NMC Committed to Nuclear Excellence	JOB PERFORMANCE MEASURE (JPM)

SITE: MONTICELLO NUCLEAR GENERATING PLANT

JPM TITLE: SHUTDOWN OF HPCI SYSTEM WHEN AUTO INITIATION SIGNALS ARE NOT PRESENT

JPM NUMBER: JPM-B.03.02-001 **REV.** 11

RELATED PRA INFORMATION: None

TASK NUMBERS / TASK TITLE(S): CR206.119
Shutdown Of HPCI System When Auto Initiating Signals Are Not Present

K/A NUMBERS: 206000 HPCI Ability to manually operate and/or monitor in the control room: **Rating: RO/SRO:** 4.0/3.8 3.7/3.7
A4.02 Flow Controller
A4.04 Major system valves

APPLICABLE METHOD OF TESTING:

Discussion: [ ] Simulate/walkthrough: [ ] Perform: [X]

EVALUATION LOCATION: In-Plant: [ ] Control Room: [ ]
Simulator: [X] Other: [ ]
Lab: [ ]

Time for Completion: 15 Minutes Time Critical: No

Alternate Path: No

TASK APPLICABILITY: SRO: [X] RO: [X] NLO [ ]

Additional site-specific signatures may be added as desired.

Developed by:	Developer	Date
Validated by:	Validator (See JPM Validation Checklist, Attachment 1)	Date
Approved by:	Training Supervisor	Date

Retention: Life of Plant
Retain in: Training Record
Form retained in accordance with record retention schedule identified in FP-G-RM-01.

JPM Number: JPM-B.03.02-001

JPM Title: Shutdown Of HPCI System When Auto Initiation Signals Are Not Present

Examinee: _____ **Evaluator:** _____

Job Title: _____ **Date:** _____

Start Time _____ **Finish Time** _____

PERFORMANCE RESULTS: **SAT:** ☐ **UNSAT:** ☐

COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).

EVALUATOR'S SIGNATURE: _____

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

Retention: Life of Plant
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(Modify text in Briefing/Turnover Box as necessary)

JPM BRIEFING/TURNOVER
Add required site specific JPM briefing material here: for example: *This section is read once for the entire package of JPMs. It is not required to review this section for every JPM being performed in the package. The initial conditions and initiating cue(s)/tasks to be performed should be read and then provided to the examinee.* *You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.* *EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.* *If this JPM is performed on the simulator, the JPM administrator should only give cues that are NOT indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should NOT have to give a cue to the trainee to continue the evolution.*

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Following a plant transient RPV water level temporarily dropped to below the Low-Low Level setpoint . The plant responded normally with all appropriate automatic actions, including a reactor scram, containment isolations, and ECCS initiations. Following the initial HPCI automatic initiation and after the RPV level was recovered, HPCI was realigned to control reactor pressure.
- It has now been several hours since the event. RCIC is being used to control RPV water level and pressure. HPCI is no longer needed to control reactor pressure or water level.

INITIATING CUES (IF APPLICABLE):

- The Control Room Supervisor directs you to shutdown the HPCI System per the appropriate Ops Manual procedure.

INFORM EVALUATOR WHEN YOU HAVE COMPLETED THE TASK.

JPM PERFORMANCE INFORMATION

Required Materials: Simulator
Complete copy of B.03.02-05 to issue to trainee

General References: B.03.02.05, Rev 35, (HPCI)
NX-63609 Siemens "Moore" 353 Controller Manual UM353-1

Task Standards: B.03.02-05, F.1 (Shutdown Of HPCI System When Auto Initiation Signals Are Not Present)

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

IMPORTANT: Critical steps are marked with a "Y" below the performance step number. Failure to meet the standard for any critical step SHALL result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

Start Time: _____

Performance Step: 1 **Critical: N**	Locate procedure B.03.02-05 Section F.1 (Shutdown Of HPCI System When Auto Initiation Signals Are Not Present).
Standard:	Trainee locates procedure B.03.02-05, F.1 (Shutdown Of HPCI System When Auto Initiation Signals Are Not Present).
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 2 **Critical: N**	**NOTE: STEP 1 ensures that HPCI Turbine Aux Oil Pump will automatically start and provide lubrication as the turbine coasts down.** Procedure Step 1 Place 23A-S17, HPCI Turb Aux Oil Pump Hand Switch, in RUN.
Standard:	Places the HPCI auxiliary oil pump handswitch HS-23A-S17 in RUN.
Evaluator Note:	Pump will NOT start until HPCI turbine is shutdown.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 3 **Critical: N**	Procedure Step 2 Place 23A-S18, HPCI Turb Gland Seal Cond Blower Hand Switch, in RUN.
Standard:	Verifies the HPCI gland seal condenser blower handswitch HS-23A-S18 is in RUN.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 4 **Critical: N**	Procedure Step 3 Reset system logic by depressing the following pushbuttons: a. 23A-S21, HPCI Initiation Reset. b. 23A-S26, Test Return Valve Isolation Reset.
Standard:	Resets the HPCI system logic by depressing: a. 23A-S21 Initiation Reset. b. 23A-S26 Test Return Valve Isolation Reset pushbutton.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 5 **Critical: N**	Procedure Step 4 If required, evaluate Tech Spec 3.5.1 for HPCI inoperable, And enter applicable Condition.
Standard:	Informs CRS that TS 3.5.1 should be evaluated.
Evaluator Cue:	• Acknowledge trainee's statement to CRS. • Inform trainee that HPCI has been declared inoperable • LCO briefing has been completed. • Continue to realign HPCI and to inform "me (CRS)" when complete.
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 6 **Critical: N**	**CAUTION** **Operating turbine speeds below 2150 rpm could result in inadequate oil pressure and flow.** Procedure Step 5 Reduce flow to 2300 gpm or minimum flow achievable with a minimum turbine speed of 2150 rpm by adjusting the flow controller (FIC-23-108) setpoint.
Standard:	Reduces flow to 2300 gpm by adjusting setpoint on flow controller FIC-23-108 while ensuring turbine rpm does NOT decrease below 2150.
Evaluator Note:	Operations Dept. expectation is to reduce flow to 2300 gpm if possible, but no less than 2300 gpm. If turbine rpm decreases to 2150 then flow reduction should be stopped at something higher than 2300 gpm.
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 7 **Critical: N**	Procedure Step 6 Place 23A-S10, CV-2065 HPCI Min Flow Hand Switch, in OPEN position to prevent pressurization of pump suction line.
Standard:	Verifies HS-23A-S10 is in OPEN position.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 8 **Critical: Y**	Procedure Step 7 **<u>NOTE</u>: The MO-2036 valve must be fully closed before the TURBINE TRIP pushbutton can be released.** Depress and hold pushbutton 23A-S22, HPCI Turbine Trip, <u>Then</u> perform the following in order: a. CLOSE valve MO-2036, HPCI Turbine Steam Supply. b. Verify HPCI turbine has stopped rolling. c. STOP HPCI Turb Aux Oil Pump. d. Wait approximately 5 seconds. e. Release HPCI Turbine Trip pushbutton 23A-S22.
Standard:	1. Depresses and holds the TURBINE TRIP pushbutton 23A-S22, **<u>While</u>** 2. Closing HPCI Turbine Steam Supply valve MO-2036 until it indicates full closed **(<u>Non-Critical portion of Standard</u>)** Continues to depress and hold 23A-S22 <u>While</u> 1. Turbine speed decreases to zero rpm. 2. Placing Aux oil pump HS-23A-S17 in AUTO. 3. Waiting approximately 5 seconds before releasing.
Evaluator Note:	**To stop the HPCI Aux Oil Pump, the operator may place the handswitch in AUTO or STOP (spring returns to AUTO). If taken to STOP it will cause annunciator 3-B-5 HPCI OIL PUMP AUX MAN-OVERRIDE. This alarm should be cleared before continuing but is <u>NOT</u> part of this Critical Step.**
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 9 **Critical: Y**	Procedure Step 8 CLOSE the following valves: a. MO-2067, HPCI Disch Otbd Isol b. MO-2068, HPCI Disch Inbd Isol
Standard:	1. Closes the Pump Discharge Outboard Isolation Valve MO-2067 2. Verifies Pump Discharge Inboard Isolation Valve, MO-2068 is closed.
Evaluator Note:	**MO-2068 should already be closed due to HPCI being in pressure control mode of operation. B.03.02-05 Part B 6.d**
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 10 **Critical: Y**	Procedure Step 9 If HPCI was being used in Pressure or Level Control mode, Then perform the following: 1. CLOSE valve CV-3503, HPCI Test Return Flow. 2. CLOSE valve MO-2071, HPCI Test Return Isolation.
Standard:	1. Closes CV-3503, Test Return Flow, using MLS-3503. 2. Closes MO-2071, Test Return Isolation Valve, using HS-23A-S8.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Deleted: : N

Performance Step: 11 **Critical: N**	Procedure Step 10 Verify AO-23-18, HPCI Injection Testable Ckv, disc is closed.
Standard:	Verifies AO-23-18 green valve position indication light is ON.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 12 **Critical: N**	Procedure Step 11 Verify valves CV-2046A and CV-2046B, Steam Line Drn to Main Cdsr, are open.
Standard:	Verifies CV-2046A and CV-2046B open by observing their respective red position indication lights ON.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 13 **Critical: Y**	Procedure Step 12 Place Flow Controller (FIC-23-108) in AUTO And setpoint to 3000 gpm.
Standard:	Places or Verifies Flow Controller FIC-23-108 is in AUTO with setpoint adjusted to 3000 gpm.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Deleted: : N

Performance Step: 14 **Critical: N**	Procedure Step 13 Place 23A-S10, CV-2065, in AUTO.
Standard:	Places HS-23A-S10, CV-2065 in the AUTO position.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 15 **Critical: N**	Procedure Step 14 Place 23A-S17, HPCI Turbine Aux Oil Pump Hand Switch, in AUTO.
Standard:	Verifies that the Auxiliary Oil Pump Hand Switch HS-23A-S17 in AUTO.
Evaluator Cue:	None
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 16 **Critical: N**	Procedure Step 15 <u>When</u> 15 minutes have elapsed after depressing HPCI Turbine Trip pushbutton, <u>Then</u> perform the following: a. STOP HPCI Turbine Gland Seal Condenser Blower. b. Place 23A-S18, HPCI Turb Gland Cond Blower Hand Sw, in AUTO
Standard:	Observes that 15 minutes have passed and then Places the HPCI Turbine Gland Seal Condenser Blower Sw to STOP and then releases it to AUTO
Evaluator Cue:	**Instruct Candidate that 15 Minutes have elapsed after turbine trip.**
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Performance Step: 18 **Critical: N**	Procedure Step 16 Independently verify HPCI in standby readiness.
Standard:	Operator informs evaluator that independent verification is required.
Evaluator Cue:	• Acknowledge the need for independent verification\ • State that the task is complete and the JPM is terminated. • Record Stop Time
Performance:	**SATISFACTORY** ☐ **UNSATISFACTORY** ☐
Comments:	

Terminating Cues: See Evaluator Cue in Performance Step 18

Stop Time: _____

Historical Record: MNGP JPM Bank
Editorial changes for 2009 NRC Exam

SIMULATOR SET UP: (*Modify table as necessary)*

Simulator Setup Instructions:

- Place the simulator in a configuration matching the initial conditions for the JPM.
- IC-288 for 2009 NRC Exam
- Following a HPCI auto initiation the following must be done to put it into pressure control mode:
    - Verify HPCI suction aligned to CSTs.
    - Verify OPEN MO-2071, HPCI Test Return (use test return pushbutton to open)
    - Verify Torus level is approximately 0 inches
    - Verify RCIC is in service.
    - Set CV-3503 to approximately 47%.
    - Close MO-2068, THEN quickly adjust CV-3503 as required to reduce pump discharge pressure to <200 psi above reactor pressure.

These manual manipulations are located in Operations Manual B.03.02-05 (HPCI) Section G "Special Procedures" Section 1. Reactor Vessel Pressure or Level Control, PART B HPCI in Service, STEP 6 (revision 28).
The simulator instructor should control water level as necessary to prevent level from reaching -48 or +48 inches.

SIMULATOR - MALFUNCTIONS:

	MALF ID	MALFUNCTION TITLE	DELAY	RAMP	EVENT	VALUE	FINAL
1.							
2.							
3.							

SIMULATOR - REMOTE FUNCTIONS:

	REMOTE FUNC. No.	REMOTE FUNCTION TITLE	DELAY	RAMP	EVENT	VALUE	FINAL
1.						*	*
2.						*	*
* Set for current weather condition							

SIMULATOR - OVERRIDES:

	OVERRIDE ID.	OVERRIDE DESCRIPTION	DELAY	RAMP	EVENT	VALUE	FINAL
1.							
2.							
3.							
4.							
5.							

Retention: Life of Plant
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TURNOVER SHEET

INITIAL CONDITIONS:

- Following a plant transient RPV water level temporarily dropped to below the Low-Low Level setpoint. The plant responded normally with all appropriate automatic actions, including a reactor scram, containment isolations, and ECCS initiations. Following the initial HPCI automatic initiation and after the RPV level was recovered, HPCI was realigned to control reactor pressure.
- It has now been several hours since the event. RCIC is being used to control RPV water level and pressure. HPCI is no longer needed to control reactor pressure or water level.

INITIATING CUES (IF APPLICABLE):

- The Control Room Supervisor directs you to shutdown the HPCI System per the appropriate Ops Manual procedure.

- **INFORM EVALUATOR WHEN YOU HAVE COMPLETED THE TASK.**

ATTACHMENT 1

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	☐	☐	
2. Has the JPM been reviewed and validated by SMEs?	☐	☐	☐
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	☐	☐	☐
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	☐	☐	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	☐	☐	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	☐	☐	☐
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	☐	☐	☐
8. Is the Licensee level appropriate for the task being evaluated if required? NOT applicable to Non-Licensed Operators	☐	☐	☐
9. Is the K/A appropriate to the task and to the licensee level if required? NOT applicable to Non-Licensed Operators	☐	☐	☐
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	☐	☐	
11. Have all special tools and equipment needed to perform the task been identified?	☐	☐	
12. Are all references identified, current, and accurate?	☐	☐	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	☐	☐	

All applicable questions must be answered "YES" or the JPM is NOT valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

_____	_____
Validation Personnel /Date	Validation Personnel/Date
_____	_____
Validation Personnel /Date	Validation Personnel/Date
_____	_____
Validation Personnel /Date	Validation Personnel/Date
_____	_____
Validation Personnel /Date	Validation Personnel/Date

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To be able to use the macros, after opening Word go to: Tools/Macro/Security and set the security level at either Low or Medium, close completely out of Word and reopen Word to activate Macros. If you are concerned with macro viruses, check with your site to be assured of active virus scanning.

Buttons	Results from pressing toolbar buttons
	Update JPM Information - Runs the macro for inputting information into the cover sheet. [Note: - The JPM Title and Number is automatically added to the top of the second page by the use of Cross Reference fields.]
	Add JPM Step - Adds a Performance Step table at the end of that section, prior to the 'Terminating Cues:'.
	Insert JPM Step - Inserts a Performance Step table in front of an existing Performance Step table. [NOTE: - You must have your cursor inside a Performance Step table, otherwise; you will get an error message if your cursor is anywhere else.]
	Critical Step - Toggles the Performance Step to 'Critical'. Removes **all** of the text to the right of the words '**Critical**' and replaces them with the text string ' **Y (SEQ-)**'. The cursor is placed between the '**-**' and the '**)**', to allow you to insert the sequence number for the performance step. [NOTE - You must have your cursor inside the Performance Step table you want to make into a critical step otherwise you get an error message.]
	Non-Critical Step - Toggles the Performance Step to 'Non-Critical'. Removes **all** of the text to the right of the words '**Critical**' and replaces them with the text string ' **N (SEQ-)**'. The cursor is placed between the '**-**' and the '**)**', to allow you to insert the sequence number for the performance step. [NOTE - You must have your cursor inside the Performance Step table you want to make into a non-critical step otherwise you get an error message.]
	Evaluator Note - Adds a row to the Performance Step table under the '**Standard:**' line, to allow you to enter any notes for the Evaluator.
	Remove Evaluator Note - Removes the '**Evaluator Note:**' line if it was added to the Performance Step table. [NOTE - You must have your cursor inside the Performance Step you want to remove the Evaluator Note from otherwise it removes two lines from the table above the cursor.]
	Evaluator Cue - Adds a row to the Performance Step table above the '**Performance:**' line, to allow you to enter any cues for the Evaluator.
	Remove Evaluator Cue - Removes the '**Evaluator Cue:**' line if it was added to the Performance Step table. [NOTE - You must have your cursor inside the Performance Step you want to remove the Evaluator Cue from otherwise it removes two lines from the table above the cursor.]
	Simulator Setup Page - Adds a Simulator Setup page near the end.
	Remove Simulator Setup Page - Removes the inserted Simulator Setup page.
	Update Turnover Sheet - Takes the turnover information from page 3 (JPM Briefing / Turnover page) and updates the Trainee's version of the turnover page, located prior to Attachment 1 (the last page of the JPM).
	Not For Exam Use - Places a shaded Word Art text box diagonally across the first page. To remove the text, place your cursor near the top right side of the coversheet and select the Word Art text and delete.

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