is 3 - 5 gpm on flowmeter 1C11-D020A(B). If required, adjust 1C11-D012A(B), Flow Control Valve to obtain 3 - 5 gpm. Flow regulator, 1C11-D012A(B) is used to adjust flow as follows (per K2801-0009): [CNMT 755' AZM 189°].

- a) Loosen locknut and rotate stem until desired flow is attained. (Clockwise for decreasing flow, counter-CW for increasing flow)
- b) Lock stem in desired position by holding stem steady while re-tightening locknut.

NOTE

When starting pumps at low power/low feed flow conditions, the white light above the Cavitation Interlocks switch will stay on and the pumps will start in slow speed.

- © c 8.1.1.3 a) Zero the A/B loop SERVO ERROR.
- b) Depress following reset buttons to clear interlocks/alarms:
  - 1) FCV A/B Motion Inhibit Reset.  
Verify the lead HPU becomes operational, and FCV motion is no longer inhibited.
  - 2) Pump A/B Vibration Reset.
  - 3) Cav Intlk A/B Reset / Rx Run Back Reset.
  - 4) Low Level Intlk A/B Reset.

8.1.1 RR Pump - Startup (cont'd)

- ① 8.1.1.4 Verify RWCU system in operation with flow established through bottom head drain line to obtain a reliable indication of bottom head drain coolant temperature.
- c 8.1.1.5 Within 15 min. prior to starting the A(B) RR pump,
  - ① Verify following ITS SR 3.4.11.3/4 temperature limits and GEK-75635A Thermal Shock limits (use table below for data point locations) are met, and log the data in the MCR Journal.
    - a) Difference between bottom head coolant temperature and the RPV coolant temperature is  $\leq 100^{\circ}\text{F}$ . (ITS/GEK)
    - b) Difference between the RPV coolant temperature in the RR loop to be started and the RPV coolant temperature is  $\leq 50^{\circ}\text{F}$ . (ITS/GEK)
    - c) Difference between idle RR loop to be started and the other RR loop is  $\leq 50^{\circ}\text{F}$ . (GEK-75635A only: verifies Bkr 5A(5B) Thermal Interlock item satisfied.)

RPV Coolant Temperature	Bottom Head Coolant Temperature	RPV Coolant Temperature in the RR Loop to be Started
<p><u>MODEs 3/4 with RHR SDC in operation:</u> Use RHR Hx inlet temperature from recorder E12-R601 at 1H13-P601.</p>	<p>Use Point 4 (Bottom Head Drain Temp) on recorder 1B21-R643 at 1H13-P614, or computer points B33DA002/017 (valid when <math>&gt; 214^{\circ}\text{F}</math>).</p>	<p>Use RR pump suction temperature for the idle RR loop from recorder B33-R604 at 1H13-P614.</p>
<p><u>MODEs 2-4 with RR loop in operation and RHR SDC secured:</u> Use Recirc Pmp A/B Suction Temp from B33-R604 at 1H13-P614.</p>		
<p><u>MODEs 1-3 with Rx coolant <math>&gt; 214^{\circ}\text{F}</math>:</u> Use Steam Dome Temperature computer point B21NA006.</p>		

10-10-80

- 8.1.1 RR Pump - Startup (cont'd)
- 8.1.1.6 Verify annunciators 5003-2C/2J, Recirc Pmp A/B Temp Intlk Actuated are extinguished (verifies GEK-75635A Bkr 5A(5B) pump start loop to loop thermal interlock in effect) (annunciator only valid when > 214°F).
- 8.1.1.7 Place 1B33-F060A(B), Recirc FCV in minimum open position.
- 8.1.1.8 Verify CRD supply and seal staging flow has been in operation for at least one hour prior to pump start to ensure the pump seals are vented.

CAUTION

Do not simultaneously start both RR pumps.

- \* 8.1.1.9 Close the following P680 breakers in order:
- a) Recirc Pump A(B) Mtr Bkr 3A(3B).
  - b) Recirc Pump A(B) Mtr Bkr 4A(4B).

NOTE

If FW flow is < 30% (~ 3.74 mlbm/hr), then:

- a) RR pump will accelerate on the 60 cycle source.
- b) The 1A(1B) breaker will close at the same time the 5A(5B) breaker closes.
- c) When pump speed is > 95% (1691 rpm), the 5A(5B) breaker will open.
- d) When pump speed drops to 20-26% (356 -463 rpm), the 2A(2B) breaker will close.

If FW flow is > 30% (~ 3.74 mlbm/hr), then RR pump speed will accelerate directly to 100% (1780 rpm).

- 8.1.1.10 Notify security that perimeter lighting may go out for ~ 2 to 6 minutes due to the pump start.

- 8.1.1 RR Pump - Startup (cont'd)
- 8.1.1.11 Monitor reactor power and RPV water level during the starting of a RR pump.
- 8.1.1.12 Start RR pump A(B) by closing Recirc Pump A(B) Drive Motor Bkr 5A(5B).
- 8.1.1.13 If RR pump startup was directed from section 8.2.6, Idle RR Loop - Restart (step 8.2.6.6), return to step 8.2.6.7. Otherwise continue in this section.

NOTE

A 40 sec incomplete sequence timer starts when the CB-5 breaker is closed. If after 40 sec, pump speed is not 20-26% or CB-2 is not shut, the incomplete sequence relay will trip CB-1 & CB-5.

- 8.1.1.14 . After the RR pump is in service on the LFMG, open the FCV to full open position.
- ⊙ OK to inhibit FCV motion per CPS No. 3302.02, REACTOR RECIRCULATION FLOW CONTROL HYDRAULIC SYSTEM while in slow speed RR pump operation to prevent inadvertent FCV runbacks.
  - ⊙ OK to restart RR HPUs per CPS No. 3302.02 after a short shutdown.
- 8.1.1.15 Monitor Table 1, RR Pump Seal Key Parameters (page 26). If they approach or reach the maximum allowable, corrective action should be taken.
- ⊙ 8.1.1.16 STA: To obtain a valid heat balance, verify/substitute 0.074 into points B33NA003 and 004, RR Pump A(B) Motor Power per CPS No. 3512.01, DISPLAY CONTROL SYSTEM (DCS)/PERFORMANCE MONITORING SYSTEM (PMS).
- 8.1.1.17 To start the other RR pump, repeat section 8.1.1.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

TASK TITLE: Manually Initiate the High Pressure Core Spray System (HP) - Initiation Logic Available per CPS 3309.01

TASK NUMBER: 015200C617

APPLICABILITY: RO X SRO X

_____	_____
TRAINEE	DATE
_____	_____
EVALUATOR	
=====	=====

**METHOD OF TESTING:**

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 3 minutes

=====	
Prepared/Revised by: _____	Date: _____
Reviewed by: _____	Date: _____
Instructor - Operations	
Approved by: _____	Date: _____
Supervisor - Operations Training	

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Initialize to any suitable IC with HPCS in Standby. Suppression Pool Level is < 19' 11.5".  
RCIC Storage Tank Level is > 2200 gal.

**TASK STANDARDS:**

The High Pressure Core Spray (HPCS) System is manually initiated and is injecting into the reactor vessel.

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3309.01, HIGH PRESSURE CORE SPRAY

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

An emergency condition exists. Manually initiate HPCS using the manual initiation pushbutton.

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



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Manually Initiate High Pressure Core Spray (HP) - Logic Operable

- 8.1.3 a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow to Suppr Pool:  
Opens whenever HPCS flow is < 625 gpm with HPCS discharge pressure > 145 psig, and  
Shuts whenever HPCS flow is  $\geq$  625 gpm.

- \* b) **Arm and Depress HPCS MANUAL INITIATION pushbutton.**

STANDARD:

HPCS Manual Initiation pushbutton is armed and depressed.

CUE:

COMMENTS:

"HPCS MANUAL INITIATION SWITCH IN ARMED POSITION" and "HPCS AUTO START" annunciators acknowledged.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

- c) Verify HPCS initiates per section 8.1.2
- 8.1.2 a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow To Suppr Pool:
  - Opens whenever HPCS flow is , 625 gpm with HPCS discharge pressure < 145 psig, and
  - Shuts whenever HPCS flow is  $\geq$  625 gpm.
- b) Verify following events occur upon HPCS initiation:
  - 1) 1E22-F001, HPCS Storage Tank Suction Valve opens if 1E22-F015, Suppr Pool Suction Valve not open

STANDARD:

Verifies RED light ON for 1E22-F001

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

- 2) HPCS Pump, 1E22-C001 starts.

STANDARD:

Verifies RED light ON for HPCS pump.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

3) HPCS Pmp Rm Sply Fans, 1VY08CA and B start.

STANDARD:

Verifies RED light ON for 1VY08CA and B

CUE:

COMMENTS:

On vertical section of panel P-800

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

4) 1E22-F004, HPCS To CNMT Outbd Isln Valve opens.

STANDARD:

Verifies RED light ON for 1E22F004.

Verifies RED and GREEN light ON for 1E22-F012

CUE:

COMMENTS:

Min. Flow valve may be in mid position based on pressure and flow.

Red and green lights for the injection valve may be ON at the same time due to the long valve stroke time.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

5) Diesel Generator 1C starts.

STANDARD:

Verifies RED light ON for DG 1C

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

6) SSW Pump 1C, 1SX01PC starts.

STANDARD:

Verifies RED light ON for SX Pump 1C.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

- c) Verify shut:
  - 1) 1E22-F010, HPCS First Test Vlv to Storage Tank
  - 2) 1E22-F011, HPCS Second Test Vlv to Storage Tank
  - 3) 1E22-F023, HPCS Test Valve to Suppr Pool

STANDARD:

Verifies GREEN light ON for 1E22-F010, 1E22-F011, and 1E22-F023

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

**TERMINATING CUES:**

The HPCS system is injecting water into the reactor vessel.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 2

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 1

The plant was at 100% power when 4.16 KV Bus 1B locked out due to an overcurrent condition. The loss of the 4.16 bus resulted in a trip of the reactor feed pumps with the resulting level transient. Level decreased below level 2 before recovering. Diesel Generator 1C automatically started during the transient. What caused the auto start of Diesel Generator 1C?

**ANSWER:**

Actuation of High Pressure Core Spray (HPCS) logic

**REFERENCE(S):**

E02-1HP99, Sheet 5

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

The High Pressure Core Spray (HPCS) System is in standby and reactor power is 75%. An instrument failure results in the shift of the HPCS suction to the suppression pool. What reports/notifications, if any, must be made?

**ANSWER:**

No notification required

**REFERENCE(S):**

CPS No. 1016.04, Appendix E, LER 86-20  
CPS No. 1405.04, Also see 2.2 INVALID ACTUATIONS

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
209002	K6.01		3.6
209002	G2.1.14		3.3

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

An emergency condition exists. Manually initiate HPCS using the manual initiation pushbutton.

8.1.3 Manual Initiation - Logic Operable

- a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow To Suppr Pool:  
Opens whenever HPCS flow is  $< 625$  gpm with HPCS discharge pressure  $> 145$  psig, and  
Shuts whenever HPCS flow is  $\geq 625$  gpm.
- b) Arm and Depress HPCS MANUAL INITIATION pushbutton.
- c) Verify HPCS initiates per section 8.1.2.

NOTE

Shutting 1E22-F004, HPCS To CNMT Outbd Isln Valve with an initiation signal present prevents any further automatic opening until the initiate signal clears and is reset; therefore, manual operation of the valve will be required to maintain level.

To open 1E22-F004 that has closed on Level 8, the RX WTR LEVEL HI SEAL IN RESET push-button must be depressed (when  $> \text{Level } 2$ ).

- d) Restore and maintain level using 1E22-F004, HPCS To CNMT Outbd Isln Valve.

8.1.4 Manual Initiation - Logic NOT Operable

- a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow To Suppr Pool:  
Opens whenever HPCS flow is  $< 625$  gpm with HPCS discharge pressure  $> 145$  psig, and  
Shuts whenever HPCS flow is  $\geq 625$  gpm.
- b) Start HPCS Pump, 1E22-C001.
- c) Verify 1E22-F012, HPCS Pump Min Flow To Suppr Pool opens.
- d) Verify HPCS Pmp Rm Sply Fans, 1VY08CA and B start.

NOTE

To open 1E22-F004 that has closed on Level 8, the RX WTR LEVEL HI SEAL IN RESET push-button must be depressed (when  $> \text{level } 2$ ).

- e) Open 1E22-F004, HPCS To CNMT Outbd Isln Valve,
- f) Restore and maintain level using 1E22-F004, HPCS To CNMT Outbd Isln Valve.

7.0 MATERIAL AND/OR TEST EQUIPMENT

Hoses as necessary to support fill, vent, and drain evolutions.

8.0 PROCEDURE8.1 Normal Performance8.1.1 STANDBY

HPCS is lined up, ready to automatically initiate on a LOCA signal and inject water from the RCIC storage tank, or the suppression pool to the RPV.

- a) Verify proper operation of HPCS Water Leg Pump, 1E22-C003.
- b) Verify prerequisites (listed in section 5.0) are met.
- c) Perform surveillance testing as specified in Tech Specs.

8.1.2 Automatic Initiation

- a) During HPCS operation, verify as appropriate that 1E22-F012, HPCS Pump Min Flow To Suppr Pool:  
Opens whenever HPCS flow is < 625 gpm with HPCS discharge pressure > 145 psig, and  
Shuts whenever HPCS flow is  $\geq$  625 gpm.
- b) Verify following events occur upon HPCS initiation:
  - 1) 1E22-F001, HPCS Storage Tank Suction Valve opens if 1E22-F015, Suppr Pool Suction Valve not open.
  - 2) HPCS Pump, 1E22-C001 starts.
  - 3) HPCS Pmp Rm Sply Fans, 1VY08CA and B start.
  - 4) 1E22-F004, HPCS To CNMT Outbd Isln Valve opens.
  - 5) Diesel Generator 1C starts.
  - 6) SSW Pump 1C, 1SX01PC starts.
- c) Verify shut:
  - 1) 1E22-F010, HPCS First Test Vlv To Storage Tank.
  - 2) 1E22-F011, HPCS Second Test Vlv To Storage Tank.
  - 3) 1E22-F023, HPCS Test Valve To Suppr Pool.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

TASK TITLE: Emergency Startup of Standby Drywell Cooling System

TASK NUMBER: 011222C506

APPLICABILITY: RO X SRO X

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 6 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Initiate to any suitable IC that has a VP in standby.

**TASK STANDARDS:**

Operator actions performed per CPS No. 3320.01, Step 8.2.2

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3320.01, DRYWELL COOLING SYSTEM, Step 8.2.2

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

An Emergency Condition Exists; perform an emergency startup of the 'A' Drywell Cooling System per CPS No. 3320.01

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

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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.

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PERFORMANCE STEPS

JPM TITLE: Emergency Startup of Standby Drywell Cooling System

8.2.2.1 At 1H13-P801, start the standby Drywell Cooling System as follow:

\*8.2.2.1.1 **Start Drywell Cooling Fans 1VP01CB and 1VP01CD (1VP01CA and 1VP01CC).**

STANDARD:

Takes handswitches for Drywell Cooling Fans 1B and 1D to START and observes RED light ON for each fan.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

\*8.2.2.1.2 Start Chill Water Pump 1VP03PB (1VP03PA) without first closing discharge valve.

STANDARD:

Takes handswitch for Drywell Chill Water Pump 1B to START and observes RED light ON.  
Observes RED no flow light ON.

CUE:

COMMENTS:

Low flow chilled water annunciator clears.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.1.3 Verify/Place 1SX020B(A), Drywell Chiller 1B(1A) Inlet Valve in AUTO AFTER OPEN.

STANDARD:

Verifies 1SX020B in AUTO AFTER OPEN

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

\*8.2.2.1.4 Start standby Drywell Chiller 1VP04CB (1VP04CA) using the START pushbutton on 1H13-P801.

STANDARD:

Depresses START pushbutton for standby Drywell Chiller 1B and observes RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.1.5 Send an area operator to the Drywell Chiller to monitor performance and load the chiller as required in accordance with steps 8.1.1.5.7 and 8.1.1.5.8.

STANDARD:

Notifies area operator to monitor and load the chiller as required.

CUE:

Area operator is on the way to the chiller for local monitoring

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

8.2.2.1.6 If 1VP01CA, 1VP01CC, and 1VP01CB, 1VP01CD are all going to be left running, then open 1VP10Y and 1VP12Y at PNL 1PL43JA and JB.

STANDARD:

Notifies area operator to open the dampers as required.

CUE:

Dampers have been opened.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.2.2 At 1H13-P800-65, transfer Supplemental Drywell Cooling Coil Units 1VP02SE and 1VP02SF to the operating Drywell Cooling System as follows:

\*8.2.2.2.1 **Close Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves 1VP090A/1VP091A (1VP090B/1VP09091B).**

STANDARD:

Takes handswitch for 1VP090A/91A to CLOSE and observes GREEN light ON for both valves

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

**\*8.2.2.2.2 Open Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves  
1VP090B/1VP091B (1VP090A/1VP091A).**

STANDARD:

Takes handswitch for 1VP090B/91B to OPEN and observes RED light ON for both valves

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**8.2.2.2.3 Verify WO system lineup to supplemental drywell cooling coil units 1VP02SG and  
1VP02SH.**

STANDARD:

Verifies WO system lineup by observing RED light ON for the following:  
1WO551A/552A CH WTR OUTBD ISOL VLVS  
1WO551B/552B CH WTR INBD ISOL VLVS  
1VP01CG/H DW Cooling Fans 1G/1H

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

8.2.2.3 Locally monitor Drywell Chiller 1A for proper operation.

STANDARD:

Notifies area operator to monitor the Drywell Chiller 1A for proper operation

CUE:

Drywell Chiller 1A is operating properly

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

TERMINATING CUES:

Startup of drywell cooling system is complete.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 3

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

**QUESTION NO.:**          1      

Several Drywell Cooling System (VP) components "Shunt Trip" on a LOCA signal. What VP components do NOT receive a shunt trip signal?

**ANSWER:**

Supplemental Drywell Cooling Fans (1E, 1F, 1G, and 1H)

**REFERENCE(S):**

CPS No. 3320.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

The Plant is operating at 100 % power. A CR has just been delivered to the Control Room which has identified the oil coolers for the Drywell Purge Compressors as being Non-Q . The Shift Manager states that he will declare the Drywell Purge Compressors INOP and must verify the status of the Hydrogen Control Function. What constitutes the Hydrogen Control Function?

**ANSWER:**

At least ONE (1) Division of Hydrogen Igniters are OPERABLE.

**REFERENCE(S):**

ITS 3.6.3.3 Action B.1 and Bases

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
223001	K6.11		3.0
223002	G2.1.12		4.0

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

An Emergency Condition Exists; perform an emergency startup of the 'A' Drywell Cooling System per  
CPS No. 3320.01

- 8.2.2 Emergency Startup of Standby Drywell Cooling System
- 8.2.2.1 At 1H13-P801, start the standby Drywell Cooling System as follow:
- 8.2.2.1.1 Start Drywell Cooling Fans 1VP01CB and 1VP01CD (1VP01CA and 1VP01CC).
- 8.2.2.1.2 Start Chill Water Pump 1VP03PB (1VP03PA) without first closing discharge valve.
- ① 8.2.2.1.3 Verify/Place 1SX020B(A), Drywell Chiller 1B(1A) Inlet Valve in AUTO AFTER OPEN.
- 8.2.2.1.4 Start standby Drywell Chiller 1VP04CB (1VP04CA) using the START pushbutton on 1H13-P801.
- 8.2.2.1.5 Send an area operator to the Drywell Chiller to monitor performance and load the chiller as required in accordance with steps 8.1.1.5.7 and 8.1.1.5.8.
- 8.2.2.1.6 If 1VP01CA, 1V01CC and 1VP01CB, 1VP01CD are all going to be left running, then open 1VP10Y and 1VP12Y at 1PL43JA and JB.
- 8.2.2.2 At 1H13-P800-65, transfer Supplemental Drywell Cooling Coil Units 1VP02SE and 1VP02SF to the operating Drywell Cooling System as follows:
- 8.2.2.2.1 Close Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves 1VP090A/1VP091A (1VP090B/1VP091B).
- 8.2.2.2.2 Open Supplemental Drywell Cooling Coil Units Supply and Return Isol Valves 1VP090B/1VP091B (1VP090A/1VP091A).
- 8.2.2.2.3 Verify WO system lineup to Supplemental Drywell Cooling Coil Units 1VP02SG and 1VP02SH.
- 8.2.2.3 Locally, monitor the operating Drywell Chiller to ensure proper operation.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

TASK TITLE: Manually Start Emergency Diesel Generator 1A

TASK NUMBER: 011264C526

APPLICABILITY: RO X SRO X

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

**METHOD OF TESTING:**

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 20 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Any suitable IC in which DG 1A is in standby with support systems available.  
Insert Instructor Override 05A1A5S19\_X DG 1A Voltage Regulator switch disabled.

**TASK STANDARDS:**

Diesel Generator 1A running at rated frequency, DG 1A Voltage Regulator identified as malfunctioning and all post-start verifications are completed.

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3506.01, DIESEL GENERATOR AND SUPPORT SYSTEMS, Section 8.1.3 and 8.3.  
CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS  
CPS No. 3506.01C002, DIESEL GENERATOR START LOG

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

Manually start Diesel Generator 1A per CPS 3506.01 starting at 8.1.3.7. A C Area qualified operator is standing by in the DG Room and prestart checks have been completed.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

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**PERFORMANCE INFORMATION**

Critical steps are denoted with an asterisk (\*) to the left of the step number and appear in **BOLDED**, CAPITAL 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.

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**PERFORMANCE STEPS**

JPM TITLE      Manual Start Emergency Diesel Generator 1A

8.1.3.7      Notify operator in Diesel Generator 1A(1B)(1C) Room of impending diesel start, and ensure the respective Diesel Generator HVAC Room is clear of personnel.

STANDARD:

Notifies C-Area operator of impending diesel start. Dispatches operator to verify DG 1A HVAC Room is clear of personnel.

CUE:

As C-Area operator, acknowledge that a start of DG1A is impending and DG 1A HVAC Room is clear.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

\*8.1.3.8 Start Diesel Generator 1A (1B) (1C) with the DG 1A (1B) (1C) Control switch on 1H13-P877 (P601).

STANDARD:

Starts DG 1A using Control switch on 1H13-P877 and observes DG 1A light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.3.9 Verify the Fuel Oil Transfer Pump starts at 1H13-P877 (P601), or locally.

STANDARD:

Observes RED light ON for 1DO01PA.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

8.1.2.10 Verify DG 1A (1B) (1C) Room Ventilation Fan running on 1H13-P801 (P800), or locally.

STANDARD:

Observes RED light ON for 1VD01CA.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.3.11 Verify DG 1A (1B) (1C) Hx Outlet Vlv 1SX063A(B) (1SX006C) open.

STANDARD:

Observes RED light ON for 1SX063A.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

8.1.2.12     IF SX pump 1SX01PA(B)(C) starts,  
              THEN Verify Plant Service Water (WS) to Shutdown Service Water (SX) header  
              isolation valve 1SX014A (B) (C) closed.

STANDARD:

Verifies GREEN light ON for 1SX014A if 1SX01PA starts..

CUE:

COMMENTS:

1SX01PA should not start due to this evolution.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.3.13     Verify DG 1A (1B) (1C) frequency 58.8-61.2 Hz.

STANDARD:

Verifies DG 1A frequency 58.8 to 61.2 on Output Frequency meter.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

8.1.2.14 Verify (using one of the following indications) DG1A (1B) (1C) voltage, panel meter 4000 (4000) (4000), computer point 4015 (4015) (4015), GETARS 3911 (3911) (3902) to < 4200 volts.

STANDARD:

Verifies DG 1A voltage < 4200 volts using panel meter 4000, computer point 4015, or GETARS 3911.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**\*8.1.3.15 Verify remote speed control by varying DG 1A (1B) (1C) frequency with DG 1A (1B) (1C) Governor control switch on 1H13-P877 (P601)**

STANDARD:

Alternately selects "RAISE" and "LOWER" on the Governor Control Switch. Observes frequency increase and decrease.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

\*8.1.2.16 Verify remote voltage control by varying DG 1A (1B) (1C) voltage with DG 1A (1B) (1C) Generator Voltage Regulator control switch on 1H13-P877 (P601)

STANDARD:

Alternately selects "INCREASE" and "DECREASE" on the voltage regulator control switch. Observes no change in voltage and reports to CRS that the voltage regulator is malfunctioning (not responding to manual control).

CUE:

As CRS, acknowledge the malfunctioning voltage regulator and direct that the remaining step of 8.1.3 be completed while Electrical Maintenance investigates.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.3.17 Locally check cylinder test valves and handhold covers for leakage and tighten as necessary.

STANDARD:

Directs C Area operator to check cylinder test valves and handhole covers for leakage.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

**TERMINATING CUES:**

DG 1A is operating at rated frequency and post-start verifications are complete.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 4

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

**THIS IS A CLOSED BOOK QUESTION**

QUESTION NO.: \_\_\_\_\_ 1 \_\_\_\_\_

Diesel Generator 1A has been started and paralleled with 4160 vac bus 1A1. A loss of coolant accident signal (LOCA) is received followed 3 minutes later by a loss of voltage on the 1A1 bus. What operator action, if any, is required?

**ANSWER:**

After the diesel output breaker trips open on the LOCA signal, the operator must take the output breaker control switch to TRIP and then release back to NORMAL to allow the diesel to reenergize the bus.

**REFERENCE(S):**

CPS No. 3506.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

The plant is at 100% power with all equipment normal except that 1A Diesel Generator is tagged out for turbocharger repair. Annunciator "HIGH/LOW TEMP DG ROOM 1B" (5052-4A) alarms. the operators note that the temperature in the 1B Diesel Generator room is 48°F and decreasing at approximately 1°F. per minute. What operator action must be taken after declaring the 1B DG inoperable.

**ANSWER:**

Attempt to restore DG Room Make Up Heater.

**REFERENCE(S):**

CPS ITS Section 3.8.1 Action E  
CPS No. 5052.04, page 1 (4A)  
CPS No. 3403.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
264000	K4.08		3.7
264000	G2.1.12		4.0

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

Manually start Diesel Generator 1A per CPS 3506.01 starting at 8.1.3.7. A C Area qualified operator is standing by in the DG Room and prestart checks have been completed.

NOTE

IF The DG output breaker trips while the DG is the only supply to 4160V Bus 1A1(1B1),

THEN Pressing the Offsite Permissive pushbutton within 15 seconds will allow the RAT/ERAT breaker to automatically close and re-energize the bus (assuming an offsite source is available),

OTHERWISE The RAT/ERAT breaker must be closed manually with the 1H13-P877 (P601) control switch. CPS No. 4200.01, LOSS OF AC POWER has instructions for loss of AC. ITS 3.8.1 & 3.8.2 have LCO guidance.

- 8.1.2.2 Station a C Area qualified operator in the DG 1A(1B) (1C) room until the diesel temperatures have stabilized and then make tours of the room at least once per hour while the diesel is running.
- c 8.1.2.3 Initiate the Diesel Generator 1A (1B) (1C) portion of CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS.
- c 8.1.2.4 Initiate the Diesel Generator 1A (1B) (1C) portion of CPS No. 3506.01C002, DIESEL GENERATOR START LOG.
- 8.1.3 Manual Starting DG 1A(1B) (1C)
- 8.1.3.1 Station a C Area qualified operator in the DG 1A(1B) (1C) room during initial DG Startup until the diesel temperatures have stabilized and then make tours of the room at least once per hour while the diesel is running.
- 8.1.3.2 Initiate the Following Logs Per Section 8.3.
- c 8.1.3.2.1 CPS No. 3506.01C001, DIESEL GENERATOR OPERATING LOGS.
- c 8.1.3.2.2 CPS No. 3506.01C002, DIESEL GENERATOR START LOG.
- 8.1.3.3 Perform the following prestart checks:
- ① 8.1.3.3.1 Check DG 1A(1B) governor lubricating oil level is at least 1/16" from top of sightglass or higher. For DG 1C check the governor lubricating oil level is at or above mark at the center of sightglass but still visible in upper half of sightglass. If low, contact Electrical Maintenance to add or drain MOBIL 1(5W-30) oil as needed.
- 8.1.3.3.2 Drain condensate from DG 1A (1B) (1C) air receivers by opening and closing Air Receiver Drain Valves 1DG623 (1DG626) (1DG629) and 1DG624 (1DG627) (1DG630).

- 8.1.3.3.3 Drain condensate from DG 1A (1B) (1C) Air Start System by opening and closing the following valves:
- a) DG 1A (1B) (1C) Air Start Supply Drain 1DG009A (1DG009C) (1DG009E).
  - b) DG 1A (1B) (1C) Air Start Supply Drain 1DG009B (1DG009D) (1DG009F).
  - c) DG 1A Air Receiver Outlet Drain 1DG017A.
  - d) DG 1A Air Receiver Outlet Drain 1DG017B.
  - e) DG 1C Air Receiver A Downstream Drain, 1DG014.
  - f) DG 1C Air Receiver B Downstream Drain, 1DG013.
- 8.1.3.3.4 Check DG 1A (1B) (1C) lubricating oil strainer housing oil level is up to bottom of overflow opening.
- 8.1.3.3.5 Check all associated air start motors are disengaged.
- 8.1.3.3.6 Check all associated in line air lubricators are filled with oil.

NOTE

The DG 1C shall not be started when the oil level is outside the STBY band on the generator bearings sight glasses.

- 8.1.3.3.7 For DG 1C, check generator bearing oil level is in the top band on the sight glasses. Contact Electrical Maintenance to add or drain oil as needed.

NOTE

The gallery oil level upper sight glass (if installed) may remain full as long as 24 hours when restoring the engine to standby following a cold shutdown period. This is due to the time required to heat the oil and engine to standby temperatures.

- 8.1.3.3.8 Check Engine (1A) (1B) (1C) gallery oil level upper sightglass empty and lower sight glass is full. IF Oil levels are not as stated, THEN Initiate investigation to determine cause.

NOTE

Refer to ITS LCOs 3.8.1 and 3.8.2 prior to performing next step.

c

CAUTION

The amount of time the DG Engine Control Switch is in LOCKOUT (MAINTENANCE) during engine bar over should be minimized to limit the time the DG is inoperable and would be unavailable for an automatic start.

NOTE

Diesel Generator Pre Start checks are valid for up to 8 hours from the time of completion. If DG has ran in the last 8 hours then section 8.1.3.4 is N/A.

c 8.1.3.4 Place the Diesel Engine Control Switch at the Local DG Control Panel in the LOCKOUT (MAINTENANCE) position.

8.1.3.4.1 Perform the following for an OPERABLE Diesel Generator:

a) Declare the associated DG INOP.

NOTE

If the DG Control Switch is returned to the OPERATE position in less than one hour the following step 8.1.3.4.1 b) need not be performed.

b) Perform section 8.1 of CPS No. 9082.01 if in modes 1, 2, or 3 or NA if not required.

NOTE

Steps 8.1.3.4.2 and 8.1.3.4.3 can be done in any order or concurrently.

8.1.3.4.2 Open all DG cylinder test valves.

8.1.3.4.3 Remove rear (generator end) oil pan handhole cover and open topdeck covers.

NOTE

The following two steps may be performed individually or concurrently. If performed individually, inspect the test valves for drips or floor skid for liquid discharge from test valves.

8.1.3.4.4 Bar over DG one to two revolutions.

- 8.1.3.4.5 Verify no leakage from test valves. If any fluid discharge is observed, then initiate investigation and repairs.
- 8.1.3.4.6 Close all cylinder test valves.
- 8.1.3.4.7 Verify no oil flow is observed at the camshaft bearings and rocker arms. Inspect rocker arm assemblies and valve train push rods. Initiate investigation and repair if abnormality is found.
- 8.1.3.4.8 Observe proper lubrication at the crankshaft bearings and rear gear train.  
IF Oil flow is not observed,  
THEN Initiate investigation and repair.
- 8.1.3.4.9 Replace and securely close handhole cover and engine topdeck covers.
- 8.1.3.4.10 Place DG 1A (1B) (1C) Control Switch at Local DG 1A (1B) (1C) Control Panel in OPERATE (AUTO) position.

NOTE

Setting the DG 1C Governor Speed Droop to 50% INOPS the DG. Refer to ITS LCOs 3.8.1 or 3.8.2.

- 8.1.3.5 IF Starting DG 1C for parallel operations,  
THEN set DG 1C Governor Speed Droop at 50%.
- a) IF Div 3 DG is OPERABLE,  
THEN Declare associated DG INOP.
- b) IF Div 3 DG is OPERABLE,  
THEN Perform or verify current section 8.1 of CPS No. 9082.01 if in Modes 1, 2, or 3.

NOTE

The following step should only be performed for PMT run following Fuel System maintenance. Refer to 4.15.

- ⊙ 8.1.3.6 IF Maintenance was performed on the fuel system,  
THEN Prime the engine using the Manual Fuel Prime pushbutton located on the local control panel for DG 1A(1B), prime each engine until the pump discharge pressure has been stable for at least one minute, then continue priming for several more minutes.

CAUTION

When Diesel Generator room ventilation fan starts personnel could become trapped in HVAC Room.

- 8.1.3.7 Notify operator in Diesel Generator 1A(1B)(1C) Room of impending diesel start, and ensure the respective Diesel Generator HVAC Room is clear of personnel.
- 8.1.3.8 Start Diesel Generator 1A (1B) (1C) with the DG 1A (1B) (1C) Control switch on 1H13-P877 (P601).
- 8.1.3.9 Verify the Fuel Oil Transfer Pump starts at 1H13-P877 (P601), or locally.
- 8.1.3.10 Verify Diesel Generator 1A (1B) (1C) Room Ventilation Fan running on 1H13-P601 (P800), or locally.
- 8.1.3.11 Verify DG 1A (1B) (1C) Hx Outlet Vlv 1SX063A(B) (1SX006C) open.

NOTE

SX System A(B) may not start if WS System pressure does not drop below 79.6 psig.

- 8.1.3.12 IF SX pump 1SX01PA(B) (C) starts,  
THEN Verify Plant Service Water (WS) to Shutdown Service Water (SX) header isolation valve 1SX014A(B) (C) closed.
- 8.1.3.13 Verify DG 1A(1B) (1C) frequency 58.8-61.2 Hz.
- © c 8.1.3.14 Verify (using one of the following indications) DG 1A (1B) (1C) voltage, panel meter 4000(4000)(4000), computer point 4015(4015)(3978), GETARS 3911(3911)(3902) to <4200 volts.

NOTE

For smoother diesel adjustments of voltage and load during operation, the following two steps should be used to adjust the frequency and voltage to "Wipe the Pots". This action will prevent a buildup of dirt and moisture.

- 8.1.3.15 Verify remote speed control by varying DG 1A (1B) (1C) frequency with DG 1A (1B) (1C) Governor control switch on 1H13-P877 (P601).
- 8.1.3.16 Verify remote voltage control by varying DG 1A (1B) (1C) voltage with DG 1A (1B) (1C) Generator Voltage Regulator control switch on 1H13-P877 (P601).
- 8.1.3.17 Locally check cylinder test valves and handhole covers for leakage and tighten as necessary.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

TASK TITLE: Equalize Around and Open MSIVs per CPS No. 4411.09

TASK NUMBER: 015200C643

APPLICABILITY: RO X SRO X

\_\_\_\_\_

TRAINEE

\_\_\_\_\_

DATE

\_\_\_\_\_

EVALUATOR

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 30 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Any IC with the reactor shutdown, RPV pressurized, and MSIVs/MSL drains shut. Establish/verify a condenser vacuum pump is lined up and running on the Main Condenser. Reset the Main Turbine and close Turbine Drains.

**TASK STANDARDS:**

Operator actions performed per CPS No. 4411.09

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 4411.09, RPV PRESSURE CONTROL SOURCES

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

A loss of IA resulted in closure of the MSIVs. IA has been recovered. EOP-1 has been entered and to assist in RPV pressure control you are directed to reopen the MSIVs per CPS No. 4411.09

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

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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.

---

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PERFORMANCE STEPS

JPM TITLE: Equalize Around and Open MSIVs per CPS No. 4411.09

NOTE

Additional guidance for normal operating modes is in CPS No. 3101.01, MAIN STEAM (MS, IS & ADS).

- 2.2.2 a **IF** This step was entered from EOP-2, EOP-3, or EOP-4,  
**THEN** 1) OK to defeat isolations per  
CPS No. 4410.00C007, DEFEATING RPV  
PRESSURE CONTROL SYSTEM INTERLOCKS.  
2) OK to exceed 100°F/hr cooldown.

2.2.2 b Reset any cleared GROUP 1 isolations.

STANDARD:

Determines that no pressure control system interlocks need to be defeated and that Group 1 isolation is reset.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

2.2.2 c      Regardless if Circ Water (CW) is available or not:  
☞      OK to position Div 1(2,3,4) Condenser Low Vacuum Bypass switches to  
                BYPASS to clear Gr 1 interlocks.

- 1)      Establish vacuum per  
                CPS No. 3112.01, CONDENSER VACUUM (CA), or
- 2)      If vacuum cannot be established,  
                open 1CA007, Condenser Vacuum Breaker Valve.

2.2.2 d      To avoid inadvertent bypass valve operation, maintain Pressure Set Point at least 50  
                psig  
                > RPV pressure.

STANDARD:

Determines that Condenser vacuum is already established

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JGJ PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

\*2.2.2 e **Open 1B21-F098A(B, C, & D), Main Steam Shutoff Valves.**

STANDARD:

Takes handswitches for 1B21-F098A(B,C,&D) to OPEN and observes RED light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

\*2.2.2 f **Open 1B21-F028A(B, C, & D), Main Steam Line Outbd MSIVs.**

- ☞ OK to open following drains to assist in the attempt.
  - 1B21-F067A(B, C, & D), MSL Outbd MSIV Before Seat Drn Vlvs.
  - 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
  - 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.

STANDARD:

Takes handswitches for 1B21-F)28A(B, C, & D), to OPEN and observes RED light ON for each valve.

CUE:

COMMENTS:

May open drain valves to assist in equalizing

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

\*2.2.2 g      **Equalize around the MSIVs by opening:**

- 1)      1B21-F016, MS Drn & MSIV Byp Inbd Isol Valve.
- 2)      1B21-F019, MS Drn & MSIV Byp Outbd Isol Valve.
- 3)      1B21-F020, MSIV Byp Vlv For MS Line Warm Up.

STANDARD:

Takes handswitches for 1B21-F016, 19, and 20 to OPEN and observes RED light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

\*2.2.2 h **Establish a  $\Delta P \leq 200$  psid across the MSIVs.**

- ☞ OK to shut following drains to assist in the attempt.
  - 1B21-F015, MS Low Points Drn Shutoff Valve.
  - 1B21-F021, Inbd MSIV Before Seat Warmup Drn Valve.
  - 1B21-F033, Inbd MSIV Before Seat Warmup Drn Valve.
  - 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
  - 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.
  - 1B21-F070, MS Low Point Warm Up Drn Vlv.
  - 1B21-F071, MS Low Point Normal Drn Vlv.
  - 1TD-SV1(3,5,7), Mn Turb Stop Vlv #1(2,3,4) Drn Vlv (TG needs to be reset to shut).

STANDARD:

Establishes < 200 psid across MSIVs. Shuts drain valves as necessary.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

\*8.2.2.2 i **Open 1B21-F022A(B, C, & D), Main Steam Line Inbd MSIVs.**

STANDARD:

Takes handswitches for 1B21-FO22A(B, C, & D) to OPEN, and observes RED light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

**TERMINATING CUES:**

MISIVs are reopened.

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



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 5

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

**QUESTION NO.:** 1

The plant operating at 96% power. A C&I tech is performing a surveillance on Group One closure signals and currently has one of the channels tripped to perform the surveillance. The plant experiences a transient that results in the other channel tripping and causing an MSIV closure and a resultant SCRAM. The operators perform the immediate actions for the SCRAM. When the turbine generator tripped off line, one of the bypass valves came open about 50% and stuck open. The MSL pressure dropped quickly (<300 psig), while reactor vessel pressure is being controlled by the relief valves 51C and 51D.

Determine how you would recover (unisolate and open MSIVs) from this situation.

**ANSWER:**

Shut the open bypass valve,  
Using CPS No. 3101.01 step 8.1.1, open all the MSIVs except the inboards,  
Bypass the Inboard MSIVs and reduce dP to less than 100 psid, open Inboard MSIVs and watch level to minimize a level increase.

**REFERENCE(S):**

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

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

You are the CRS and the plant has been operating at near rated power for several weeks. The BCRO announces that temperatures in the main steam line tunnels are increasing, currently at 140°F and that the differential temperature in the tunnel, currently at 45°F, is also increasing.

What actions need to be taken.

**ANSWER:**

Ensure Aux Building HVAC operating,  
Determine if it is a RCIC or Main Steam Line leak.

(At 151°F 5067-2F will annunciate,  
and at 156°F 5067-1D will annunciate, and also Groups 1, 4, 5 & 6 will isolate).

**REFERENCE(S):**

CPS No. 5067.01D  
CPS No. 5067.02F

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

Importance Rating

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>RO</u>	<u>SRO</u>
239001	A2.03		4.2
239001	K4.01		3.8

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

A loss of IA resulted in closure of the MSIVs. IA has been recovered. EOP-1 has been entered and to assist in RPV pressure control you are directed to reopen the MSIVs per CPS No. 4411.09

2.2 NORMAL MCR SYSTEM LINEUP/OPERATION2.2.1 BYPASS VALVES TO MAIN CONDENSER

- a) If necessary, open the MSIVs per step 2.2.2.
- b) Open Main Turbine Bypass Valves as necessary to establish and maintain the desired pressure by using either of the following methods:
  - ° Depress Bypass Valve Opening Jack INCREASE push-button to open bypass valves as needed.
    - ☞ Fastest method, but no auto pressure control is available when using the Jack.
    - ☞ When Pressure Set control is desired/obtained, return the jack to full down.
  - ° Depress Pressure Set Point DECREASE push-button and lower the setpoint to below RPV pressure.
    - ☞ Slower method, but provides auto pressure control.
    - ☞ Lowering Pressure Set maximizes Bypass Valve availability, and causes the SRVs to close.

2.2.2 OPENING MSIVsNOTE

Additional guidance for normal operating modes is in CPS No. 3101.01, MAIN STEAM (MS, IS & ADS).

- a) IF This step was entered from EOP-2, EOP-3, or EOP-4,  
THEN
  - 1) OK to defeat isolations per CPS No. 4410.00C007, DEFEATING RPV PRESSURE CONTROL SYSTEM INTERLOCKS.
  - 2) OK to exceed 100°F/hr cooldown.
- b) Reset any cleared GROUP 1 isolations.
- c) Regardless if Circ Water (CW) is available or not:
  - ☞ OK to position Div 1(2,3,4) Condenser Low Vacuum Bypass switches to BYPASS to clear Gr 1 interlocks.
    - 1) Establish vacuum per CPS No. 3112.01, CONDENSER VACUUM (CA), or
    - 2) If vacuum cannot be established, open 1CA007, Condenser Vacuum Breaker Valve.
- d) To avoid inadvertent bypass valve operation, maintain Pressure Set Point at least 50 psig > RPV pressure.

2.2.2 OPENING MSIVs (cont'd)

- e) Open 1B21-F098A(B, C, & D), Main Steam Shutoff Valves.
- f) Open 1B21-F028A(B, C, & D), Main Steam Line Outbd MSIVs.
  - ☞ OK to open following drains to assist in the attempt.
    - ° 1B21-F067A(B, C, & D), MSL Outbd MSIV Before Seat Drn Vlvs.
    - ° 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
    - ° 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.
- g) Equalize around the MSIVs by opening:
  - 1) 1B21-F016, MS Drn & MSIV Byp Inbd Isol Valve.
  - 2) 1B21-F019, MS Drn & MSIV Byp Outbd Isol Valve.
  - 3) 1B21-F020, MSIV Byp Vlv For MS Line Warm Up.
- h) Establish a  $\Delta P \leq 200$  psid across the MSIVs.
  - ☞ OK to shut following drains to assist in the attempt.
    - ° 1B21-F015, MS Low Points Drn Shutoff Valve.
    - ° 1B21-F021, Inbd MSIV Before Seat Warmup Drn Valve.
    - ° 1B21-F033, Inbd MSIV Before Seat Warmup Drn Valve.
    - ° 1B21-F068, Outbd MSIV Before Seat Warmup Drn Vlv.
    - ° 1B21-F069, Outbd MSIV Before Seat Norm Drn Vlv.
    - ° 1B21-F070, MS Low Point Warm Up Drn Vlv.
    - ° 1B21-F071, MS Low Point Normal Drn Vlv.
    - ° 1TD-SV1(3,5,7), Mn Turb Stop Vlv #1(2,3,4) Drn Vlv (TG needs to be reset to shut).
- i) Open 1B21-F022A(B, C, & D), Main Steam Line Inbd MSIVs.

2.2.3 SRVs

No unique lineups or operating modes exist when using the SRVs for pressure control.

Operate the SRVs in accordance with CPS No. 3101.01, MAIN STEAM (MS, IS & ADS) and within the guidelines specified in the entry EOPs.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

TASK TITLE: Shutdown RCIC - Initiation Signal Clear

TASK NUMBER: 011217C005

APPLICABILITY: RO X SRO X

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TRAINEE	DATE
EVALUATOR	

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**METHOD OF TESTING:**

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 5 minutes

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Prepared/Revised by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Supervisor - Operations Training



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

100% power with RCIC operating in the tank to tank mode.

**TASK STANDARDS:**

RCIC shutdown per CPS No. 3310.01, Section 8.1.6

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3310.01, REACTOR CORE ISOLATION COOLING (RI), Section 8.1.6

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

RCIC is currently operating in tank to tank mode. Shutdown RCIC per CPS No. 3310.01.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Shutdown RCIC - Initiation Signal Clear

NOTE

Do not secure or place RCIC in manual override unless directed to per the EOPs, or by at least two independent indications:

- a) misoperation in automatic mode is confirmed,
- b) adequate core cooling is assured.

Minimize time on RCIC Min flow per Limitation 6.2.5.

8.1.6.1 If necessary, depress RCIC SEAL IN RESET push-button.

STANDARD:

Determines RESET is not necessary. WHITE light is extinguished.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

**\*8.1.6.2 Shut (if open) 1E51-F022,  
RCIC Pmp First Test Valve To Stor Tank.**

STANDARD:

Takes handswitch for 1E51-F022 to CLOSE and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**\*8.1.6.3 Shut 1E51-F095, RCIC Turb Stm Supp Bypass Valve.**

STANDARD:

Takes handswitch for 1E51-F095 to SHUT and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

**\*8.1.6.4 Trip RCIC turbine from 1H13-P601 by depressing the RCIC TURBINE REMOTE TRIP push-button.**

STANDARD:

Trips the RCIC turbine by depressing the trip pushbutton and observes GREEN light ON for trip/throttle valve, turbine speed decreasing

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

**\*8.1.6.5 Shut (if open) 1E51-F059, RCIC Pmp Second Test Valve To Stor Tank.**

STANDARD:

Takes handswitch for 1E51-F059 to close and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

\*8.1.6.6 Shut/verify shut 1E51-F045,  
RCIC Turb Stm Supp Shutoff Valve.

STANDARD:

Takes handswitch for 1E51-F045 to CLOSE and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

NOTE

1E51-F005 is normally closed and opens as required by a level signal from the turbine exhaust drain pot.

- 8.1.6.7 After 1E51-F045 closes,  
verify the following valves open automatically:
- a) 1E51-F004, RCIC Turb Exh Drn To RF First Isol Vlv.
  - b) 1E51-F025, RHR & RCIC Stm Supp First Drn Isol Valve.
  - c) 1E51-F026, RHR & RCIC Stm Supp Second Drn Isol Valve.

STANDARD:

After 1E51-F045 is SHUT, verifies 1E51-F004, F025, and F026 SHUT by observing GREEN light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

8.1.6.8 Verify following valves shut:

- a) 1E51-F013, RCIC Pump Disch To Rx Outbd Isol Valve.
- b) 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr Pool.

STANDARD:

Verifies 1E51-F013 and 1E51-F019 SHUT by observing GREEN light ON for each valve.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.6.9 Reset the RCIC Turbine Trip & Throttle Valve as follows:

- a) Place 1E51-C002, RCIC Turbine Trip Vlv Opr switch to CLOSE to reset the RCIC Turbine Trip & Throttle Valve.
- b) Open 1E51-C002, RCIC Turbine Trip Vlv Opr (Stem).

STANDARD:

Takes handswitch for 1E51-C002 to CLOSE and verifies GREEN light ON. Takes handswitch for 1E51-C002 to OPEN and verifies RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

8.1.6.10 Stop the Gland Seal Air Compressor

STANDARD:

Takes handswitch for Gland Seal Compressor to STOP and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.6.11 Shut 1E51-F046, RCIC Pmp Supp To Turb Lube Oil Clr.

STANDARD:

Takes handswitch for 1E51-F046 to CLOSE and verifies GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.1.6.12 Verify RCIC Pump Flow Cont, 1E51-R600 set to 600 gpm/AUTO.

STANDARD:

Verifies 1E51-R600 set to 600 gpm and in AUTO.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

TERMINATING CUES:

RCIC is shutdown

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



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 6

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 1

The plant was operating at ~54% power with the 'B' TDRFP having been shutdown for troubleshooting following a trip. A small break LOCA occurred causing a high drywell pressure condition. Subsequently, RPV level dropped to Level 2 and RCIC auto started. Shortly thereafter, RCIC tripped and isolated. Why did RCIC trip and isolate and what caused the condition that led to the trip and isolation?

**ANSWER:**

RCIC isolated on a high area temperature which caused the trip. The high temperature was caused by the failure of the gland seal air compressor to auto start on an initiation signal because it had been shunt tripped on the high drywell pressure signal.

**REFERENCE(S):**

CPS 3310.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

**THIS IS A CLOSED BOOK QUESTION**

QUESTION NO.: 2

What is the response of the RCIC system if aligned in the CST to CST mode to an increasing Suppression Pool Level?

**ANSWER:**

1E51-F031, RCIC Suppr Pool Suction Valve, opens  
1E51-F010, RCIC Storage Tank Suction Valve, closes  
1E51-F022, RCIC Pmp First Test Valve to Stor Tank, closes  
1E51-F059, RCIC Pmp Second Test Valve to Stor Tank, closes  
Pump runs on minimum flow

**REFERENCE(S):**

CPS No. 3310.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
217000	A2.01		3.7
217000	A2.12		3.4

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

RCIC is currently operating in tank to tank mode. Shutdown RCIC per CPS No. 3310.01

8.1.6 Shutdown - Initiation Signal ClearNOTE

Do not secure or place RCIC in manual override unless directed to per the EOPs, or by at least two independent indications:

- a) misoperation in automatic mode is confirmed,
- b) adequate core cooling is assured.

Minimize time on RCIC Min flow per Limitation 6.2.5.

8.1.6.1 If necessary, depress RCIC SEAL IN RESET push-button.

8.1.6.2 Shut (if open) 1E51-F022,  
RCIC Pmp First Test Valve To Stor Tank.

8.1.6.3 Shut 1E51-F095, RCIC Turb Stm Supp Bypass Valve.

8.1.6.4 Trip RCIC turbine from 1H13-P601 by depressing the RCIC TURBINE REMOTE TRIP push-button.

8.1.6.5 Shut (if open) 1E51-F059,  
RCIC Pmp Second Test Valve To Stor Tank.

8.1.6.6 Shut/verify shut 1E51-F045,  
RCIC Turb Stm Supp Shutoff Valve.

NOTE

1E51-F005 is normally closed and opens as required by a level signal from the turbine exhaust drain pot.

8.1.6.7 After 1E51-F045 closes,  
verify the following valves open automatically:

- a) 1E51-F004, RCIC Turb Exh Drn To RF First Isol Vlv.
- b) 1E51-F025, RHR & RCIC Stm Supp First Drn Isol Valve.
- c) 1E51-F026, RHR & RCIC Stm Supp Second Drn Isol Valve.

8.1.6.8 Verify following valves shut:

- a) 1E51-F013, RCIC Pump Disch To Rx Outbd Isol Valve.
- b) 1E51-F019, RCIC Pmp Min Flow Recirc To Suppr Pool.

8.1.6.9 Reset the RCIC Turbine Trip & Throttle Valve as follows:

- a) Place 1E51-C002, RCIC Turbine Trip Vlv Opr switch to CLOSE to reset the RCIC Turbine Trip & Throttle Valve.
- b) Open 1E51-C002, RCIC Turbine Trip Vlv Opr (Stem).

8.1.6.10 Stop the Gland Seal Air Compressor.

8.1.6.11 Shut 1E51-F046, RCIC Pmp Supp To Turb Lube Oil Clr.

8.1.6.12 Verify RCIC Pump Flow Cont, 1E51-R600 set to 600 gpm/AUTO.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

TASK TITLE: Purge Primary Containment Using VG

TASK NUMBER: 011261C505

APPLICABILITY: RO X SRO X

\_\_\_\_\_  
TRINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

METHOD OF TESTING:

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

APPROXIMATE TIME FOR COMPLETION: 15 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Any suitable IC with VG trains in standby and containment pressure < 2.6 psig.

**TASK STANDARDS:**

Primary Containment purged using SGTS per CPS No. 3319.01

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3319.01, STANDBY GAS TREATMENT (VG), Section 8.2.5

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

It has been decided to purge primary containment following completion of painting. The CRS directs you to purge primary containment using Standby Gas Treatment.

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



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Purge Primary Containment Using Standby Gas Treatment (VG)

CAUTION

SBGT should not be used if area being ventilated is > 212°F.

NOTE

CNMT purge is not available if CNMT pressure is  $\geq 2.6$  psid. This interlock shall not be defeated to run VG for CNMT purge. (Actual setpoint 2.56 psid, SPDS reads only to tenths).

8.2.5.1 Verify CNMT pressure < 2.6 psid by observing HI CNMT PRESS white indicating light (above 1VG01YA/B switch) OFF.

STANDARD:

Verifies containment pressure < 2.6 psid by observing HI CNMT PRESS WHITE light OFF.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

8.2.5.2 Notify Radiation Protection to verify 0PR03S or 0PR04S in service and Chemistry Department should be notified immediately after establishing flow.

STANDARD:

Notifies RP to verify 0PR03S or 0PR04S in service

CUE:

0PR03S is in service

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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**\*8.2.5.3 Position the selected train's 1VG02YA(B), Fuel Building Isolation Damper control switch to CLOSE and verify:**

- a) 1VG02YA(B) closes. (if open)
- b) 1VG04YA(B), SGTS TRN A(B) Pmp Rms Suction Damper closes.
- c) 1VG05YA(B), SGTS TRN A(B) Fuel Bldg Suct Dmpr closes (if open)
- d) 1VG06YA(B), SGTS TRN A (B) ECCS Rms Suct Dmpr closes.

STANDARD:

Takes handswitch for 1VG02YA to CLOSE and verifies GREEN light ON for 1VG02YA, 1VG04YA, 1VG05YA, and 1VG06YA.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

c NOTE

In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, & 3, the following valves shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

☞ Obtain Shift/Assistant Shift Supervisors approval to perform the following step.

**\*8.2.5.4 Open 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.**

STANDARD:

Requests permission to complete step 8.2.5.4 and open 1VQ006A and 1VQ006B.  
After receiving permission, takes handswitch for 1VQ006A/6B to OPEN and observes RED light for each damper.

CUE:

Open 1VQ006A and 1VQ006B

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

NOTE

Starting an Exhaust Fan will automatically close 1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper.

\*8.2.5.5 **Place the selected train in service by starting its respective Exhaust Fan, 0VG02CA(B).**

STANDARD:

Takes handswitch for 0VG02CA Exhaust Fan to START and observes RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

NOTE

The SGTS Trn A(B) DW Purge Isolation Damper, 1VG01YA(B) will not open if Containment pressure is 2.6 psid or more.

For the following steps, the flow rate for SGTS will be substantially less than the nominal flow of 4000 SCFM due to piping restrictions. The flow should be about 400 - 500 SCFM.

- \*8.2.5.6 If the white Permissive light is unlit (indicating less than 2.6 psid Containment pressure), then **open 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE.**

STANDARD:

Verifies WHITE Permissive light is UNLIT and takes handswitch for 1VG01YA to PURGE and observes RED light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

c

NOTE

In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, &3, the following valves [1VR002A(B) & 1VQ006A(B)] shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

☞ Obtain Shift/Assistant Shift Supervisors approval to perform the following step.

**\*8.2.5.7 When Containment pressure becomes negative, open 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.**

STANDARD:

Requests permission to open 1VR002A and 1VR002B when containment pressure becomes negative. When Containment pressure becomes negative, takes handswitch for 1VR002A and 1VR002B to OPEN and observes RED light ON for each damper.

CUE:

Open 1VR002A and 1VR002B when containment pressure becomes negative.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

**\*8.2.5.8 When Containment Purge with SGTS is no longer desired, close 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.**

STANDARD:

Takes handswitch for 1VR002A and 1VR002B to CLOSE and observes GREEN light ON for each damper.

CUE:

Containment purge using SGTS is no longer needed.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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**\*8.2.5.9 Close 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers..**

STANDARD:

Takes handswitch for 1VQ006A and 1VQ006B to CLOSE and observes GREEN light ON for each damper.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

\*8.2.5.10 Close 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its handswitch to NORMAL.

STANDARD:

Takes handswitch for 1VG01YA to NORMAL and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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8.2.5.11 Verify Chemistry has performed samples as required per CPS 919940.01, WEEKLY CHEMISTRY SURVEILLANCE LOG and ODCM 3.2.2/ TBL 3.4-1 ITEM B prior to shutdown.

STANDARD:

Contacts Chemistry to verify samples have been performed per CPS 919940.01

CUE:

Samples have been performed per CPS 919940.01

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

NOTE

1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and  
1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, will open when  
the Exhaust Fan is stopped.

\*8.2.5.12 **Shutdown the operating SGTS train by stopping its respective Exhaust Fan, 0VG02CA(B) by returning its control switch to AUTO.**

STANDARD:

Takes handswitch for 0VG02CA to AUTO and observes GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

8.2.5.13 Start the SGTS TRN A(B) STANDBY CLG FAN, 0VG03CA(B) per 8.2.2.1 and continue to operate the fan until such time that it has been determined that the decay heat in the charcoal absorber has decreased to the point where the Cooling Fan is no longer needed. (Refer to section 8.2.2.2 for shutting down the fan.)

\*8.2.3.1 **Start Cooling Fan, 0VG03CA(B), and verify that the following dampers open:**

- a) 0VG03YA(B), SGTS TRN A(B) Cont. Bldg Isol Damper
- b) 0VG04YA(B), SGTS TRN A(B) Clg Fan 3CA(B) Exh Damper
- c) 0VG05YA(B), SGTS TRN A(B) Exh Fan (Stack) Damper

STANDARD:

Takes handswitch for 0VG03CA to START and observes RED light ON. Verifies RED light ON for dampers 0VG03YA, 0VG04YA, and 0VG05YA.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

\*8.2.5.14 Position 1VG02YA(B), Fuel Bldg Isolation Damper control switch to AUTO and verify 1VG04YB, Pump Rooms Suction Damper, opens (1VG04YA remains closed).

STANDARD:

Takes handswitch 1VG02YA to AUTO and verifies RED light ON for 1VG04YB. Verifies 1VG04YA GREEN light ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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8.2.5.15 If desired, establish Containment Building ventilation/purge per CPS No. 3408.01, CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ).

STANDARD:

Requests direction to establish Containment Building ventilation.

CUE:

Will not be established at this time.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

TERMINATING CUES:

Containment Purge using SGTS has been completed.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 7

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

**THIS IS A CLOSED BOOK QUESTION**

QUESTION NO.: 1

Given the following conditions:

- A complete Standby Gas Treatment System initiation signal was received.
- Both Standby Gas Treatment Trains started as designed.
- The "A" Standby Gas Treatment Train was manually secured by the BCRO.
- The "B" Standby Gas Treatment Train is currently operating.

What condition will automatically start the "A" Standby Gas Treatment Train?

**ANSWER:**

Low flow in the operating train (Standby Gas Treatment Train).

**REFERENCE(S):**

CPS No. 3319.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

Describe how the Standby Gas Treatment System (SGTS) and ventilations systems will respond to a CCP Exhaust High Radiation Signal.

**ANSWER:**

All SGTS controlled ventilation systems (Fuel Building, Containment Building, Containment/Drywell Purge, and CCP HVAC) are secured. Both trains of SGTS will start.

**REFERENCE(S):**

CPS No. 3319.01

CPS No. 3404.01

CPS No. 3408.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
261000	K4.01		3.8
261000	K6.04		3.1

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

It has been decided to purge primary containment following completion of painting. The CRS directs you to purge primary containment using Stanby Gas Treatment.

8.2.5 Using Standby Gas Treatment To Purge Primary ContainmentCAUTION

SBGT should not be used if area being ventilated is > 212°F.

NOTE

CNMT purge is not available if CNMT pressure is  $\geq 2.6$  psid. This interlock shall not be defeated to run VG for CNMT purge. (Actual setpoint 2.56 psid, SPDS reads only to tenths).

- 8.2.5.1 Verify CNMT pressure < 2.6 psid by observing HI CNMT PRESS white indicating light (above 1VG01YA/B switch) OFF.
- 8.2.5.2 Notify Radiation Protection to verify OPR03S or OPR04S in service and Chemistry Department should be notified immediately after establishing flow.
- 8.2.5.3 Position the selected train's 1VG02YA(B), Fuel Building Isolation Damper control switch to CLOSE and verify:
- a) 1VG02YA(B) closes. (if open)
  - b) 1VG04YA(B), SGTS TRN A(B) Pmp Rms Suction Damper closes.
  - c) 1VG05YA(B), SGTS TRN A(B) Fuel Bldg Suct Dmpr closes. (if open)
  - d) 1VG06YA(B), SGTS TRN A (B) ECCS Rms Suct Dmpr closes.

c

NOTE

In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, & 3, the following valves shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

☞ Obtain Shift/Assistant Shift Supervisors approval to perform the following step.

- 8.2.5.4 Open 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.

NOTE

Starting an Exhaust Fan will automatically close 1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper.

- 8.2.5.5 Place the selected train in service by starting its respective Exhaust Fan, 0VG02CA(B).

NOTE

The SGTS Trn A(B) DW Purge Isolation Damper, 1VG01YA(B) will not open if Containment pressure is 2.6 psid or more.

For the following steps, the flow rate for SGTS will be substantially less than the nominal flow of 4000 SCFM due to piping restrictions. The flow should be about 400 - 500 SCFM.

- 8.2.5.6 If the white Permissive light is unlit (indicating less than 2.6 psid Containment pressure), then open 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its control switch to PURGE.

c

NOTE

In accordance with ITS ORM Attachment 4, Section 1, Items #48 and #49 when in MODE 1, 2, & 3, the following valves [1VR002A(B) & 1VQ006A(B)] shall be sealed closed under administrative control to assure that they cannot be inadvertently opened.

- ☞ Obtain Shift/Assistant Shift Supervisors approval to perform the following step.

- 8.2.5.7 When Containment pressure becomes negative, open 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.
- 8.2.5.8 When Containment Purge with SGTS is no longer desired, close 1VR002A and 1VR002B, Containment Building Supply Isolation Bypass dampers.
- 8.2.5.9 Close 1VQ006A and 1VQ006B, Containment Building Exhaust Isolation Bypass dampers.
- 8.2.5.10 Close 1VG01YA(B), SGTS Trn A(B) DW Purge Isolation Damper by positioning its handswitch to NORMAL.

- c 8.2.5.11 Verify Chemistry has performed samples as required per CPS 919940.01, WEEKLY CHEMISTRY SURVEILLANCE LOG and ODCM 3.2.2/ TBL 3.4-1 ITEM B prior to shutdown.

NOTE

1VG016YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, and 1VG017YA(B), Fuel Bldg Exh Inbd (Outbd) Isol Damper, will open when the Exhaust Fan is stopped.

- 8.2.5.12 Shutdown the operating SGTS train by stopping its respective Exhaust Fan, 0VG02CA(B) by returning its control switch to AUTO.
- 8.2.5.13 Start the SGTS TRN A(B) STANDBY CLG FAN, 0VG03CA(B) per 8.2.2.1 and continue to operate the fan until such time that it has been determined that the decay heat in the charcoal absorber has decreased to the point where the Cooling Fan is no longer needed. (Refer to section 8.2.2.2 for shutting down the fan.)
- 8.2.5.14 Position 1VG02YA(B), Fuel Bldg Isolation Damper control switch to AUTO and verify 1VG04YB, Pump Rooms Suction Damper, opens (1VG04YA remains closed).
- 8.2.5.15 If desired, establish Containment Building ventilation/purge per CPS No. 3408.01, CONTAINMENT BUILDING/DRYWELL HVAC (VR, VQ).

8.3 Abnormal Operation

None

9.0 ACCEPTANCE CRITERIA

None

10.0 FINAL CONDITIONS

None

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

TASK TITLE: Startup a Steam Bypass Hydraulic Power Unit

TASK NUMBER: 041248C517

APPLICABILITY: RO X SRO X

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

METHOD OF TESTING:

Simulated Performance X Actual Performance \_\_\_\_\_

Classroom \_\_\_\_\_ Simulator \_\_\_\_\_ Plant X

APPROXIMATE TIME FOR COMPLETION: 20 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

None

**TASK STANDARDS:**

Operator actions performed per CPS No. 3105.04

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3105.04, STEAM BYPASS AND PRESSURE REGULATOR (SB)

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

A plant is currently in an outage. You are directed to start the 'A' Steam Bypass HPU for testing . The standby pump is unavailable.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

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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.

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PERFORMANCE STEPS

JPM TITLE: Startup a Steam Bypass Hydraulic Power Unit

NOTE

The following startup refers to the HPU associated with the steam bypass valves. The operation of the Steam Bypass and Pressure Regulation (SB) system will be per the plant startup/shutdown integrated 300X.01 series.

Temperature of the fluid must be  $\geq 90^{\circ}\text{F}$  before the pumps are started.

- 8.1.1 a) **IF:** Fluid temperature is  $< 90^{\circ}\text{F}$ ,  
**THEN:** Turn on space heaters 1A and/or 1B to increase fluid temperature.
- b) **IF:** Temperature is  $\geq 90^{\circ}\text{F}$ ,  
**THEN:** Verify/Place space heaters 1A and 1B in Auto.

STANDARD:

If temperature is  $< 90$ , simulates turning space heater 1A ON, if temperature is  $\geq 90$ , verifies space heaters 1A in Auto.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

NOTE

Following maintenance on the suction piping, the hydraulic pump or extended shutdown, the hydraulic pumps must be filled with oil before starting in order to prevent damage to the pumps.

- c) **IF:** This will be a startup following maintenance on the suction piping, the hydraulic pump or an extended shutdown. the

**THEN:** Perform the following steps to fill the pump(s):

- 1) Isolate and remove from service the EHC pump(s) per CPS No. 1014.01, SAFETY TAGGING.
- 2) Clean the area around the case vent connection.
- 3) Fill/verified filled the EHC pump(s) with fluid through the case vent connection located on top of the pump housing.
- 4) Re-install the case vent connection
- 5) Remove the tagout that was installed in step 1.

- \*d) **Open 1C85-FV01, Supply HDR Bypass Valve one-half turn**

STANDARD:

Simulates opening 1C85-FV01 one-half turn by turning the valve handwheel in the COUNTERCLOCKWISE direction

CUE:

The handwheel is turning

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

\*e) **START Hydraulic Pump 1A (1B) by placing control switch to RUN.**

STANDARD:

Simulates placing Hydraulic Pump 1A control switch to RUN

CUE:

Switch is in RUN

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

f) **Verify pump discharge pressure increases**

STANDARD:

Verifies pump discharge pressure increasing

CUE:

Pressure is increasing

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

g) **IF:** Motor current > 50 amps,

**THEN:** Shut slightly 1C85-FV01, Supply HDR Bypass Valve to reduce motor current amps.

STANDARD:

Checks motor current < 50 amps

CUE:

Motor current is 40 amps

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

\*h) **Pressurize system by slowly opening 1C85-FV23, Supply HDR Isol Valve, and simultaneously slowly shutting 1C85-FV01, Supply HDR Bypass Valve.**

STANDARD:

Simulates simultaneously slowly opening 1C85-FV23 and slowly shutting 1C85-FV01.

CUE:

Handwheels are turning.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

i) **IF:** Pump discharge pressure is not between 1600 - 1650 psig,

**THEN:** Adjust the compensator on the pump as necessary to maintain pressure within the band.

STANDARD:

Verifies pump discharge pressure is between 1600 - 1650 psig

CUE:

Pressure is 1625 psig

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

j) Place Control Switch for Hydraulic Pump not started in AUTO.

STANDARD:

Simulates placing the control switch for Hydraulic Pump 1B in AUTO.

CUE:

Switch is in AUTO

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

NOTE

Step k is not required if the system was started up for testing during a outage or the standby pump is unavailable.

- k) Perform Section 8.2.5 Testing Pumps Auto Start Features.

STANDARD:

No action. System was started for testing.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

NOTE

Fuller's Earth Filter System should be in operation as much as possible.

- l) If desired place the Fuller's Earth Filter in service per section 8.2.3.

STANDARD:

No action.

CUE:

The Fuller's Earth Filter system will not be put in operation.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

TERMINATING CUES:

The 'A' Steam Bypass HPU has been started for testing.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 8

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 1

The plant is operating at full power and all conditions are stable. The following changes in plant parameters are observed:

Main Generator Mwe increasing

Reactor Power increasing

Reactor Pressure increasing

Turbine Control Valves closing

RGLTR ERROR indicating light illuminated

MODULE 1(2,3) TRIPPED indicating light on 1H13-P637 illuminated

What has occurred?

**ANSWER:**

Pressure Regulator failure LOW

**REFERENCE(S):**

EHC System System Flow Path

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

The plant is operating with one of the Steam Bypass & Pressure Control pressure regulators in TEST when the remaining pressure regulator fails HIGH. Plant pressure begins to decrease due to the Bypass Valves opening. What SB&PC control can be used to close the Bypass Valves?

**ANSWER:**

Maximum Combined Flow Limiter

**REFERENCE(S):**

EHC System Signal Flow Path

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

Importance Rating

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>RO</u>	<u>SRO</u>
241000	A2.01		3.7
241000	A2.03		4.2

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

A plant is currently in an outage. You are directed to start the 'A' Steam Bypass HPU for testing . The standby pump is unavailable

- 8.0 PROCEDURE
- 8.1 Normal Operation
- 8.1.1 Startup

NOTE

The following startup refers to the HPU associated with the steam bypass valves. The operation of the Steam Bypass and Pressure Regulation (SB) system will be per the plant startup/shutdown integrated 300X.01 series.

Temperature of the fluid must be  $\geq 90^{\circ}\text{F}$  before the pumps are started.

- a) IF: Fluid temperature is  $< 90^{\circ}\text{F}$ ,
- THEN: Turn on space heaters 1A and/or 1B to increase fluid temperature.
- b) IF: Temperature is  $\geq 90^{\circ}\text{F}$ ,
- THEN: Verify/Place space heaters 1A and 1B in Auto.

NOTE

Following maintenance on the suction piping, the hydraulic pump or extended shutdown, the hydraulic pumps must be filled with oil before starting in order to prevent damage to the pumps.

- c) IF: This will be a startup following maintenance on the suction piping, the hydraulic pump or an extended shutdown.
- THEN: Perform the following steps to fill the pump(s):
- 1) Isolate and remove from service the EHC pump(s) per CPS No. 1014.01, SAFETY TAGGING.
  - 2) Clean the area around the case vent connection.
  - 3) Fill/verified filled the EHC pump(s) with fluid through the case vent connection located on top of the pump housing.
  - 4) Re-install the case vent connection.
  - 5) Remove the tagout that was installed in step 1.

8.1.1 Startup (cont'd)

- d) Open 1C85-FV01, Supply HDR Bypass Valve one-half turn.
- e) START Hydraulic Pump 1A (1B) by placing control switch to RUN.
- f) Verify pump discharge pressure increases.
- g) IF: Motor current > 50 amps,  
THEN: Shut slightly 1C85-FV01, Supply HDR Bypass Valve to reduce motor current amps.
- h) Pressurize system by slowly opening 1C85-FV23, Supply HDR Isol Valve, and simultaneously slowly shutting 1C85-FV01, Supply HDR Bypass Valve.
- i) IF: Pump discharge pressure is not between 1600 - 1650 psig,  
THEN: Adjust the compensator on the pump as necessary to maintain pressure within the band.
- j) Place Control Switch for Hydraulic Pump not started in AUTO.

NOTE

Step k is not required if the system was started up for testing during a outage or the standby pump is unavailable.

- k) Perform Section 8.2.5 Testing Pumps Auto Start Features.

NOTE

Fuller's Earth Filter System should be in operation as much as possible.

- l) If desired place the Fuller's Earth Filter in service per section 8.2.3.

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

TASK TITLE: Respond to a Failed Transponder

TASK NUMBER: 011201C529

APPLICABILITY: RO X SRO X

\_\_\_\_\_  
TRAINEE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
EVALUATOR

**METHOD OF TESTING:**

Simulated Performance X Actual Performance \_\_\_\_\_

Classroom \_\_\_\_\_ Simulator \_\_\_\_\_ Plant X

APPROXIMATE TIME FOR COMPLETION: 45 minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

**JPM NUMBER:** NRC 9

**REVISION:** 0

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.

**SIMULATOR SET-UP CONDITIONS:**

Not Applicable.

**TASK STANDARDS:**

Rod Drive bypassed, directional control valves disarmed, and RCIS reset per CPS No. 3304.02

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3304.02, ROD CONTROL AND INFORMATION SYSTEM (RCIS)

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

Control rod 20-25 in INOP due to a failed transponder card. RCIS is needed to support current plant conditions. You are directed to bypass control rod 20-25 and reset RCIS.

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

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

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**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**

JPM TITLE: Respond to a Failed Transponder

NOTE

The required position of the control rod/drive is specified in ITS LCOs 3.1.3 and 3.9.4.

Only one rod can be bypassed at a time at the RGDC.

The bypassed rod's normal drive motion is inhibited when bypassed.

- 8.2.10.1 **IF** A failed transponder card is present, and RCIS is needed to support current plant conditions/surveillances,
- THEN** To prevent inadvertent rod motion when resetting RCIS,
- a) First: Perform section 8.2.10.3 to electrically disarm the directional control valve.
  - b) Second: Perform section 8.2.10.2 to bypass the drive's transponder card & reset RCIS

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

NOTE

Electrically disarming a second INOP control rod will shut down RCIS.

8.2.10.3 To electrically disarm the directional control valves of the subsequent INOP control rods as governed by ITS LCO 3.1.3, or for Transponder Card Failures:

\*a)

**Remove the amphenol connectors, and place CAUTION TAGS on the directional control valves disconnected at the transponder card (CNMT 755') for the INOP control rod drive(s):**

- JIE (insert exhaust)
- JWE (withdraw exhaust)
- JWS (withdraw supply)
- JIS (insert supply)

STANDARD:

Simulates removing amphenol connectors JIE, JWE, JWS, and JIS. Simulates placing Caution Tags on the disconnected directional control valves.

CUE:

Amphenol connectors are removed and caution tags placed.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- b) To restore the drive when the control rod is OPERABLE: (OK to defer while continuing on in procedure):
  - 1) Clear CAUTION TAGS
  - 2) Reconnect the amphenols to the transponder card.

STANDARD:

Continues to 8.2.10.2

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

8.2.10.2 To bypass the directional control valves for the first INOP control rod, or for Transponder Card failures:

- \* a) **Locate the drive to be disarmed/bypassed on the Rod Gang Drive Cabinet (RGDC) Fault Map Legend. Transponder card failure location will have an illuminated area for the Transponder that has a fault.**

STANDARD:

Locates drive to be disarmed/bypassed on RGDC Fault Map Legend.

CUE:

After rod identified, cue that area is illuminated.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- \* b) Using the legend data on the right and bottom of the legend, identify the binary values for the drive to be disarmed/bypassed.

STANDARD:

Identifies the binary values for the drive to be disarmed/bypassed

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

- 
- \* c) On the analyzer card of the RGDC, set the ten **BYPASSED ROD IDENTITY TOGGLE SWITCHES** (1 = Switch up, 0 = Switch down) using the binary values found on the Fault Map Legend.

STANDARD:

Simulates setting toggle switches either up or down in accordance with the binary value determined from the Fault Map Legend

CUE:

Toggle switch up (or down)

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- d) Have a second licensed operator verify that the correct rod identity is selected.

STANDARD:

Requests that a second licensed operator verify the correct rod identity is selected.

CUE:

As the second licensed operator, if the correct rod identity is selected, cue that the identity is correct.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

- \* e) **Position the rod BYPASS toggle switch "up" to bypass the rod.**

STANDARD:

Simulates placing the rod BYPASS toggle switch "up"

CUE:

Switch is UP

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

f) Reset RCIS per 8.2.9.3 and 8.2.9.4

8.2.9.3 To reset RCIS

\*a) **Verify POWER GATE breaker CB2 is ON.**

If found to be OFF, then with SS/ASST.SS permission, place breaker CB2 to ON.  
System configuration may need to be checked per 5.0 Prerequisites.

STANDARD:

Verifies POWER GATE breaker CB2 is ON.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

\* b) **Depress the RGDS STATUS INOPERATIVE RESET pushbutton in 1H13-P653 until the INOPERATIVE, SCAN ERROR, and MASTER ERROR lights extinguish.**

STANDARD:

Simulates depressing RGDS Status Inoperative Reset pushbutton.

CUE:

Inoperative, scan error, and master error lights are extinguished.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- c) **IF** RCIS does not properly RESET after the initial attempt in 'b' above,  
**THEN** Wait ~ 20 seconds before trying to RESET the system a second blow.

8.2.9.4 After RCIS has been reset, perform an OD-7 Option 2 (or Option 4) and compare to previous rod position information.

STANDARD:

Requests an OD-7 Option 2

CUE:

Rod positions have been compared to previous rod position information.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

- g) Depress DRIVE BYPASSED pushbutton to display on the OCM that the correct rod was bypassed..

STANDARD:

Simulates depressing Drive Bypassed pushbutton

CUE:

OCM display indicates the correct rod.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

CAUTION

In GANG mode, selecting/moving a rod in the same gang will cause the bypassed rod to move also. If GANG mode is used for any reason extreme caution should be used to avoid moving the bypassed rod.

- h) Place CAUTION TAGS to maintain the DRIVE MODE select push-button in the "INVALID DRIVE" position, and provide information about the possible effect of using gang mode..

STANDARD:

Simulates placing Caution Tags on Drive Mode select pushbutton.

CUE:

Caution Tags are hung

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

- i) To restore the drive when the control rod is OPERABLE (OK to defer while continuing on in procedure.
  - 1) Clear CAUTION TAGS.
  - 2) At the RGDC, position the rod BYPASS toggle switch, "down" to unbypass the rod.
  - 3) On the analyzer card of the RGDG, set the ten BYPASSED ROD IDENTITY toggle switches to the "down (0) position.
  - 4) Depress DRIVE BYPASSED push-button to display on the OCM that the rod in no longer bypassed.

STANDARD:

No action required

CUE:

Drive will not be restored.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

---

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

**TERMINATING CUES:**

Control rod 20-25 is bypassed and RCIS is reset.

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



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 9

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 1

A reactor startup is in progress. During the performance of CPS No. 9014.02, ROD PATTERN CONTROL SYSTEM ROD SEQUENCE CHECK, an out of sequence control rod was selected and moved one notch. What is the effect on the reactor startup?

**ANSWER:**

The reactor startup must stop immediately due to the Rod Pattern Controller not performing its intended function. Rod movement is ONLY by scram.

**REFERENCE(S):**

CPS No. 9014.02  
CPS ITS 3.3.2.1 Action B.1

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

**THIS IS A CLOSED BOOK QUESTION  
TO BE ANSWERED PRIOR TO THE JPM**

QUESTION NO.: 2

What affect does bypassing a control rod in the Rod Gang Drive System have on the ability to move the bypassed control rod, individually and in gang mode?

**ANSWER:**

The bypassed control rod if selected will not move. (The RCIS System does not know the control rod is even there). If gang mode is selected and another control rod in the gang is selected the bypassed control rod will move with the rest of the gang.

**REFERENCE(S):**

CPS No. 3304.02

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
201005	K3.02		3.5
201005	K1.06		3.3

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

Control rod 20-25 in INOP due to a failed transponder card. RCIS is needed to support current plant conditions. You are directed to bypass control rod 20-25 and reset RCIS.

8.2.9 AUTOMATIC SYSTEM SHUTDOWN/RCIS RESET

- 8.2.9.1 If C&I is available,  
contact them for an evaluation of system shutdown.  
If C&I is not available,  
record any Red LED's that are energized at 1H13-P653, Rod  
Gang Drive Cabinet on CPS No. 3304.02F001, RCIS FAULT MAPS.  
If an MWR is written, attach the F001 form to the MWR.

NOTE

When RCIS is INOP (Annunciator 5006-3G),  
the accumulator trouble alarms are not functional.  
ORM OR 2.1.2 Action 3.3.1.a changes ITS SR 3.1.5.1/  
3.9.5.2 frequency from 7 days to every 24 hours.

- c 8.2.9.2 IF RCIS power is out and CNMT ventilation is secured  
(e.g., during an outage) concurrently for > 8 hours,  
  
THEN Contact C&I to inspect at least 10% of the  
BJMs for moisture prior to resetting RCIS.

CAUTION

Do not reset the RCIS INOP if a failed transponder  
card is known or suspected, unless the rod has been  
disarmed & bypassed per 8.2.10.1.  
Inadvertent rod motion may occur otherwise.

- 8.2.9.3 To reset RCIS:
- a) Verify POWER GATE breaker CB2 is ON.  
If found to be OFF, then with SS/ASST.SS permission,  
place breaker CB2 to ON. System configuration may need  
to be checked per 5.0 Prerequisites.
  - b) Depress the RGDS STATUS INOPERATIVE RESET push-button  
in 1H13-P653 until the INOPERATIVE, SCAN ERROR, and  
MASTER ERROR lights extinguish.
  - c) IF RCIS does not properly RESET after  
the initial attempt in 'b' above,  
  
THEN Wait ~ 20 seconds before trying to RESET the  
system a second time. Failure to wait may  
cause fuse in UPS circuit 903 to blow.
- 8.2.9.4 After RCIS has been reset, perform an OD-7 Option 2 (or  
Option 4) and compare to previous rod position information.

NOTE

The required position of the control rod/drive is specified in ITS LCOs 3.1.3 and 3.9.4.

Only one rod can be bypassed at a time at the RGDC. The bypassed rod's normal drive motion is inhibited when bypassed.

8.2.10 ROD DRIVE BYPASS/DISARMING DIRECTIONAL CONTROL VALVES

- 8.2.10.1 IF A failed transponder card is present, and RCIS is needed to support current plant conditions/surveillances,
- THEN To prevent inadvertent rod motion when resetting RCIS,
- a) First: Perform section 8.2.10.3 to electrically disarm the directional control valve.
  - b) Second: Perform section 8.2.10.2 to bypass the drive's transponder card & reset RCIS.

- 8.2.10.2 To bypass the directional control valves for the first INOP control rod, or for Transponder Card failures:
- a) Locate the drive to be disarmed/bypassed on the Rod Gang Drive Cabinet (RGDC) Fault Map Legend. Transponder card failure location will have an illuminated area for the Transponder that has a Fault.
  - b) Using the legend data on the right and bottom of the legend, identify the binary values for the drive to be disarmed/bypassed.
  - c) On the analyzer card of the RGDC, set the ten BYPASSED ROD IDENTITY toggle switches (1 = Switch up, 0 = Switch down) using the binary values found on the Fault Map Legend.
  - d) Have a second licensed operator verify that the correct rod identity is selected.
  - e) Position the rod BYPASS toggle switch "up" to bypass the rod.
  - f) Reset RCIS per 8.2.9.3 and 8.2.9.4.
  - g) Depress DRIVE BYPASSED push-button to display on the OCM that the correct rod was bypassed.

(☞ more)

8.2.10 ROD DRIVE BYPASS/DISARMING DIRECTIONAL CONTROL VALVES  
(cont'd)CAUTION

In GANG mode, selecting/moving a rod in the same gang will cause the bypassed rod to move also. If GANG mode is used for any reason extreme caution should be used to avoid moving the bypassed rod.

- 8.2.10.2 h) Place CAUTION TAGS to maintain the DRIVE MODE select push-button in the "INDIVID DRIVE" position, and provide information about the possible effect of using gang mode.
- (cont'd)
- i) To restore the drive when the control rod is OPERABLE (OK to defer while continuing on in procedure):
- 1) Clear CAUTION TAGS.
  - 2) At the RGDC, position the rod BYPASS toggle switch "down" to unbypass the rod.
  - 3) On the analyzer card of the RGDG, set the ten BYPASSED ROD IDENTITY toggle switches to the "down" (0) position.
  - 4) Depress DRIVE BYPASSED push-button to display on the OCM that the rod is no longer bypassed..

NOTE

Electrically disarming a second INOP control rod will shut down RCIS.

- 8.2.10.3 To electrically disarm the directional control valves of the subsequent INOP control rods as governed by ITS LCO 3.1.3, or for Transponder Card failures:
- a) Remove the amphenol connectors, and place CAUTION TAGS on the directional control valves disconnected at the transponder card (CNMT 755') for the INOP control rod drive(s):
- JIE (insert exhaust)
  - JWE (withdraw exhaust)
  - JWS (withdraw supply)
  - JIS (insert supply)
- b) To restore the drive when the control rod is OPERABLE: (OK to defer while continuing on in procedure):
- 1) Clear CAUTION TAGS.
  - 2) Reconnect the amphenols to the transponder card.



CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

TASK TITLE: Respond To Abnormal Level in CCW Expansion Tank

TASK NUMBER: 044208C505

APPLICABILITY: RO X SRO X

\_\_\_\_\_  
**TRAINEE**

\_\_\_\_\_  
**DATE**

\_\_\_\_\_  
**EVALUATOR**

**METHOD OF TESTING:**

Simulated Performance   X   Actual Performance \_\_\_\_\_

Classroom \_\_\_\_\_ Simulator \_\_\_\_\_ Plant   X  

**APPROXIMATE TIME FOR COMPLETION:** \_\_\_ minutes

Prepared/Revised by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Instructor - Operations

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor - Operations Training

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

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.

**SIMULATOR SET-UP CONDITIONS:**

None

**TASK STANDARDS:**

Operator actions performed per CPS No. 3203.01

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

None

**PROCEDURAL/REFERENCES:**

CPS No. 3203.01, COMPONENT COOLING WATER (CC)

**EVALUATOR INSTRUCTIONS:**

Amplifying cues are provided within the JPM steps.

**INITIAL CONDITIONS AND INITIATING CUE:**

There is a high level in the CCW Expansion Tank. The source of the in-leakage has been isolated. Return CCW Expansion Tank level to normal.

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

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JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

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**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.

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**PERFORMANCE STEPS**

JPM TITLE: Respond To Abnormal Level in CCW Expansion Tank

\*8.2.2.2..1 **Verify 1CC90, CCW Expansion Tank Makeup Valve, is isolated** and 1CC092, CCW Expansion Tank Makeup Valve Bypass, is shut.

STANDARD:

Verifies 1CC90 isolated by simulating turning valve handwheels for 1CC089 and 1CC091 in a CLOCKWISE direction. Verifies 1CC092 shut by simulating turning valve handwheel in a CLOCKWISE direction.

CUE:

For each valve operated, cue that the valve handwheel is turning, then cue the valve handwheel stops turning.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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JPM NUMBER: NRC 10

REVISION: 0

8.2.2.2.2 Notify Radiation Protection to check valve lineups on 1RIX-PR037, 1RIX-PR004, and 1RIX-PR005, if source of inleakage unknown.

STANDARD:

No action. Initial Conditions had the source isolated.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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NOTE

If necessary, place alternate system load on service, whenever possible.

8.2.2.2.3 If source of inleakage is unknown, isolate CCW to the system loads one at a time to determine the source of inleakage. See Appendix A, CCW SYSTEM LOADS.

STANDARD:

No action. Initial Conditions had the source isolated.

CUE:

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

NOTE

When the source of inleakage is isolated, the CCW Expansion Tank level should stabilize.

\*8.2.2.2.4 Lower CCW Expansion Tank level as follows:

a) **Open 1TE083, CCW Exp Tank Drain**

b) **Throttle open 1CC253, CCW Expansion Tank Auto Drain Valve to lower level to 105" to 117"**

STANDARD:

Simulates OPENING 1TE083 by turning handwheel in the COUNTERCLOCKWISE direction.  
Simulates throttling OPEN 1CC253 by turning handwheel in the COUNTERCLOCKWISE direction.

CUE:

For each valve operated, cue that the valve handwheel is turning. For 1TE083, cue the valve handwheel stops turning.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

\*8.2.2.2.5 When desired level is reached

a) Close 1CC253, CCW Expansion Tank Auto Drain Valve

b) Close 1TE083, CCW Exp Tk Drain

STANDARD:

After receiving cue that level is 115", simulates closing 1CC253 and 1TE083 by turning valve handwheels in the CLOCKWISE direction.

CUE:

As examinee monitors expansion tank level, cue that level is 115".  
For each valve operated, cue that the valve handwheel is turning then the valve handwheel has stopped.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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8.2.2.2.6 Check pump suction pressure, adjust per 8.1.1.1.b, if necessary.

STANDARD:

Checks pump suction pressure and determines that no adjustment is necessary.

CUE:

COMMENTS:

Pump suction pressure should be approximately 14 psig.

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

8.2.2.2.7 If possible, leave the component that is the source of inleakage off service and isolated, until it is repaired.

STANDARD:

No action.

CUE:

The component will be left isolated until repaired.

COMMENTS:

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

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CLINTON POWER STATION

JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

TERMINATING CUES:

CCW Expansion Tank level has been returned to normal.

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



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JOB PERFORMANCE MEASURE WORKSHEET

JPM NUMBER: NRC 10

REVISION: 0

K/A REFERENCE NUMBERS

Importance Rating

K/A SYSTEM NUMBER

K/A NUMBER

RO

SRO

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 1

The plant was at 100% power when main condenser vacuum began to decrease due to air in-leakage. CCW Heat Exchanger temperature regulating valves are also malfunctioning causing CCW temperature to increase. As CCW temperature continues to increase, what option will be available for LONG TERM RPV pressure control?

**ANSWER:**

Only SRVs on compressed gas will be available

**REFERENCE(S):**

CPS No. 4004.01

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION

JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

QUESTION NO.: 2

The plant was at 100% power when 4.16 KV Bus 1B locked out due to an overcurrent condition. The loss of the 4.16 Bus 1B results in a trip of the reactor feed pumps with the resulting level transient. Level decreases below level 2 before recovering. Based on this transients effect on Component Cooling Water (CC), what system/component loss will occur if NO operator action is taken?

**ANSWER:**

Trip of the running Service Air Compressor.

**REFERENCE(S):**

CPS No. 5041.01-1A

**RESPONSE:**

SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
QUESTION DOCUMENTATION

<u>K/A SYSTEM NUMBER</u>	<u>K/A NUMBER</u>	<u>Importance Rating</u>	
		<u>RO</u>	<u>SRO</u>
400000	K3.01		3.3
400000	A2.01		3.4

JTA:

TASK NUMBER

ANSWER TIME:    Min

ORIGINATED/REVISED BY: \_\_\_\_\_ / \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ / \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ / \_\_\_\_\_

Supervisor - Requalification and  
Operations Training

CLINTON POWER STATION  
JOB PERFORMANCE MEASURE  
OPERATOR COPY

INITIATING CUE

There is a high level in the CCW Expansion Tank. The source of the in-leakage has been isolated.  
Return CCW Expansion Tank level to normal.

8.2.2.2 High Level in CCW Expansion Tank

- 8.2.2.2.1 Verify 1CC090, CCW Expansion Tank Makeup Valve, is isolated and 1CC092, CCW Expansion Tank Makeup Valve Bypass, is SHUT.
- 8.2.2.2.2 Notify Radiation Protection to check valve lineups on 1RIX-PR037, 1RIX-PR004, and 1RIX-PR005, if source of inleakage unknown.

NOTE

If necessary, place alternate system load on service, whenever possible.

- 8.2.2.2.3 If source of inleakage is unknown, isolate CCW to the system loads one at a time to determine the source of inleakage. See Appendix A, CCW SYSTEM LOADS.

NOTE

When the source of inleakage is isolated, the CCW Expansion Tank level should stabilize.

- 8.2.2.2.4 Lower CCW Expansion Tank level as follows:
- a) Open 1TE083, CCW Exp Tk Drain
  - b) Throttle open 1CC253, CCW Expansion Tank Auto Drain Valve to lower level to 105" to 117".
- 8.2.2.2.5 When desired level is reached
- a) Close 1CC253, CCW Expansion Tank Auto Drain Valve.
  - b) Close 1TE083, CCW Exp Tk Drain
- 8.2.2.2.6 Check pump suction pressure, adjust per 8.1.1.1.b, if necessary.
- 8.2.2.2.7 If possible, leave the component that is the source of inleakage off service and isolated, until it is repaired.

8.2.3 Containment Isolation/Recovery

- 8.2.3.1 For operation of the components inside the containment without CCW flow, refer to the following:
- a) Reactor Recirculation Pumps, CPS No. 3302.01, REACTOR RECIRCULATION (RR), (8.3.4).
  - b) Reactor Water Cleanup System, CPS No. 3303.01, REACTOR WATER CLEANUP (RT), (8.3.3).