

## Job Performance Measure

### **CONTROL ROD EXERCISE – ROD OVERTRAVEL ABOVE 10% POWER (AP)**

JPM Number: S-N-a

Revision Number: 04

Date: 11/18

Developed By:

\_\_\_\_\_

Exam Author

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Facility Representative

\_\_\_\_\_

Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure   DOS 0300-01   Rev:   61    
 Procedure   DOA 0300-05   Rev:   31    
 Procedure   DOA 0300-12   Rev:   20
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

## **Revision Record (Summary)**

<b>Revision 03</b>	Bank JPM
<b>Revision 04</b>	Updated for 2019 ILT NRC Exam

## **SIMULATOR SETUP INSTRUCTIONS**

1. Reset the simulator to any IC (IC 216 was used for validation) which allows establishing the following:
  2. Reactor power greater than 10%.
  3. Control Rod F-15 is at position 48.
4. Verify NO Control Rods are selected.
5. Place the RWM Mode switch in the BYP position.
6. Run CAEP S-0300-06.cae
  - a. If the CAEP file does not load properly then insert the following expert command: imf rodf15uc (control rod F-15 uncoupled)
7. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs using the JPM Validation Checklist.
8. This completes the setup for this JPM.

**NOTE:** The Simulator operator must be ready to delete malfunction “rodf15uc” when directed by the Evaluator.

## **DOCUMENT PREPARATION**

Markup a copy of DOS 0300-01, CONTROL ROD EXERCISE, as follows:

- Mark ALL Prerequisites complete EXCEPT step E.2 (The Rod Exercise function of the Rod Worth Minimizer is enabled). Mark step E.2 NA.
- Mark Unit as “2” on Checklist 1.
- Mark “NO” for Stall Flows and Drive Water Pressure required on Checklist 1.
- Mark all rods Except F-15 N/A on Checklist 1.
- Print out 2 copies of a Control Rod position scan after the simulator has been setup. Designate one as the “before exercising” copy and the other as the “after exercising” copy.

Have un-marked copies of the following procedures ready to handout:

- DOA 0300-05, INOPERABLE OR FAILED CONTROL ROD DRIVE
- DOA 0300-12, MISPOSITIONED CONTROL ROD

**CAEP File**

```
# S-0300-06.cae  
# Written by: DSS  
# Date: 01/18
```

```
## Setup for JPM S-0300-06, Control Rod Exercise – Rod Overtravel above 10% Power ##
```

```
# Inserts uncoupled malfunction for control rod F-15  
imf rodf15uc
```

```
# Event Trigger 11 setup to recouple rod  
trgset 11 "rdzactls(173) .lt. 143"
```

```
# Event Trigger 12 works with Trigger 11 and setup to recouple rod  
trgset 12 "et_array(11) .and. rdzactls(173) .gt. 143"
```

```
# Event Trigger 13 works with Trigger 12 and the Rod Move Switch is taken to Rod-in or the RONOR switch is  
taken to Emergency Rod In  
trgset 13 "et_array(12) .and. (hwrds302in .or. hwrds303em)"  
trg 13 "dmf rodf15uc"
```

```
# END
```

**INITIAL CONDITIONS**

1. The CRD System engineer has requested exercising Control Rod F-15.
2. The RWM is unavailable and is bypassed.
3. Attachment A is not required.
4. Prerequisites have been completed.

**INITIATING CUE**

1. The Unit Supervisor directs you to perform DOS 0300-01, Control Rod Exercise, for Control Rod F-15 ONLY.
2. Stall flow and drive pressure are NOT required.
3. Inform the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will exercise a control rod and identify that the rod is uncoupled. Then using DOA 0300-05, INOPERABLE OR FAILED CONTROL ROD DRIVES, recouple the rod then return it to its original position.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>Cue</b>	Provide the Examinee the included copy of DOS 0300-01. If the examinee decides to review DOA 0300-05 and DOA 0300-12 prior to starting, they will need to review them in the Simulator books.				
1.	Obtain initial Control Rod position information.	At any NSO Process Computer Display, navigate to and print the Rod Monitoring display.	___	___	___
<b>Note</b>	Although not a procedure step a second verifier is required. Second Verifier Duties are to: <ul style="list-style-type: none"> <li>➤ Verify proper rod selected</li> <li>➤ Verify Insert and Withdraw limits understood.</li> <li>➤ Check off each control rod movement on the CRD Exercise Checklist.</li> </ul>				
2.	Request a second verifier	VERIFIES second verifier available.	___	___	___
<b>Cue</b>	Inform examinee that you will perform duties of second verifier. You will repeat back exactly what is said, <b>DO NOT</b> lead the student.				
3.	Determine that Step I.7 is the correct step to perform.	Due to rod to be tested is at position 48, determines that step I.7 of DOS 0300-01 is the correct step.	___	___	___
<b>Note</b>	If inserted past position 46, performs DOA 0300-12. Evaluator will have to determine if proper steps are followed based on current conditions.				
*4.	Select Control Rod F-15.	Depresses Select Pushbutton for Control Rod F-15.	___	___	___
*5.	Inserts Control Rod one notch <u>AND</u> verify latched.	<ul style="list-style-type: none"> <li>• Momentarily places Rod Movement Control switch to Rod In.</li> <li>• Verifies Control Rod F-15 latches at position 46.</li> </ul>	___	___	___
6.	Verify indicated control rod position changes during movement.	Monitors rod position changes to 46 on Four Rod and/or Full Core display.	___	___	___
<b>BEGIN ALTERNATE PATH</b>					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*7.	While returning the control rod to position 48, perform the following: Apply continuous withdraw signal utilizing the Rod Out Notch Override switch.	Simultaneously holds... <ul style="list-style-type: none"> <li>Rod Movement Control Switch to Rod Notch Out</li> <li>Rod Out Notch Override Switch to Notch Out Override</li> </ul>	___	___	___
8.	Verify indicated control rod position changes during movement.	Monitors rod position changes to 48 on Four Rod and/or Full Core display.	___	___	___
9.	Verify control rod does <u>NOT</u> go to the overtravel position.	Determines control rod overtravelled: <ul style="list-style-type: none"> <li>Loss of position indication.</li> <li>Alarm 902-5 E-3, Rod Overtravel.</li> <li>Alarm 902-5 A-3, Rod Drift.</li> </ul>	___	___	___
*10.	Removes continuous withdraw signal.	Releases: <ul style="list-style-type: none"> <li>Rod Movement Control Switch</li> <li>Rod Out Notch Override Switch</li> </ul>	___	___	___
11.	Notifies US that Control Rod F-15 overtravelled and DOA 0300-05 entry is required.	Notifies US that Control Rod F-15 overtravelled and DOA 0300-05 entry is required.	___	___	___
<b>Cue</b>	Acknowledge report and direct examinee to continue with required procedure actions (perform DOA 0300-05).				
12.	Enters DOA 0300-05, Inoperable Or Failed Control Rod Drive.	With Rod Overtravel symptom, enters DOA 0300-05; OR, DAN 902-5, E-3 directs entering DOA 0300-05.	___	___	___
<b>Note</b>	Provide the Examinee the included copy of DOA 0300-05. The procedure allows up to 4 times to attempt to re-couple the rod. The rod will re-couple on the first attempt.				
<b>Cue</b>	If asked as the Unit Supervisor how many times to attempt to re-couple the rod. Respond "attempt to re-couple the rod as many times as allowed by procedure".				
13.	Determines step D.3.b of DOA 0300-05 is the correct step to perform.	Identifies that with RX power >10%, step D.3.b is the correct step to perform. Examinee should reset panel alarms once condition clears and alarms are referenced.	___	___	___



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
14.	Per DOA 0300-05 step D.3.b: Verify drive water pressure is normal (250 to 280 psid).	Verifies DPI 2-340-4 indicates between 250 to 280 psid. (Adjusts MO 2-302-8 if necessary)	___	___	___
<b>Note</b>	The first single notch insert moves the control rod from the overtravel position to position 48. The rod may go to position 46 on first move.				
15.	Single notch insert uncoupled CRD to return to position 48.	<ul style="list-style-type: none"> <li>• Momentarily places Rod Movement Control switch to Rod In.</li> <li>• Verifies Control Rod F-15 latches at position 48.</li> </ul>	___	___	___
*16.	Single notch insert CRD to position 46.	<ul style="list-style-type: none"> <li>• Momentarily places Rod Movement Control switch to Rod In.</li> <li>• Verifies Control Rod F-15 latches at position 46.</li> </ul>	___	___	___
17.	Verify indicated control rod position changes during movement.	Monitors rod position changes to 46 on Four Rod and/or Full Core display.	___	___	___
<b>Note</b>	The Uncoupled Rod malfunction will auto-delete after the rod is notched to position 46. If the rod goes to "overtravel out" when attempting the check again, then after the rod is placed back to position 46 the second time direct the Simulator Operator to delete the Uncouple Rod malfunction.				
*18.	While returning the control rod to position 48, perform the following: Apply continuous withdraw signal utilizing the Rod Out Notch Override switch.	Simultaneously holds... <ul style="list-style-type: none"> <li>• Rod Movement Control Switch to Rod Notch Out</li> <li>• Rod Out Notch Override Switch to Notch Out Override</li> </ul>	___	___	___
19.	Verify indicated control rod position changes during movement.	Monitors rod position changes to 48 on Four Rod and/or Full Core display.	___	___	___
20.	Verify control rod does not go to the overtravel position.	Determines control rod did not overtravel by one or more of the following: <ul style="list-style-type: none"> <li>• Position indication displays 48.</li> <li>• Alarm 902-5 E-3, Rod Overtravel, NOT received.</li> <li>• Alarm 902-5 A-3, Rod Drift, NOT received.</li> </ul>	___	___	___

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*21.	Removes continuous withdraw signal.	Releases: <ul style="list-style-type: none"> <li>• Rod Movement Control Switch</li> <li>• Rod Out Notch Override Switch</li> </ul>	___	___	___
22.	IF CRD satisfactorily couples, THEN GO TO step D.3.d.	Locates step D.3.d.	___	___	___
23.	Log CRD F-15 per DOS 0300-06.	Locates DOS 0300-06, Control Rod Drive Abnormality Record, & logs CRD F-15 in it. See attached KEY.	___	___	___
24.	GO TO Step D.6.	GOES TO Step D.6.	___	___	___
<b>Cue</b>	As the Unit Supervisor, inform the examine that "I will review DOA 0300-05 step D.6 for further action. The task is complete".				
<b>END</b>					

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

# KEY

**CATEGORY 1**

 UNIT 2(3)  
 DOS 0300-06  
 REVISION 28

 DATA SHEET 1  
 INDIVIDUAL CRD ABNORMALITY LOG

 UNIT 2 CRD F15

Date & Time Identified	Slow Insert	Slow Withdrawal	Fast Insert *	Settling Abnormalities	Fast Withdrawal *	Difficult to Unlatch	> 300 psid *	Double Notch *	Uncoupled	Drift	RPIS Failure *	Note: Recurring abnormalities <u>IF</u> previously documented, need not be updated on this log.  * For these abnormalities, place an identification tag on the CRD select matrix pushbutton.		
												Remarks	IR/WO Number	Date & Time Resolved
Current Date Current time									✓			Recoupled per DOS 0300-05	IRXXXXXX	

# KEY

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    Control Rod Exercise – Rod Overtravel above 10% Power (AP)**JPM Number:**    S-N-a**Revision Number:** 04**Task Number and Title:** 201L006, Perform daily/weekly CRD exercise**K/A Number and Importance:**    201003A2.02    3.7 / 3.8**Suggested Testing Environment:**    Simulator**Alternate Path:**     Yes     No    **SRO Only:**  Yes     No    **Time Critical:**  Yes     No**Reference(s):**    DOS 0300-01, Rev 61  
DOA 0300-05, Rev 31  
DOA 0300-12, Rev 20**Actual Testing Environment:**     Simulator     Control Room     In-Plant     Other**Testing Method:**     Simulate     Perform**Estimated Time to Complete:**    15 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?       Yes       NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:       Satisfactory       Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_      **Date:** \_\_\_\_\_

**INITIAL CONDITIONS**

1. The CRD System engineer has requested exercising Control Rod F-15.
2. The RWM is unavailable and is bypassed.
3. Attachment A is not required.
4. Prerequisites have been completed.

**INITIATING CUE**

1. The Unit Supervisor directs you to perform DOS 0300-01, Control Rod Exercise, for Control Rod F-15 ONLY.
2. Stall flow and drive pressure are NOT required.
3. Inform the Unit Supervisor when the task is complete.

## Job Performance Measure

**FW – ALTERNATE WATER INJECTION USING  
STANDBY COOLANT**

JPM Number: S-N-b

Revision Number: 06

Date: 11/18

Developed By:

\_\_\_\_\_

Exam Author

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Facility Representative

\_\_\_\_\_

Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- N/A 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure DEOP 0500-03 Rev: 23  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

**Revision 05**      Bank JPM  
**Revision 01**      Updated for 2019 ILT NRC Exam



## **SIMULATOR SETUP INSTRUCTIONS**

### **SIMULATOR SETUP INSTRUCTIONS**

1. Reset the simulator to a shutdown IC. (IC 217 was used for validation)

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

2. Setup following Malfunctions and/or Remotes:

- S M RDPPATRP RDPPBTRP H31 H32 H33 H34 HPTBTRIP and place the mode switch to Shutdown.
- S R S19 (Condensate Demin Bypass) when required during procedure.
- R R S41 through S47 (Condensate Demin Isolations) when required during procedure.

### **DOCUMENT PREPARATION**

Clean copy of DEOP 0500-03.

**INITIAL CONDITIONS**

1. You are an extra NSO.
2. A Reactor scram and ATWS has occurred.
3. ECCS systems are unable to raise reactor water level.
4. All available service water pumps are running.
5. Main condenser water level is lowering.

**INITIATING CUE**

1. The Unit Supervisor has directed you to align Standby Coolant supply to the Main Condenser per DEOP 500-03.
2. Inform the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** The examinee will supply Standby Coolant to the Main Condenser for injection into the RPV utilizing DEOP 0500-03, ALTERNATE WATER INJECTION SYSTEMS.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>Note</b>	Provide the Examinee with the supplied copy of DEOP 0500-03.				
<b>Note</b>	Performance of Step 9 will also satisfy the critical task in Step 1.				
*1.	Dispatch an operator to open the 2-3303, U2 SERVICE UNIT BYPASS VALVE.	Contacts EO to open the 2-3303, U2 SERVICE UNIT BYPASS VALVE.	___	___	___
<b>Note</b>	Examiner to direct the Sim Op to open the Service Unit Bypass Valve.				
<b>Cue</b>	Inform examinee that the 2-3303, U2 SERVICE UNIT BYPASS VALVE is open.				
*2.	Open MO 2-3403 LP HTR BYPASS.	Places control switch to OPEN. Verifies: RED light illuminated and GREEN light extinguished.	___	___	___
*3.	Open MO 2-3203 HP HTR BYPASS.	Places control switch to OPEN. Verifies: RED light illuminated and GREEN light extinguished.	___	___	___
*4.	Open MO 2-3901 SW TO CONDR.	Places control switch to OPEN. Verifies: RED light illuminated and GREEN light extinguished.	___	___	___
*5.	Open MO 2-3902 SW TO CONDR.	Places control switch to OPEN. Verifies: RED light illuminated and GREEN light extinguished.	___	___	___
6.	Start additional Service Water Pumps as required.	Condition met as stated in Initial Conditions.	___	___	___
<b>Cue</b>	If another Examinee is performing a JPM near the 923-5 panel tell the Examinee that all available service water pumps are running.				
7.	At Panel 902-7, open AO 2-3301-730, 100% CFS BYPASS VALVE.	Places control switch to OPEN.	___	___	___
<b>Cue</b>	If the Examinee checks the status of the 2-3301-730 on the PPC or requests an EO to check the status of the valve, inform the examinee "The 2-3301-730 indicates open".				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
8.	Close LOW PRESS HEATER FW ISOLATION AND HIGH PRESS HEATER FW ISOLATION valves: - Line 1 Isolation valves <ul style="list-style-type: none"> <li>• MO 2-3401A</li> <li>• MO 2-3402A</li> </ul> - Line 2 Isolation Valves <ul style="list-style-type: none"> <li>• MO 2-3401B</li> <li>• MO 2-3402B</li> </ul> - Line 3 Isolation Valves <ul style="list-style-type: none"> <li>• MO 2-3401C</li> <li>• MO 2-3402C</li> </ul> - 2D1 Isolation Valves <ul style="list-style-type: none"> <li>• MO 2-3202A</li> <li>• MO 2-3204A</li> </ul> - 2D2 Isolation Valves <ul style="list-style-type: none"> <li>• MO 2-3202B</li> <li>• MO 2-3204B</li> </ul> - 2D3 Isolation Valves <ul style="list-style-type: none"> <li>• MO 2-3202C</li> <li>• MO 2-3204C</li> </ul>	Places control switch to CLOSE. Verifies: RED light illuminated and GREEN light extinguished. Places control switch to CLOSE. Verifies: RED light illuminated and GREEN light extinguished. Places control switch to CLOSE. Verifies: RED light illuminated and GREEN light extinguished. Places control switch to CLOSE. Verifies: RED light illuminated and GREEN light extinguished. Places control switch to CLOSE. Verifies: RED light illuminated and GREEN light extinguished. Places control switch to CLOSE. Verifies: RED light illuminated and GREEN light extinguished. Places control switch to CLOSE. Verifies: RED light illuminated and GREEN light extinguished.	—	—	—
9.	Verify open MOV 2-3303, SERVICE UNIT BYPASS VALVE.	Contacts EO to verify open the 2-3303, U2 SERVICE UNIT BYPASS VALVE.	—	—	—
<b>Cue</b>	Inform examinee that the 2-3303, U2 SERVICE UNIT BYPASS VALVE has been verified open.				
10.	Isolate each Service Unit at Panel 2252-11, UNIT 2 CONDENSATE DEMINERALIZERS CONTROL.	Contacts EO to Isolate all Service Units.	—	—	—
<b>Note</b>	Direct the Sim Op to isolate the Service Units.				
<b>Cue</b>	Inform examinee that all Service Units have been isolated.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>Note</b>	A change in condenser level will not be observable immediately. JPM can be considered complete when the order to isolate Service Units has been given.				
11.	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
<b>Cue</b>	Acknowledge report				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    FW - Alternate Water Injection Using Standby Coolant**JPM Number:**    S-N-b**Revision Number:** 06**Task Number and Title:** 295L084, Inject into the RPV with alternate water systems.**K/A Number and Importance:**    295031.A1.08    3.8 / 3.9**Suggested Testing Environment:**      Simulator**Alternate Path:**     Yes     No      **SRO Only:**  Yes     No      **Time Critical:**  Yes     No**Reference(s):**    DEOP 0500-03, rev 23**Actual Testing Environment:**       Simulator     Control Room     In-Plant     Other**Testing Method:**       Simulate     PerformEstimated Time to Complete:    15 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?       Yes       NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:       Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_      **Date:** \_\_\_\_\_

### INITIAL CONDITIONS

1. You are an extra NSO.
2. A Reactor scram and ATWS has occurred.
3. ECCS systems are unable to raise reactor water level.
4. All available service water pumps are running.
5. Main condenser water level is lowering.

### INITIATING CUE

1. The Unit Supervisor has directed you to align Standby Coolant supply to the Main Condenser per DEOP 500-03.
2. Inform the Unit Supervisor when the task is complete.

## Job Performance Measure

### **MS – MSIV CLOSURE TEST WITH FAILURE OF TEST SOLENOID (AP)**

JPM Number: S-N-c

Revision Number: 04

Date: 11/18

Developed By:

\_\_\_\_\_

Exam Author

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Facility Representative

\_\_\_\_\_

Date



### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure DOS 0500-08 Rev: 46  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

**Revision Record (Summary)**

**Revision 03**      Bank JPM  
**Revision 04**      Updated for 2019 ILT NRC Exam

## SIMULATOR SETUP INSTRUCTIONS

### SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to a <50% IC (IC 216 was used for validation) (If an operator allows the MSIV 2B to full close with too high a power, a reactor scram will occur)

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

2. Run CAEP file S-0250-07.cae.
3. When the above steps are completed for this and other JPMs to be run concurrently then validate, if not previously validated, the concurrently run JPMs using the JPM Validation Checklist.
4. This completes the setup for this JPM.

### MALFUNCTIONS / REMOTES

Load CAEP file S-0250-07.cae

If the CAEP file does not load properly then enter the following Simulator Expert commands:

- `trgset 1 "msdt2b"` (Activates Trigger 1 when 2B MSIV Test switch is placed to TEST)
- `ior msdt2b (1) test` (Assigns MSIV 2B slow drift malfunction to Trigger 1)
- `trgset 2 "et_array(1) .and. msdto2b"` (Activates Trigger 2 when Trigger 1 is active and 2B MSIV Test switch is placed to OPEN)
- `trg 2 "dor msdt2b"` (Deletes MSIV 2B slow drift malfunction)

### DOCUMENT PREPARATION

Mark-up a copy DOS 0500-08, Main Steam Line Isolation Valve Closure Scram Circuit Functional Test, marked up through step I.4.a. with I.4.b the next step to perform.

### CAEP FILE

```
# S-0250-07.cae
# Revised by DSS
# Date: 01/18
```

#### #SETUP EVENT TRIGGERS

```
# Event Trigger 1 Activates when 2B MSIV Test switch is placed to TEST.
```

```
# Inserts MSIV 2B slow drift malfunction.
```

```
trgset 1 "msdt2b"
```

```
ior msdt2b (1) test
```

```
# Trigger 2 Activates when Trigger 1 is active and 2B MSIV Test switch is placed to OPEN.
```

```
# Deletes MSIV 2B slow drift malfunction.
```

```
trgset 2 "et_array(1) .and. msdto2b"|2
```

```
trg 2 "dor msdt2b"|2
```

```
# END
```

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

S-N-c

**INITIAL CONDITIONS**

1. Engineering requests that testing the 'B' Main Steam Line Isolation Valves (MSIVs) be performed.
2. Operators are stationed at the 902-5, 15 & 17 panels.
3. Prerequisites have been completed.

**INITIATING CUE**

1. The Unit Supervisor directs you to perform DOS 0500-08, Main Steam Line Isolation Valve Closure Scram Circuit Functional Test, for the 'B' MSIVs ONLY.
2. Notify the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will test the 2-203-1B and 2B MSIV utilizing DOS 0500-08, UNIT 2 MAIN STEAM LINE ISOLATION VALVE CLOSURE SCRAM CIRCUIT FUNCTIONAL TEST. The 2-203-2B will fail to reopen automatically and be required to be reopened manually by the examinee. Both MSIVs will be open following testing.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
1.	Proceed to step I.4 of DOS 0500-08.	Proceeds to step I.4 of DOS 0500-08.	___	___	___
<b>Cue</b>	Examinee MAY validate with assigned operators at the 902-15 & 17 panels that they are ready.				
2.	Inform operators at 902-15 & 17 to watch relays 590-102C and 590-102F.	Informs operators at 902-15 & 17 to watch relays 590-102C and 590-102F.	___	___	___
<b>Cue</b>	Acknowledge direction and inform the examinee “we are ready”.				
<b>Note</b>	If Examinee requests a peer check, respond – “a peer check is not available. Examinee may use flagging to identify components to be manipulated.				
*3.	Test MSIV 2-203-1B by momentarily placing MSIV TEST AO 2-203-1B switch to TEST on Panel 902-3	Momentarily rotates MSIV TEST AO 2-203-1B switch to TEST on Panel 902-3.	___	___	___
4.	Verifies MSIV 1B slow closes until the dual indication is received, <u>THEN</u> returns to the full open position.	Verifies MSIV 1B slow closes until the dual indication is received, <u>THEN</u> returns to the full open position. (CLOSE light OFF, OPEN light ON)	___	___	___
<b>Cue</b>	If asked, Report that “There was no observable change in steam flow at the 902-5 panel”.				
5.	Verifies MSIV NOT FULL OPEN relay 590-102C drops out with contacts 1-2 <u>AND</u> 3-4 open	Contacts operator watching relay 590-102C for its operation.	___	___	___
6.	Verifies MSIV NOT FULL OPEN relay 590-102C picks up.	Contacts operator watching relay 590-102C for its operation.	___	___	___
<b>Cue</b>	Report that “relay 590-102C dropped out with contacts 1-2 AND 3-4 opening, then the relay picked up”				
7.	Verifies MSIV NOT FULL OPEN relay 590-102F drops out with contacts 1-2 <u>AND</u> 3-4 open.	Contacts operator watching relay 590-102F for its operation.	___	___	___
8.	Verifies MSIV NOT FULL OPEN relay 590-102F picks up.	Contacts operator watching relay 590-102F for its operation.	___	___	___
<b>Cue</b>	Report that “relay 590-102F dropped out with contacts 1-2 AND 3-4 opening, then the relay picked up”				
<b>Note</b>	If other Examinees are in proximity of the 902-5 panel and the Process Computer terminals, then use the <b>CUES</b> provided for the next steps.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
9.	Verifies On Panel 902-5, annunciator 902-5 D-14 does <u>NOT</u> alarm.	Verifies on Panel 902-5, annunciator 902-5 D-14 does NOT alarm.	___	___	___
<b>Cue</b>	Annunciator 902-5 D-14 did NOT alarm.				
10.	Verifies MSIV A NOT FULL OPEN computer point W008 does <u>NOT</u> indicate TRIP.	Verifies MSIV A NOT FULL OPEN computer point W008 does NOT indicate TRIP.	___	___	___
<b>Cue</b>	Computer point W008 does NOT indicate TRIP.				
11.	Verifies MSIV D NOT FULL OPEN computer point W011 does <u>NOT</u> indicate TRIP.	Verifies MSIV D NOT FULL OPEN computer point W011 does NOT indicate TRIP.	___	___	___
<b>Cue</b>	Computer point W011 does NOT indicate TRIP.				
<b>NOTE</b>	Examinee MAY inform the operators at the 902-15&17 panels that they are ready.				
12.	Inform operators at 902-15 & 17 to watch relays 590-102C and 590-102F.	Inform operators at 902-15 & 17 to watch relays 590-102C and 590-102F.	___	___	___
<b>Cue</b>	Acknowledge direction and inform the examinee “we are ready”.				
<b>BEGIN ALTERNATE PATH</b>					
<b>Note</b>	When the Examinee takes the 203-2B test switch to TEST the valve will move towards full closed. The Examinee should recognize that the valve has traveled past the 10% position allowed by the test logic and take the action from the Limitation section to place the switch to OPEN.				
*13.	Test MSIV 2-203-2B by momentarily placing MSIV TEST AO 2-203-2B switch to TEST on Panel 902-3	Momentarily rotates MSIV TEST AO 2-203-2B switch to TEST on Panel 902-3.	___	___	___
14.	MSIV 2B slow closes until the dual indication is received, <u>THEN</u> returns to the full open position.	Determines that the valve CONTINUES to <b>CLOSE</b> .	___	___	___
<b>Cue</b>	If asked, Report that “There was an observable drop in steam flow at the 902-5 panel”.				
<b>Note</b>	The 590-102 relay takes longer to pick up, it is proportional to the time until the Examinee placed the TEST switch to OPEN.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*15.	(Limitations/Actions Section) <u>IF</u> after releasing the MSIV Test Switch from the TEST position, a MSIV continues to close past the 10% closed position, <u>THEN</u> place the associated MSIV Test Switch to OPEN	Examinee places TEST switch in the OPEN position (CLOSE light OFF, OPEN light ON) to open the MSIV.	—	—	—
16.	Notify the Unit Supervisor that the 203-2B MSIV continued past the 10% position.	Examinee MAY notify the Unit Supervisor that the 2-203-2B MSIV continued past the 10% position. ALSO that the test switch was placed to OPEN and the MSIV is now open.	—	—	—
<b>Cue</b>	Acknowledge report				
<b>Note</b>	The Examinee may stop at this point as the surveillance cannot be completed and might seek further guidance due to failure in the previous step. NO actions beyond this step are critical.				
<b>END ALTERNATE PATH</b>					
17.	Verifies MSIV NOT FULL OPEN relay 590-102C drops out .	Contacts operator watching relay 590-102C for its operation.	—	—	—
18.	Verifies MSIV NOT FULL OPEN relay 590-102C picks up.	Contacts operator watching relay 590-102C for its operation.	—	—	—
<b>Cue</b>	Report that “relay 590-102C dropped out, and then the relay picked up” (If Examinee does <b>not</b> take TEST switch to OPEN then do NOT report that the relay picked up.)				
19.	Verify MSIV NOT FULL OPEN relay 590-102F drops out.	Contacts operator watching relay 590-102F for its operation.	—	—	—
20.	Verify MSIV NOT FULL OPEN relay 590-102F picks up.	Contacts operator watching relay 590-102F for its operation.	—	—	—
<b>Cue</b>	Report that “relay 590-102F dropped out, and then the relay picked up” (If Examinee does <b>not</b> take TEST switch to OPEN then do NOT report that the relay picked up.)				
21.	On Panel 902(3)-5, verify all White SCRAM SOLENOID GROUPS lights, A1, A2, A3, A4, B1, B2, B3 and B4 are ON.	Verifies on the 902-5 panel that the scram solenoid lights are lit.	—	—	—
22.	Notify the Unit Supervisor when the task is complete.	Notifies the Unit Supervisor.	—	—	—
<b>Cue</b>	Acknowledge report				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		END			

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



**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    MSIV Closure Test with Failure of Test Solenoid (AP)**JPM Number:**    S-N-c**Revision Number:** 04**Task Number and Title:** 239L010, Perform MSIV closure scram and isolation circuit functional test**K/A Number and Importance:**    239001.A4.01    4.2 / 4.0**Suggested Testing Environment:**      Simulator**Alternate Path:**     Yes     No**SRO Only:**  Yes     No**Time Critical:**  Yes     No**Reference(s):**    DOS 0500-08, Rev. 46**Actual Testing Environment:**       Simulator     Control Room     In-Plant     Other**Testing Method:**       Simulate     PerformEstimated Time to Complete:    10 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?       Yes       NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:       Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

#### **INITIAL CONDITIONS**

1. Engineering requests that testing the 'B' Main Steam Line Isolation Valves (MSIVs) be performed.
2. Operators are stationed at the 902-5, 15 & 17 panels.
3. Prerequisites have been completed.

#### **INITIATING CUE**

1. The Unit Supervisor directs you to perform DOS 0500-08, Main Steam Line Isolation Valve Closure Scram Circuit Functional Test, for the 'B' MSIVs ONLY.
2. Notify the Unit Supervisor when the task is complete.

## Job Performance Measure

**HPCI – Start HPCI for Pressure Control with  
Failure of Aux Oil Pump to Start (AP)**

JPM Number: S-N-d

Revision Number: 04

Date: 11/18

Developed By:

\_\_\_\_\_  
Exam Author\_\_\_\_\_  
Date

Approved By:

\_\_\_\_\_  
Facility Representative\_\_\_\_\_  
Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure DOA 2300-02 Rev: 11  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

## **Revision Record (Summary)**

**Revision 03**      Bank JPM

**Revision 04**      Updated for 2019 ILT NRC Exam

## SIMULATOR SETUP INSTRUCTIONS

### SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any IC with the Unit online (IC 217 was used for validation) .

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

2. Place Maximum Torus cooling on in accordance with Hard Card.
3. Start a SBGT train.
4. Start Unit 2 HPCI Room Cooler.
5. Run CAEP file **S-2300-07.cae**, if the CAEP file does not load properly insert the following Expert Command:
  - imf hpaopasf (inserts a failure the HPCI Aux Oil Pump to start from an auto initiation signal)

### DOCUMENT PREPARATION

A clean copy of DOA 2300-02 Hardcard

#### CAEP File

```
# S-2300-07.cae
# Revised by: DSS
# 02/18
```

```
##### Setup for JPM S-2300-07, Start HPCI for Injection with Failure of Aux Oil Pump to Start. #####
```

```
# Inserts a failure the HPCI Aux Oil Pump to start from an auto initiation signal.
```

```
imf hpaopasf
imf ser0159 off
imf ser0215 off
```

```
##### END #####
```

**INITIAL CONDITIONS**

**NOTE:** A copy of DOA 2300-02 Hardcard is provided as a handout. **DO NOT** hand it out until the Examinee refers to it during the JPM.

1. A transient has occurred on Unit 2.
2. Torus cooling is operating
3. SBTG is operating.
4. Unit 2 HPCI Room Cooler is operating.

**INITIATING CUE**

1. The Unit Supervisor has directed you to place HPCI system in the pressure control mode using the Hardcard.
2. Notify the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will start up HPCI in the pressure control mode utilizing DOA 2300-02, HPCI FAST STARTUP, after identifying the HPCI Aux Oil pump failed to automatically start and starting it manually.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>Note</b>	All actions taken at 902-3 panel unless otherwise stated. Hand out the DOA 2300-02 hardcard provided when the Examinee goes to use the panel hardcard <b>PROVIDED</b> they use the <b>CORRECT</b> hardcard.				
<b>Note</b>	If Examinee requests a peer check, respond – “a peer check is not available.”				
*1.	Place HPCI FLOW CONTROL in MAN with zero (0) output.	On HPCI FLOW CONTROL: <ul style="list-style-type: none"> <li>Depresses MAN pushbutton.</li> <li>Verifies AUTO pushbutton light OFF.</li> <li>Verifies MAN pushbutton light ON.</li> <li>Pushes and holds left DEMAND pushbutton OR rotates the HARD MANUAL dial to the left until demand lowers to zero.</li> </ul>	___	___	___
2.	Verify MGU and MSC at LSS.	<ul style="list-style-type: none"> <li>Verifies MGU LSS light ON and HSS light OFF.</li> <li>Verifies MSC LSS light ON and HSS light OFF.</li> </ul>	___	___	___
<b>Note</b>	A failure of the HPCI Aux Oil Pump to start from an initiation signal was inserted during Simulator setup. As a result, the HPCI Aux Oil Pump does not start when the HPCI AUTO INITIATE pushbutton is depressed. It can be started using its control switch. The HPCI MSC waits for the HPCI Turbine Stop Valve to open. The HPCI Stop valve does not open due to no control oil system pressure.				
*3.	Depress and hold depressed the HPCI AUTO INITIATE pushbutton until MSC reaches HSS.	<ul style="list-style-type: none"> <li>Depresses and holds depressed the HPCI AUTO INITIATE pushbutton until MSC reaches HSS.</li> <li>Observes that MSC LSS light remains ON and HSS light remains OFF.</li> </ul>	___	___	___
<b>BEGIN ALTERNATE PATH</b>					



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>Note</b>	<p>The Examinee may refer to DOP 2300-03 (Attachment 1, critical steps annotated with *) to check expected operation of HPCI startup; OR, scan the 902-3 panel without the procedure to look for improper HPCI equipment operation.</p> <p>The Examinee may not release the AUTO INITIATE pushbutton when they start the Aux Oil Pump, this is due to a recent OPEX of releasing the AUTO INITIATE pushbutton too early during a HPCI startup.</p>				
<b>Cue</b>	If examinee requests direction from the Unit Supervisor, reply "Continue the HPCI startup"				
<b>Cue</b>	As an EO sent to check HPCI status, reply "I see nothing abnormal with any HPCI components"				
*4.	Determine HPCI Aux Oil Pump did NOT start and start HPCI Aux Oil Pump.	Determines HPCI Aux Oil Pump did NOT start. <ul style="list-style-type: none"> <li>Observes HPCI Aux Oil Pump OFF light ON and ON light OFF.</li> <li>Places HPCI Aux Oil Pump control switch to START.</li> <li>Verifies HPCI Aux Oil Pump OFF light OFF and ON light ON.</li> </ul>	___	___	___
*5.	Depress and hold depressed the HPCI AUTO INITIATE pushbutton until MSC reaches HSS.	<ul style="list-style-type: none"> <li>Depresses and holds depressed the HPCI AUTO INITIATE pushbutton until MSC reaches HSS.</li> <li>Observes that MSC LSS light OFF and HSS light ON.</li> </ul>	___	___	___
<b>END ALTERNATE PATH</b>					
6.	Close 2(3)-2301-8	<ul style="list-style-type: none"> <li>Verifies 2-2301-8 OPEN light OFF and CLOSE light ON.</li> <li>May rotate 2-2301-8 control switch to CLOSE position.</li> </ul>	___	___	___
*7.	Open 2(3)-2301-15	<ul style="list-style-type: none"> <li>Rotates 2-2301-15 control switch to OPEN position.</li> <li>Verifies 2-2301-15 OPEN light ON and CLOSE light OFF.</li> </ul>	___	___	___

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*8.	Open 2(3)-2301-10	<ul style="list-style-type: none"> <li>Rotates and holds 2-2301-10 control switch to OPEN position. (Throttle valve)</li> <li>Verifies 2-2301-10 dual indication OPEN light ON and CLOSE light ON.</li> </ul>	___	___	___
<b>Cue</b>	When examinee checks RPV pressure: If the 2-2301-10 has been throttled open less than 5 seconds inform them that RPV pressure is stable. If the 2-2301-10 has been throttled open 5 seconds or longer, inform them that RPV pressure is slowly dropping.				
9.	Control HPCI steam flow by adjusting HPCI flowrate and discharge pressure using turbine speed AND/OR throttle 2(3)-2301-10.	Adjusts HPCI flow and pressure: <ul style="list-style-type: none"> <li>Pushes DEMAND pushbutton OR rotates the HARD MANUAL dial;</li> </ul> And/or, <ul style="list-style-type: none"> <li>Throttles 2-2301-10 to adjust flow.</li> </ul>	___	___	___
10.	START: SBG, HPCI Room Cooler, and Torus Cooling.	<ul style="list-style-type: none"> <li>The INITIAL CONDITIONS state that the equipment is already operating.</li> </ul>	___	___	___
11.	Report HPCI status to Unit Supervisor.	Reports to Unit Supervisor that HPCI is operating in the pressure control mode and that the Aux Oil Pump required manual starting.	___	___	___
<b>Cue</b>	Acknowledge the report. Inform the Examinee you are assigning another NSO to control pressure using the HPCI system.				
<b>END</b>					

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

Attachment 1

## CATEGORY 1

UNIT 2(3)  
DOP 2300-03  
REVISION 42G. PROCEDURE:NOTE

1. Unless otherwise stated, the following operations and observation are performed at Panel 902(3)-3.
2. IF the HPCI AUTO INITIATE pushbutton is used to initiate HPCI, THEN the pushbutton must be held depressed until the Motor Speed Changer (MSC) reaches the HSS to assure the full range of HPCI operation is available.
3. IF the HPCI AUTO INITIATE pushbutton is used to initiate HPCI, OR HPCI has automatically initiated, THEN verification of Steps G.1 through G.21 are necessary.

1. IF MO 2(3)-2301-4, STEAM ISOL VLV, is open, THEN go to Step G.4.

*N/A* IF MO 2(3)-2301-4, STEAM ISOL VLV, is in Pull-To-Lock AND a HPCI initiation signal is present, THEN manually initiate HPCI:

*N/A* Verify MO 2(3)-2301-14, MIN FLOW BYPASS, control switch is in NORMAL position AND indicates OPEN.

NOTE

Upon release of the REMOTE TURB TRIP pushbutton with an initiation signal present AND after MO 2(3)-2301-4, STEAM ISOL VLV, is open, HPCI will start and accelerate normally.

*N/A* Depress AND hold the REMOTE TURB TRIP pushbutton depressed.

*N/A* Release MO 2(3)-2301-4, STEAM ISOL VLV, control switch from the Pull-To-Lock position.

*N/A* WHEN MO 2(3)-2301-4, STEAM ISOL VLV, reaches full open, THEN release the REMOTE TURB TRIP pushbutton.

Attachment 1

## CATEGORY 1

UNIT 2(3)  
DOP 2300-03  
REVISION 42

G. ~~N/A~~ IF MO 2(3)-2301-4, STEAM ISOL VLV, is CLOSED with NO initiation signal present, THEN:

~~N/A~~ a. Verify MO 2(3)-2301-5, STEAM ISOL VLV, is open.

~~N/A~~ b. Open MO 2(3)-2301-4, STEAM ISOL VLV.

④ Start the following:

★ a. Auxiliary Oil Pump.

b. Gland Seal Leak Off (GSLO) Blower.

c. GSLO and Oil Cooler Coolant Pump (does NOT automatically start upon HPCI automatic initiation).

CAUTION

Reactor steam will be admitted into the HPCI Room via HPCI Room Sump if MO 2(3)-2301-3, TURB STM SUPPLY, is opened prior to closing AO 2(3)-2301-64, DRAIN VLV/AO 2(3)-2301-65, DRAIN VLV.

⑤<sup>⊙</sup> Perform the following sub-steps in order AND in rapid succession:

a. Close AO 2(3)-2301-64, DRAIN VLV/AO 2(3)-2301-65, DRAIN VLV (single switch).

b. Open MO 2(3)-2301-3, TURB STM SUPPLY. ⊙(W-2)

NOTE

WHEN MO 2(3)-2301-14, MIN FLOW BYPASS, is open AND HPCI is taking suction from the CST, THEN water will be added to the torus.

⑥ Verify MO 2(3)-2301-14, MIN FLOW BYPASS, is in the OPEN position.

~~N/A~~ IF HPCI is needed for reactor water level control, THEN go to Step G.9.

⑧ IF HPCI is needed ONLY for reactor pressure control, THEN go to Step G.17.

**CATEGORY 1****Attachment 1**UNIT 2(3)  
DOP 2300-03  
REVISION 42

G. *N/A* Verify MO 2(3)-2301-14, MIN FLOW BYPASS, closes when system flow rises past 1119 gpm.

*N/A* IF HPCI System flow drops below 715 gpm, THEN verify MO 2(3)-2301-14, FLOW BYPASS, opens. ©(W-11)

**CAUTION**

- © To assure proper operation of HPCI AND supporting systems, ALL following steps of this procedure should be accomplished in a timely manner up to the point of HPCI no longer being required.  
©(W-5)

*N/A* 15. Adjust HPCI System flow into the reactor vessel as necessary using either manual OR automatic control.

*N/A* 16. Go to Step G.24 to continue reactor level control.

★ 17. IF HPCI is needed to control reactor pressure, THEN open MO 2(3)-2301-10, TEST RETURN VLV, AND MO 2(3)-2301-15, TEST RETURN VLV.

18. © Open MO 2(3)-2301-48, CLG RTRN NORM. ©(W-5)

19. © Close MO 2(3)-2301-49, CLG RTRN TEST. ©(W-5)

20. © Depress the TURB TRIP RESET pushbutton.

Attachment 1

## CATEGORY 1

UNIT 2(3)  
DOP 2300-03  
REVISION 42NOTE

1. HPCI turbine control follows the Motor Speed Changer (MSC) OR the Motor Gear Unit (MGU), whichever is at the lower setting.
2. IF there is NOT a HPCI auto initiation signal, THEN the MSC will stay at the operator directed setting.
3. IF there is a HPCI auto initiation signal, THEN the MSC will automatically ramp to the High Speed Stop AND stay there. The MGU is positioned by the Flow Controller Output signal and therefore controls HPCI to the Flow Controller output, automatic (set point) or manual (slide switch) control mode.

- G. ~~21~~ Bring the turbine up to speed by holding the MOTOR SPEED CHANGER control switch in the FAST RAISE position OR by depressing the BLOCK MOTOR SPEED CHANGER pushbutton until MSC reaches the HSS.
22. Verify MO 2(3)-2301-14, MIN FLOW BYPASS, closes when system flow rises past 1119 gpm.
- d. <sup>o</sup> IF HPCI System flow drops below 715 gpm, THEN verify MO 2(3)-2301-14, FLOW BYPASS, opens. <sup>o</sup>(W-11)

CAUTION

- <sup>o</sup> To assure proper operation of HPCI AND supporting systems, ALL following steps should be accomplished in a timely manner up to the point of HPCI no longer being required. <sup>o</sup>(W-5)

23. IF HPCI is needed to control reactor pressure, THEN throttle MO 2(3)-2301-10, TEST RETURN VLV, AND adjust HPCI System flow as necessary using either manual OR automatic control.

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    Start HPCI for Pressure Control with Failure of Aux Oil Pump to Start (AP)**JPM Number:**    S-N-d**Revision Number:** 04**Task Number and Title:**    206L006, Start the HPCI system for pressure control**K/A Number and Importance:**    206000.A1.08      4.1 / 4.0**Suggested Testing Environment:**      Simulator**Alternate Path:**     Yes     No      **SRO Only:**  Yes     No      **Time Critical:**  Yes     No**Reference(s):**    DOA 2300-02, Rev. 11**Actual Testing Environment:**       Simulator     Control Room     In-Plant     Other**Testing Method:**       Simulate     PerformEstimated Time to Complete:    21 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?       Yes       NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:       Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_      **Date:** \_\_\_\_\_

**INITIAL CONDITIONS**

1. A transient has occurred on Unit 2.
2. Torus cooling is operating
3. SBT is operating.
4. Unit 2 HPCI Room Cooler is operating.

**INITIATING CUE**

1. The Unit Supervisor has directed you to place HPCI system in the pressure control mode using the Hardcard.
2. Notify the Unit Supervisor when the task is complete.



## Job Performance Measure

**CONTAINMENT – DEINERT DRYWELL TO RBX  
WITH CHANGING DRYWELL CONDITIONS (AP)**

JPM Number: S-N-e

Revision Number: 02

Date: 11/18

Developed By:

---

Exam Author

---

Date

Approved By:

---

Facility Representative

---

Date

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure   DOP 1600-07   Rev:   30    
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

## **Revision Record (Summary)**

<b>Revision 01</b>	Bank JPM
<b>Revision 02</b>	Updated for 2019 ILT NRC Exam

## **SIMULATOR SETUP INSTRUCTIONS**

### **SIMULATOR SETUP INSTRUCTIONS**

1. Reset the simulator to any IC with power less than 50% (IC 215 was used for validation).

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

2. Insert following Malfunctions and/or Remotes:
  - None.
3. Setup the following Triggers:
  - None.

### **DOCUMENT PREPARATION**

Copy of DOP 1600-07 with prerequisites marked off.

**INITIAL CONDITIONS**

1. You are the Unit 2 Aux NSO.
2. Unit 2 is at 40% power and being shut down for a maintenance outage and a drywell entry will be performed.
3. Reactor Building ventilation is in a normal operating lineup.
4. An EO is briefed and standing by in the field.
5. Prerequisites have been completed.
6. Atmospheric sample results for the drywell are as follows:
  - a. Iodine 131:  $6.1 \times 10^{-10}$  uCi/cc
  - b. Beta/Gamma (total particulate):  $6.8 \times 10^{-10}$  uCi/cc

**INITIATING CUE**

1. The Unit Supervisor has directed you to deinert the drywell using Reactor Building ventilation per DOP 1600-07.
2. Inform the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will begin to deinert the drywell utilizing DOP 1600-07, PRIMARY CONTAINMENT DEINERTING. Drywell conditions will change requiring deinerting to be secured utilizing the same procedure.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>Note</b>	Provide the Examinee with the supplied copy of DOP 1600-07.				
1.	Place the PIC 2-8540-1, DW PRESS CONTRL, in MANUAL AND close PCV 2-8527.	Presses the MANUAL button on PIC 2-8540-1 and move the controller lever to the left to close PCV 2-8527.	___	___	___
2.	Close 2-8505-501, U2 DW/TORUS N2 MU PCV 2-8527 INLET ISOL VLV.	Directs EO to close 2-8505-501, U2 DW/TORUS N2 MU PCV 2-8527 INLET ISOL VLV. (Step # G.1.b)	___	___	___
<b>Cue</b>	2-8505-501, U2 DW/TORUS N2 MU PCV 2-8527 INLET ISOL VLV is closed. (Step G.1.b is complete)				
3.	Place PIC 2-1602-14, DW & TORUS DP CONTR, in MANUAL AND close PCV 2 8599-556.	Presses the MANUAL button on PIC 2-1602-14 and move the controller lever to the left to close PCV 2 8599-556.	___	___	___
<b>Note</b>	If step 4 is not completed, steps 5 & 6 become critical steps.				
*4.	Close MO 2-1601-57, M-U VLV.	RED closed light illuminated.	___	___	___
5.	Close AO 2-1601-58, TORUS M-U VLV.	GREEN closed light illuminated.	___	___	___
6.	Close AO 2-1601-59, DW M-U VLV.	RED closed light illuminated.	___	___	___
<b>Cue</b>	If examinee requests information regarding Tech Spec compliance, inform them "The Unit Supervisor has verified compliance with all applicable Tech Specs."				
7.	Verify that primary containment atmosphere sample results are below the limits specified in Step F.1.	Compares the provided containment atmosphere sample results to the limits specified in Step F.1. Determines they are below the limit.	___	___	___
<b>Note</b>	If another Examinee is performing a JPM near the 923-5 panel tell the Examinee that RB Ventilation is operating properly				
8.	Verify that the reactor building ventilation for the Unit to be deinerted is operating (DOP 5750-02).	Checks U2 Reactor Building ventilation system at the 923-5 panel and determines it is operating.	___	___	___
<b>Note</b>	Annunciator 902-3 B-15, DRYWELL/TORUS VENTS NOT FULL CLSD is expected for this evolution.				
9.	Verify AO 2-1601-91, VENT TO RX BLDG EXH SYS, is open.	Verifies Green open light illuminated.	___	___	___
*10.	Open AO 2-1601-24, VENT TO RX BLDG EXH SYS.	RED open light illuminated.	___	___	___

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*11.	Open AO 2-1601-62, DW 2-IN VENT VLV.	RED open light illuminated.	___	___	___
12.	Place ONE DW & TORUS PURGE FAN in PTL.	EITHER DW & TORUS PURGE FAN in PTL	___	___	___
*13.	Start the remaining DW & TORUS PURGE FAN.	Remaining DW & TORUS PURGE FAN RED on light is illuminated	___	___	___
<b>Cue</b>	After the trainee has started a DW & Torus purge fan, provide the following report: "The Unit 2 EO reports that the DW CAM is trending up at a rate higher than before."				
<b>Note</b>	The candidate should realize that conditions in the drywell have changed and the Deinerting must be stopped per the Limitations and Actions Step F.3 and perform Step G.11 of the procedure.				
<b>BEGIN ALTERNATE PATH</b>					
14.	Stop 2A(B) DW & TORUS PURGE FAN.	2A(B) DW & TORUS PURGE FAN GREEN off light is illuminated	___	___	___
15.	Close AO 2-1601-21, DW PURGE VLV.	GREEN close light illuminated.	___	___	___
16.	Close AO 2-1601-22, VENT VLV.	GREEN close light illuminated.	___	___	___
17.	Verify open AO 2-1601-56, TORUS PURGE.	GREEN open light illuminated.	___	___	___
18.	Close AO 2-1601-23, DW VENT VLV.	GREEN close light illuminated.	___	___	___
<b>Note</b>	The following critical task is met when the flowpath from the Drywell to RB ventilation is secured. This can be met by closing the 2-1601-24, 2-1601-62 or 2-1601-91.				
*19.	Close AO 2-1601-24, VENT TO RX BLDG EXH SYS.	GREEN close light illuminated.	___	___	___
20.	Close AO 2-1601-60, TORUS VENT VLV.	GREEN close light illuminated.	___	___	___
21.	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor conditions in the drywell have changed and Deinerting has been stopped.	___	___	___
<b>Cue</b>	Acknowledge report				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    Containment – Deinert Drywell to RBX with Changing Drywell Conditions (AP)**JPM Number:**    S-N-e**Revision Number:** 02**Task Number and Title:** 223L008, Perform Deinerting of the Primary Containment with SBGT or RBX System**K/A Number and Importance:**    223001.A4.10    3.2 / 3.2**Suggested Testing Environment:**      Simulator**Alternate Path:**     Yes     No**SRO Only:**  Yes     No**Time Critical:**  Yes     No**Reference(s):**    DOP 1600-07, Rev. 30**Actual Testing Environment:**     Simulator     Control Room     In-Plant     Other**Testing Method:**     Simulate     PerformEstimated Time to Complete:    20 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**

Were all the Critical Elements performed satisfactorily?

 Yes No

The operator's performance was evaluated against standards contained within this JPM and has been determined to be:

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



### INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Unit 2 is at 40% power and being shut down for a maintenance outage and a drywell entry will be performed.
3. Reactor Building ventilation is in a normal operating lineup.
4. An EO is briefed and standing by in the field.
5. Prerequisites have been completed.
6. Atmospheric sample results for the drywell are as follows:
  - a. Iodine 131:  $6.1 \times 10^{-10}$  uCi/cc
  - b. Beta/Gamma (total particulate):  $6.8 \times 10^{-10}$  uCi/cc

### INITIATING CUE

1. The Unit Supervisor has directed you to deinert the drywell using Reactor Building ventilation per DOP 1600-07.
2. Notify the Unit Supervisor when the task is complete.

## Job Performance Measure

**AC DIST – SWAP BUS DUCT COOLERS (AP)**

JPM Number: S-N-f

Revision Number: 00

Date: 11/18

Developed By:

---

Exam Author

---

Date

Approved By:

---

Facility Representative

---

Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure DOP 5730-02 Rev: 13  
 Procedure DAN 902(3)-8 F-11 Rev: 05  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

## **Revision Record (Summary)**

**Revision 00**      New alternate path JPM for 2019 ILT NRC Exam

## SIMULATOR SETUP INSTRUCTIONS

### SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any IC with 2A Bus Duct Blower in operation (IC 215 used for validation)

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

2. Ensure 2A Bus Duct Blower is running and 2B Bus Duct Blower is secured.
3. Run CAEP file **S-N-f.cae**
  - a. If the CAEP file does not load properly then enter the following Expert commands:
    - `trgset 1 "HWMGDDBATR(1)"`
    - `ior mgddbtr (1 10) trip`
    - `ior mglbbat (1 10) on`
    - `ior MGLDBBON (1 10) off`
    - `imf ser1669 (1 10) 2`
    - `imf SER1673 (1 10) 2`
    - `trgset 2 "HWMGDDBACL(1)"`
    - `trg 2 "dmf ser1669"`
    - `trgset 3 "HWMGDDBBTR"`
    - `trg 3 "dmf ser1673"`
    - `trgset 4 "et_array(3)"`
    - `trg 4 "dor MGLDBBAT"`

### DOCUMENT PREPARATION

- Mark up a copy of DOP 5370-02, ISOLATED PHASE BUS DUCT COOLING SYSTEM through step G.2.b, step G.3 is the next step to be performed.
- Clean copy of DAN 902(3)-8 F-11, ISOL PHASE BUS DUCT BLOWER TRIP

**CAEP FILE**

# S-N-f.cae  
# For 2019 ILT NRC Exam  
# Written by JMN  
# Rev 00  
# Date 11/18

##### EVENT TRIGGERS #####

##### Setup for S-N-f, AC DIST – SWAP BUS DUCT COOLERS (AP) #####

# Event Trigger 1 Activates when 2A Bus Duct Blower is secured.  
# Inserts a trip of 2B Bus Duct Blower 10 seconds after 2A Bus Duct Blower is secured.  
trgset 1 "HWMGDDBATR(1)"  
ior mgddbtr (1 10) trip  
ior mglbbat (1 10) on  
ior MGLDBBON (1 10) off  
imf ser1669 (1 10) 2  
imf SER1673 (1 10) 2|2

# Event Trigger 2 activates when 2A Bus Duct Blower is restarted  
trgset 2 "HWMGDDBACL(1)"|2  
trg 2 "dmf ser1669"|2

# Event Trigger 3 activates when 2B Bus Duct Blower switch is taken to TRIP  
trgset 3 "HWMGDDBBTR"|2  
trg 3 "dmf ser1673"|4

# Event Trigger 4 activates when trigger 3 is active  
trgset 4 "et\_array(3)"|4  
trg 4 "dor MGLDBBAT"|4

# END

**INITIAL CONDITIONS**

1. You are the Unit 2 Aux NSO.
2. Maintenance has just been completed on 2B Bus Duct Blower.
3. Fill and vent of the 2B Bus Duct Blower cooling coil has been completed and TBCCW flow has been established.
4. DOP 5370-M1E1, UNIT 2 ISOLATED PHASE BUS DUCT COOLING SYSTEM, has been completed for starting the 2B Bus Duct Blower.
5. An EO is in the field standing by to verify Bus Duct Blower operation.

**INITIATING CUE**

1. The Unit Supervisor has directed you to start 2B Bus Duct Blower for post maintenance testing and secure 2A Bus Duct Blower IAW DOP 5370-02 Step G.3.
2. Inform the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will start the 2B Bus Duct Blower then secure the 2A Bus Duct Blower utilizing DOP 5370-02, ISOLATED PHASE BUS DUCT COOLING SYSTEM. When the 2B blower trips, the examinee will restart the 2A blower utilizing DAN 902-8 F-11, ISOL PHASE BUS DUCT BLOWER TRIP.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>Note</b>	Provide the Examinee with the supplied copy of DOP 5370-02. <b>**** DO NOT GIVE THE EXAMINEE DAN 902(3)-8 F-11 UNTIL THEY LOCATE THE PROCEDURE ****</b>				
*1.	At Panel 902-8, start the standby 2B BUS DUCT BLOWER	Places 2B BUS DUCT BLOWER C/S to CLOSE position and verifies blue ON light illuminated	___	___	___
2.	Verify proper operation	Contacts EO to verify proper operation of 2B Bus Duct Blower	___	___	___
<b>Cue</b>	As the EO, inform the examinee "2B Bus Duct Blower is operating normally"				
*3.	At Panel 902-8, stop the desired 2A BUS DUCT BLOWER	Places 2A BUS DUCT BLOWER C/S to TRIP position and verifies green OFF light illuminated	___	___	___
<b>Note</b>	An automatic Trigger inserts a trip of the 2B Bus Duct Blower 10 seconds after the 2A Bus Duct Blower is secured.				
<b>Cue</b>	If the examinee enters DOP 6700-20, 480V Circuit Breaker Trip, or directs EO to check the 2B Bus Duct Blower and breaker inform them: "another NSO will complete DOP 6700-20 actions."				
<b>BEGIN ALTERNATE PATH</b>					
4.	Announces 2B Bus Duct Blower trip and enters DAN 902(3)-8 F-11, ISOL PHASE BUS DUCT BLOWER TRIP	Announces 2B Bus Duct Blower trip and enters DAN 902(3)-8 F-11, ISOL PHASE BUS DUCT BLOWER TRIP	___	___	___
*5.	Start standby isolated phase bus duct blower AND secure the previously running blower (DOP 5370-02)	Places 2A BUS DUCT BLOWER C/S to CLOSE position and verifies blue ON light illuminated	___	___	___
6.	Verify proper operation	Contacts EO to verify proper operation of 2A Bus Duct Blower	___	___	___
<b>Cue</b>	As the EO, inform the examinee "2A Bus Duct Blower is operating normally"				
7.	Informs the Unit Supervisor 2A Bus Duct Blower was restarted due to a trip of 2B Bus Duct Blower	Examinee notifies the Unit Supervisor	___	___	___
<b>Cue</b>	Acknowledge the report				
<b>Cue</b>	Inform the examinee "Another NSO will complete DAN 902(3)-8 F-11 and DOP 5370-02 actions".				
<b>Note</b>	At this point the JPM is complete				



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8.	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	—	—	—
<b>Cue</b>	Acknowledge report				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    AC DIST – SWAP BUS DUCT COOLERS (AP)**JPM Number:**    S-N-f**Revision Number:** 00**Task Number and Title:** 298L017, Synchronize the main generator to the grid per DGP 1-1**K/A Number and Importance:**    262001.A3.01    3.1 / 3.0**Suggested Testing Environment:**      Simulator**Alternate Path:**     Yes     No      **SRO Only:**  Yes     No      **Time Critical:**  Yes     No**Reference(s):**    DOP 5370-02, Rev.13  
                          DAN 902(3)-8 F-11, Rev. 05**Actual Testing Environment:**       Simulator     Control Room     In-Plant     Other**Testing Method:**       Simulate     PerformEstimated Time to Complete:    12 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?       Yes       NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:       Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_      **Date:** \_\_\_\_\_

### INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Maintenance has just been completed on 2B Bus Duct Blower.
3. Fill and vent of the 2B Bus Duct Blower cooling coil has been completed and TBCCW flow has been established.
4. DOP 5370-M1E1, UNIT 2 ISOLATED PHASE BUS DUCT COOLING SYSTEM, has been completed for starting the 2B Bus Duct Blower.
5. An EO is in the field standing by to verify Bus Duct Blower operation.

### INITIATING CUE

1. The Unit Supervisor has directed you to start 2B Bus Duct Blower for post maintenance testing and secure 2A Bus Duct Blower IAW DOP 5370-02 Step G.3.
2. Inform the Unit Supervisor when the task is complete.

## Job Performance Measure

**LIFT STATION – SWAP OPERATING PUMPS**

JPM Number: S-N-g

Revision Number: 02

Date: 11/18

Developed By:

\_\_\_\_\_

Exam Author

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Facility Representative

\_\_\_\_\_

Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- |       |  |   |
|-------|--|---|
| _____ |  | 1. Task description and number, JPM description and number are identified.  |
| _____ |  | 2. Knowledge and Abilities (K/A) references are included.   |
| _____ |  | 3. Performance location specified. (in-plant, control room, simulator, or other)  |
| _____ |  | 4. Initial setup conditions are identified.   |
| _____ |  | 5. Initiating cue (and terminating cue if required) are properly identified.  |
| _____ |  | 6. Task standards identified and verified by SME review.  |
| _____ |  | 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).   |
| N/A   |  | 8. If an alternate path is used, the task standard contains criteria for successful completion.   |
| _____ |  | 9. Verify the procedure(s) referenced by this JPM reflects the current revision:<br>Procedure <u>  DOP 4450-02  </u> Rev: <u>  35  </u><br>Procedure _____ Rev: _____<br>Procedure _____ Rev: _____ |
| _____ |  | 10. Verify cues both verbal and visual are free of conflict.  |
| _____ |  | 11. Verify performance time is accurate   |
| _____ |  | 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.   |
| _____ |  | 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:   |

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

**Revision Record (Summary)**

<b>Revision 01</b>	Bank JPM
<b>Revision 02</b>	Updated for 2019 ILT NRC Exam

## **SIMULATOR SETUP INSTRUCTIONS**

### **SIMULATOR SETUP INSTRUCTIONS**

1. Reset the Simulator to any IC (IC 217 was used for validation)

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

2. Secure the “A” Lift Pump
3. Ensure that the “B” Lift Pump is operating
4. Insert following Malfunctions and/or Remotes:
  - None
5. Setup the following Triggers:
  - None
6. This completes the setup for this JPM

### **DOCUMENT PREPARATION**

Copy of DOP 4450-02 with Prerequisites marked off

**INITIAL CONDITIONS**

1. You are an extra NSO.
2. The 2/3 “B” Lift Pump is required to be secured for maintenance.
3. An EO has been briefed and is waiting in the Lift Station.
4. The Pre-Job brief has been conducted.
5. Prerequisites are complete

**INITIATING CUE**

1. The Unit Supervisor has directed you to start the 2/3 “A” Lift Pump and then secure the 2/3 “B” Lift Pump, in accordance with DOP 4450-02.
2. Inform the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator’s Use:**

**Task Standard:** Examinee will start the 2/3 A Lift pump and secure the 2/3 B lift pump utilizing DOP 4450-02, LIFT STATION OPERATION.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....



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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>Note</b>	Provide the Examinee with the supplied copy of DOP 4450-02.				
1.	Verify the lift station supervisory LOCAL/REMOTE selector switch is in REMOTE.	Directs the EO to report the position of the LOCAL/REMOTE selector switch. (Step G.1.b)	___	___	___
<b>Cue</b>	The switch is in the REMOTE position. (Step G.1.b is complete)				
*2.	Selects <PUMP-A-SCREEN> touch button.	Touches <PUMP-A-SCREEN> touch button.	___	___	___
3.	Verify the shaft of 2/3 “A” Lift Pump is at rest.	Directs EO in field to verify the shaft of the 2/3 “A” Lift Pump is at rest. (Step G.1.c)	___	___	___
<b>Cue</b>	The 2/3 “A” Lift Pump’s shaft is at rest. (Step G.1.c is complete)				
<b>Note</b>	The examinee may notify the EO that he/she is ready to start the 2/3 “A” Lift Pump.				
<b>Cue</b>	I understand you are starting the 2/3 “A” Lift Pump.				
*4.	Selects <CLOSED>	Touches <CLOSED> touch button.	___	___	___
5.	Verify pump starts by observing LIFT PUMP BREAKER indicator changes to BLUE and indicates CLOSED.	LIFT PUMP BREAKER indicator changes to BLUE and indicates CLOSED.	___	___	___
6.	Verifies pump normal operation / stuffing box flow.	Directs EO to check the pump for normal operation and/or stuffing box flow. (Step G.7)	___	___	___
<b>Cue</b>	“A” Lift Pump is operating properly and there is a little water coming out of the stuffing box. (Step G.7 is complete)				
*7.	Selects <PUMP-B-SCREEN> touch button.	Touches <PUMP-B-SCREEN> touch button.	___	___	___
*8.	Selects <OPEN>	Touches <OPEN> touch button.	___	___	___
9.	Verify pump tripped by observing LIFT PUMP BREAKER indicator changes to GREEN and indicates TRIPPED.	LIFT PUMP BREAKER indicator changes to GREEN and indicates TRIPPED.	___	___	___
*10.	Verifies pump discharge vacuum breaker open.	Directs EO to check the pump discharge vacuum breaker open. (Step G.2.d)	___	___	___
<b>Cue</b>	“B” Lift Pump is secure and the discharge vacuum breaker is open (Step G.2.d is complete)				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
11.	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	—	—	—
<b>Cue</b>	Acknowledge report				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    Swap Lift Station Operating Pumps**JPM Number:**    S-N-g**Revision Number:** 02**Task Number and Title:** 275L016, Perform Lift Station Supervisory control room panel CRT operations.**K/A Number and Importance:**    400000.A4.01    3.1 / 3.0**Suggested Testing Environment:**      Simulator**Alternate Path:**     Yes     No      **SRO Only:**  Yes     No      **Time Critical:**  Yes     No**Reference(s):**    DOP 4450-02, Rev. 35**Actual Testing Environment:**       Simulator     Control Room     In-Plant     Other**Testing Method:**       Simulate     PerformEstimated Time to Complete:    12 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?       Yes       NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:       Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

#### **INITIAL CONDITIONS**

1. You are an extra NSO.
2. The 2/3 "B" Lift Pump is required to be secured for maintenance.
3. An EO has been briefed and is waiting in the Lift Station.
4. The Pre-Job brief has been conducted.
5. Prerequisites are complete

#### **INITIATING CUE**

1. The Unit Supervisor has directed you to start the 2/3 "A" Lift Pump and then secure the 2/3 "B" Lift Pump, in accordance with DOP 4450-02.
2. Inform the Unit Supervisor when the task is complete.

## Job Performance Measure

**SBGT – SHUTDOWN THE SYSTEM**

JPM Number: S-N-h

Revision Number: 12

Date: 11/18

Developed By:

\_\_\_\_\_

Exam Author

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Facility Representative

\_\_\_\_\_

Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- N/A 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure DOP 7500-01 Rev: 39  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

## **Revision Record (Summary)**

<b>Revision 11</b>	Bank JPM
<b>Revision 12</b>	Updated for 2019 ILT NRC Exam

## **SIMULATOR SETUP INSTRUCTIONS**

### **SIMULATOR SETUP INSTRUCTIONS**

1. Reset the Simulator to any IC (IC 216 was used for validation)

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

2. Ensure that the “B” SGBT train is in STBY.
3. Startup the “A” SGBT train and ensure all parameters are normal.
4. Insert following Malfunctions and/or Remotes:
  - None
5. Setup the following Triggers:
  - None
6. This completes the setup for this JPM

### **DOCUMENT PREPARATION**

Copy of DOP 7500-01 with Prerequisites marked off



**INITIAL CONDITIONS**

1. You are an extra NSO.
2. A HPCI surveillance was performed and is now completed.
3. SBGT was started per the HPCI surveillance.

**INITIATING CUE**

1. The Unit Supervisor has directed you to secure the “A” SBGT system in accordance with DOP 7500-01.
2. Inform the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator’s Use:**

**Task Standard:** Examinee will secure and place in a standby lineup the A SBGT system utilizing DOP 7500-01, STANDBY GAS TREATMENT SYSTEM OPERATION.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>Note</b>	Provide the Examinee with the supplied copy of DOP 7500-01.				
*1.	Place the 2/3A SBTG SELECT switch for the running train to the A(B) OFF position <u>AND</u> declare that SBTG TRAIN inoperable.	Rotates 2/3A SBTG C/S to the Off position. Informs the Unit Supervisor that the 2/3A SBTG train is inoperable.	___	___	___
<b>Cue</b>	As the Unit Supervisor, acknowledge the report that 2/3A SBTG train is inoperable.				
2.	Verify the following on the 2/3A SBTG train: <ul style="list-style-type: none"> <li>• 2/3 "A" AIR HEATER OFF</li> <li>• 2/3 "A" FAN OFF</li> <li>• SBTG DISCH FLOW FI 7540-13 decreases to ZERO flow</li> <li>• INLET DAM MO 2/3-7505A CLOSES</li> <li>• 2/3A FAN DISCH DAM MO 2/3-7507A CLOSES</li> <li>• OUTSIDE AIR DAM MO 2/3-7504A OPENS</li> </ul>	Verifies status of 2/3A SBTG train: <ul style="list-style-type: none"> <li>• GREEN light illuminated.</li> <li>• GREEN light illuminated</li> <li>• FI 7540-13 decreases to ZERO flow</li> <li>• GREEN light illuminated</li> <li>• GREEN light illuminated</li> <li>• GREEN light illuminated</li> </ul>	___	___	___
3.	Verify the following on the "B" SBTG train: <ul style="list-style-type: none"> <li>• INLET DAM MO 2/3-7505B CLOSED</li> <li>• OUTSIDE AIR DAM MO 2/3-7504B OPEN</li> <li>• FAN DISCH DAM MO 2/3-7507B CLOSED</li> </ul>	Verifies Damper status of 2/3B SBTG train: <ul style="list-style-type: none"> <li>• GREEN light illuminated</li> <li>• GREEN light illuminated</li> <li>• GREEN light illuminated</li> </ul>	___	___	___
*4.	Place the other 2/3B SBTG SELECT switch to the B PRI position.	Rotates 2/3B SBTG Select Switch to the B PRI position.	___	___	___
*5.	Place the previously running 2/3A SBTG SELECT switch to the A STBY position <u>AND</u> declare that SBTG TRAIN operable, if applicable.	Rotates 2/3A SBTG C/S to the A STBY position. Informs the Unit Supervisor that the 2/3A SBTG train is operable.	___	___	___
<b>Cue</b>	As the Unit Supervisor, acknowledge the report that 2/3A SBTG train is operable.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
6.	Verify annunciators 923-5 A-6 AND B-6, STBY GAS TRT SYS A(B) TROUBLE, are NOT in the alarm state.	Verifies annunciators 923-5 A-6 and B-6 extinguished.	___	___	___
<b>Cue</b>	Inform the candidate that the run time log will be addressed by another NSO.				
7.	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
<b>Cue</b>	Acknowledge report				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    SBTG – SHUTDOWN THE SYSTEM**JPM Number:**    S-N-h**Revision Number:** 12**Task Number and Title:** 261L003, Shutdown Standby Gas Treatment**K/A Number and Importance:**    261000.A4.06    3.3 / 3.6**Suggested Testing Environment:**      Simulator**Alternate Path:**     Yes     No      **SRO Only:**  Yes     No      **Time Critical:**  Yes     No**Reference(s):**    DOP 7500-01, Rev. 39**Actual Testing Environment:**       Simulator     Control Room     In-Plant     Other**Testing Method:**       Simulate     PerformEstimated Time to Complete:    12 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?       Yes       NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:       Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_      **Date:** \_\_\_\_\_

**INITIAL CONDITIONS**

1. You are an extra NSO.
2. A HPCI surveillance was performed and is now completed.
3. SBGT was started per the HPCI surveillance.

**INITIATING CUE**

1. The Unit Supervisor has directed you to secure the "A" SBGT system in accordance with DOP 7500-01.
2. Inform the Unit Supervisor when the task is complete.

## Job Performance Measure

**SBLC – Line Up SBLC Test Tank for Alternate Water Injection**

JPM Number: S-N-i

Revision Number: 14

Date: 11/18

Reviewed By:

\_\_\_\_\_  
Operations Representative\_\_\_\_\_  
Date

Approved By:

\_\_\_\_\_  
Training Department\_\_\_\_\_  
Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- |       |  |  |
|-------|--|--|
| _____ |  | 1. Task description and number, JPM description and number are identified.   |
| _____ |  | 2. Knowledge and Abilities (K/A) references are included.  |
| _____ |  | 3. Performance location specified. (in-plant, control room, simulator, or other)   |
| _____ |  | 4. Initial setup conditions are identified.  |
| _____ |  | 5. Initiating cue (and terminating cue if required) are properly identified.   |
| _____ |  | 6. Task standards identified and verified by SME review.   |
| _____ |  | 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).  |
| N/A   |  | 8. If an alternate path is used, the task standard contains criteria for successful completion.  |
| _____ |  | 9. Verify the procedure(s) referenced by this JPM reflects the current revision:<br>Procedure <u>DEOP 0500-03</u> Rev: <u>23</u><br>Procedure _____ Rev: _____<br>Procedure _____ Rev: _____ |
| _____ |  | 10. Verify cues both verbal and visual are free of conflict.   |
| _____ |  | 11. Verify performance time is accurate  |
| _____ |  | 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.  |
| _____ |  | 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:  |

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

## **Revision Record (Summary)**

<b>Revision 13</b>	Bank JPM
<b>Revision 14</b>	Updated for the 2019 ILT NRC exam



## **SIMULATOR SETUP INSTRUCTIONS**

**N/A:** In-Plant JPM

### **DOCUMENT PREPARATION**

Clean copy of DEOP 0500-03

**INITIAL CONDITIONS**

1. Unit 2 has scrammed and is experiencing a loss of coolant accident.

**INITIATING CUE**

1. The Unit Supervisor has directed you to line up and inject using the Standby Liquid Control Test Tank with Clean Demin per DEOP 0500-03.
2. Your Pre Job Brief has been completed.
3. Inform the Unit Supervisor when the task is complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will inject clean demin water into the RPV via the SBLC test tank utilizing DEOP 0500-03, ALTERNATE WATER INJECTION SYSTEMS.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
<b>Note</b>	Provide the Examinee with the supplied copy of DEOP 0500-03. The examinee is <u>NOT</u> required to obtain a key to open or close locked valves. The examinee is required only to identify which type of key is required to open the valve and where to obtain the key.				
1.	Proceeds to Step G.4 of DEOP 500-3.	Locates step G.4.	___	___	___
*2.	Unlock <u>AND</u> close 2-1101-4 SBLC STORAGE TK OUTLET SV	Unlocks and closes 2-1101-4, hand wheel rotated full CW, rising stem stops inward travel.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
*3.	Unlock <u>AND</u> close 2-1199-37, SBLC STORAGE TK OUTLET SV.	Unlocks and closes 2-1199-37 valve handle turned CW 1/4 turn until handle is perpendicular with line.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
*4.	Unlock AND open 2-1101-8, SBLC TEST TK OUTLET SV.	Unlocks and opens 2-1101-8 valve handwheel rotated full CCW, rising stem stopped.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
<b>Note</b>	The 2-4315-500 is greater than 7 feet in the air. The Examinee should verify that RP has conducted surveys (may forego this as the cue states that a LOCA is occurring)				
<b>Cue</b>	Report as RP that required surveys have been performed.				
*5.	Open 2-4315-500, CLEAN DEMIN WTR SUPPLY TO SBLC SV.	Opens 2-4315-500. hand wheel rotated full CCW, Rising Stem stopped	___	___	___
<b>Cue</b>	The valve is in the position as described.				
*6.	Open 2-1101-7, CLEAN DEMIN WTR TO SBLC TEST TK SV.	Opens 2-1101-7 hand wheel rotated full CCW until stem and hand wheel backed out	___	___	___
<b>Cue</b>	The valve is in the position as described.				
<b>Note</b>	The examinee may simulate opening the test tank cover after this step or after the SBLC pumps have been started.				
<b>Cue</b>	If the correct valves have been opened, then reply: "that there is a sound of water entering the test tank."				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*7.	Start both SBLC pumps by placing SBLC INJECTION CONTROL switch on panel 902-5 to SYSTEM 1&2 <u>OR</u> SYSTEM 2&1..	Contacts Unit 2 NSO and requests to start <u>BOTH</u> SBLC Pumps.	___	___	___
<b>Cue</b>	Respond as NSO, "The 2A and 2B SBLC pumps have been started."				
<b>Note</b>	The examinee should simulate opening the test tank cover (if not done previously) to observe level. Once the tank is open (simulate) provide the following CUE.				
<b>Cue</b>	The SBLC Test Tank level is about 65% full and rising.				
<b>Note</b>	Step g. is N/A as Clean Demin water is available.				
8.	<u>IF</u> clean demin water is available, <u>THEN</u> throttle 2-1101-7, CLEAN DEMIN WTR TO SBLC TEST TK SV, until level in tank is stabilized.	Throttles 2-1101-7, to stabilize level.	___	___	___
<b>Cue</b>	Unit 2 SBLC Test Tank level is steady, about 75% full.				
9.	Inform Unit Supervisor task is complete	Task completion reported to Unit Supervisor	___	___	___
<b>Cue</b>	Acknowledge the report.				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:** SBLC – Line Up SBLC Test Tank for Alternate Water Injection**JPM Number:** S-N-i**Revision Number:** 14**Task Number and Title:** 295L088, Line Up SBLC Test Tank for Alternate Water Injection**K/A Number and Importance:** 295031.EA1.08    3.8 / 3.9**Suggested Testing Environment:** Plant**Alternate Path:**  Yes     No    **SRO Only:**  Yes     No    **Time Critical:**  Yes     No**Reference(s):** DEOP 0500-03, Rev. 23**Actual Testing Environment:**     Simulator     Control Room     In-Plant     Other**Testing Method:**     Simulate     PerformEstimated Time to Complete: 11 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?     Yes     NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:     Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_    **Date:** \_\_\_\_\_

**INITIAL CONDITIONS**

1. Unit 2 has scrammed and is experiencing a loss of coolant accident.

**INITIATING CUE**

1. The Unit Supervisor has directed you to line up and inject using the Standby Liquid Control Test Tank with Clean Demin per DEOP 0500-03.
2. Your Pre Job Brief has been completed.
3. Inform the Unit Supervisor when the task is complete.

## Job Performance Measure

**RPS – Transfer U2 RPS to the Reserve Power Supply**

JPM Number: S-N-j

Revision Number: 05

Date: 11/18

Developed By:

\_\_\_\_\_

Exam Author

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Facility Representative

\_\_\_\_\_

Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- |       |  |   |
|-------|--|---|
| _____ |  | 1. Task description and number, JPM description and number are identified.  |
| _____ |  | 2. Knowledge and Abilities (K/A) references are included.   |
| _____ |  | 3. Performance location specified. (in-plant, control room, simulator, or other)  |
| _____ |  | 4. Initial setup conditions are identified.   |
| _____ |  | 5. Initiating cue (and terminating cue if required) are properly identified.  |
| _____ |  | 6. Task standards identified and verified by SME review.  |
| _____ |  | 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).   |
| N/A   |  | 8. If an alternate path is used, the task standard contains criteria for successful completion.   |
| _____ |  | 9. Verify the procedure(s) referenced by this JPM reflects the current revision:<br>Procedure <u>  DOP 0500-03  </u> Rev: <u>  59  </u><br>Procedure _____ Rev: _____<br>Procedure _____ Rev: _____ |
| _____ |  | 10. Verify cues both verbal and visual are free of conflict.  |
| _____ |  | 11. Verify performance time is accurate   |
| _____ |  | 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.   |
| _____ |  | 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:   |

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



**Revision Record (Summary)**

<b>Revision 04</b>	Bank JPM
<b>Revision 05</b>	Updated for the 2019 ILT NRC Exam

**SIMULATOR SETUP INSTRUCTIONS**

**N/A:** In-Plant JPM

**Note:** Clean copy of DOP 0500-03, Reactor Protection System Power Supply Operation, to provide to examinee.

**Note:** DS key needed to enter Aux Electric Equipment Room

**INITIAL CONDITIONS**

1. Unit 2 was at 70% power when the 2A RPS MG Set tripped; the unit is still on line at 70% power.
2. All applicable prerequisites of DOP 0500-03 have been met.
3. Per the Unit 2 Unit Supervisor, the jumpers for bypassing SBGT Actuation and Secondary Containment Isolation will not be installed since actuations have already occurred. When that step is reached in the DOP, N/A the procedure step.
4. OPRMs 1, 2, 3, and 7 have been bypassed.
5. Your Pre-Job Brief has been completed.

**INITIATING CUE**

1. You have been directed by the Unit 2 Unit Supervisor to perform the in-plant actions to transfer the Unit 2 RPS Bus B from its NORMAL to RESERVE power supply in accordance with DOP 0500-03, "RPS Power Supply Operation", Step G.3, up to the point of resetting the half scram.
2. Inform the Unit 2 Unit Supervisor when the in-plant actions are complete.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will re-power RPS Bus B from MCC 25-2 (reserve power supply) utilizing DOP 0500-03, REACTOR PROTECTION SYSTEM POWER SUPPLY OPERATION.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>Note</b>	Steps 1 and 2 can be performed in reverse order				
1.	Obtain key (#209 for Unit 2) for RPS Reserve Power Supply Key Operated Interlock from the WEC.	Examinee should state how key is obtained. Not required to actually obtain key.	___	___	___
2.	Verify all applicable prerequisites have been satisfied.	Prerequisites verified (supplied in cue)	___	___	___
<b>Note</b>	MCC 25-2 is located in Unit 2 TB; 517' elevation; U2 SAC Area				
3.	Verify closed MCC 25-2 Breaker A4, 2-500 RX PROTECTION SYS BUSES RESERVE FEED	Breaker verified closed.	___	___	___
4.	Verify closed MCC 25-2 Breaker A5, 2-500 RX PROTECTION SAFETY SYS & INST BUS BACKUP TRANSFORMER	Breaker verified closed.	___	___	___
<b>Note</b>	The following is performed in the Auxiliary Electric Equipment Room.				
5.	Verify POWER IN, RPS MOTOR GEN red indicating light On at EPA Relay 2AB-1.	Red indicating light verified ON.	___	___	___
<b>Cue</b>	Power In light at EPA 2AB-1 is On.				
6.	Verify the following indicating lights are OFF at EPA Relay 2AB-1: <ul style="list-style-type: none"> <li>• OVER VOLTAGE</li> <li>• UNDER VOLTAGE</li> <li>• UNDER FREQUENCY</li> </ul>	Indicating lights verified OFF.	___	___	___
<b>Cue</b>	Trip lights at EPA 2AB-1 are Off.				
7.	Verify closed breaker on EPA Relay 2AB-1.	Breaker verified closed.	___	___	___
<b>Cue</b>	The breaker is in the position you described.				
8.	Ensure POWER OUT, RPS BUS red indicating light ON at EPA Relay 2AB-1.	Red indicating light ON.	___	___	___
<b>Cue</b>	The light is in the condition you described.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
9.	Verify POWER IN, RPS RESERVE FEED red indicating light ON at EPA Relay 2AB-2.	Red indicating light ON.	___	___	___
<b>Cue</b>	The light is in the condition you described.				
10.	Verify the following indicating lights are OFF at EPA Relay 2AB-2: <ul style="list-style-type: none"> <li>• OVER VOLTAGE</li> <li>• UNDER VOLTAGE</li> <li>• UNDER FREQUENCY</li> </ul>	Indicating lights verified OFF.	___	___	___
<b>Cue</b>	Trip lights at EPA 2AB-2 are Off.				
11.	Verify closed breaker on EPA Relay 2AB-2.	Breaker verified closed.	___	___	___
<b>Cue</b>	The breaker is in the position you described.				
12.	Ensure POWER OUT, RPS BUS red indicating light ON at EPA Relay 2AB-2.	Red indicating light ON.	___	___	___
<b>Cue</b>	The light is in the condition you described.				
13.	Notify Control Room of supplying power to RPS Bus.	Control Room notified of supplying power to RPS Bus B.	___	___	___
<b>Cue</b>	Acknowledge Report.				
<b>Note</b>	Step G.3.l. is 'N/A'				
14.	Bypass APRM #1.	Contacts the control room to have the NSO bypass APRM #1.	___	___	___
<b>Cue</b>	APRM #1 is bypassed.				
<b>Note</b>	Step G.3.m.(2) is N/A per Initiating Cue				
<b>Note</b>	Step G.3.m.(3) is Condition met per Initiating Cue				
*15.	Unlock FROM MCC 25-2 RPS BUS RESERVE breaker.	FROM MCC 25-2 RPS BUS RESERVE breaker unlocked.	___	___	___
<b>Cue</b>	The locking mechanism is in the condition you described.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*16.	Open 2A M-G SET FEED TO 2B RPS BUS NORMAL breaker.	2A M-G SET FEED TO 2B RPS BUS NORMAL breaker opened.	___	___	___
<b>Cue</b>	The breaker is in the position you described.				
<b>Note</b>	If the examinee incorrectly opens the 2B M-G SET FEED TO 2A RPS BUS NORMAL breaker, provide the following cue: "The Unit 2 NSO reports Unit 2 has scrambled."				
*17.	Wait 1 second, then close FROM MCC 25-2 RPS BUS RESERVE breaker.	FROM MCC 25-2 RPS BUS RESERVE breaker closed after a 1 second wait.	___	___	___
<b>Cue</b>	The breaker is in the position you described.				
18.	Informs Unit Supervisor that task is complete up to point of resetting the half scram.	Informs Unit Supervisor that task is complete.	___	___	___
<b>Cue</b>	Acknowledge report of task completion.				
<b>Cue</b>	If student attempts to continue procedure, state: "Another operator will continue from here in the procedure."				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:**    RPS – Transfer U2 RPS to the Reserve Power Supply**JPM Number:**    S-N-j**Revision Number:** 05**Task Number and Title:**    212L001, Perform RPS Power Supply Operations**K/A Number and Importance:**    212000.K4.03    3.0 / 3.1**Suggested Testing Environment:**    Plant**Alternate Path:**     Yes     No    **SRO Only:**  Yes     No    **Time Critical:**  Yes     No**Reference(s):**    DOP 0500-03, Rev. 59**Actual Testing Environment:**     Simulator     Control Room     In-Plant     Other**Testing Method:**     Simulate     PerformEstimated Time to Complete:    20 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?     Yes     NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:     Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### **INITIAL CONDITIONS**

1. Unit 2 was at 70% power when the 2A RPS MG Set tripped; the unit is still on line at 70% power.
2. All applicable prerequisites of DOP 0500-03 have been met.
3. Per the Unit 2 Unit Supervisor, the jumpers for bypassing SBGT Actuation and Secondary Containment Isolation will not be installed since actuations have already occurred. When that step is reached in the DOP, N/A the procedure step.
4. OPRMs 1, 2, 3, and 7 have been bypassed.
5. Your Pre-Job Brief has been completed.

### **INITIATING CUE**

1. You have been directed by the Unit 2 Unit Supervisor to perform the in-plant actions to transfer the Unit 2 RPS Bus B from its NORMAL to RESERVE power supply in accordance with DOP 0500-03, "RPS Power Supply Operation", Step G.3, up to the point of resetting the half scram.
2. Inform the Unit 2 Unit Supervisor when the in-plant actions are complete.



## Job Performance Measure

**CRD – Swap CRD Suction Filters**

JPM Number: S-N-k

Revision Number: 00

Date: 11/18

Developed By:

\_\_\_\_\_

Exam Author

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Facility Representative

\_\_\_\_\_

Date

### JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified. (in-plant, control room, simulator, or other)
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating cue (and terminating cue if required) are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (\*).
- N/A 8. If an alternate path is used, the task standard contains criteria for successful completion.
- \_\_\_\_\_ 9. Verify the procedure(s) referenced by this JPM reflects the current revision:  
 Procedure DOP 0300-12 Rev: 18  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_  
 Procedure \_\_\_\_\_ Rev: \_\_\_\_\_
- \_\_\_\_\_ 10. Verify cues both verbal and visual are free of conflict.
- \_\_\_\_\_ 11. Verify performance time is accurate
- \_\_\_\_\_ 12. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- \_\_\_\_\_ 13. When JPM is initially validated, sign and date JPM cover page. Subsequent validations, sign and date below:

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

## **Revision Record (Summary)**

**Revision 00**                      New JPM for 2019 ILT NRC Exam

## SIMULATOR SETUP INSTRUCTIONS

**N/A:** In-Plant JPM

**Note:** Clean copy of DOP 0300-12, CONTROL ROD DRIVE SYSTEM SUCTION FILTER REPLACEMENT

**INITIAL CONDITIONS**

1. Unit 2 is operating at 100% power.
2. 2A CRD pump and 2A CRD pump suction filter are in service.
3. The 2A ROD DRIVE PP SUCT LO alarm is in.

**INITIATING CUE**

1. The Unit 2 Unit Supervisor has directed you to place the 2B CRD suction filter into service per DOP 0300-12 and isolate the 2A CRD suction filter so it can be replaced.
2. Notify the Unit Supervisor upon completion.

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

.....

**Information For Evaluator's Use:**

**Task Standard:** Examinee will fill and vent the 2B CRD suction filter, place the 2B suction filter into service then isolate the 2A CRD suction filter utilizing DOP 0300-12, CONTROL ROD DRIVE SYSTEM SUCTION FILTER REPLACEMENT.

UNSAT requires written comments on respective step.

\* Denotes critical steps.

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

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

The timeclock starts when the candidate acknowledges the initiating cue.

.....

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

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<b>Note</b>	Hand the Examinee the provided copy of DOP 0300-12.				
1.	Proceed to Step G.1 of DOP 0300-12.	LOCATES step G.1	___	___	___
<b>Note</b>	If a First Check is requested, the Examinee should perform their part of the check and then respond – “First check completed.” If a peer check is requested, respond – ‘No peer check is available.’				
<b>Cue</b>	If the examinee checks 2A CRD suction filter dP, Indicated dP is 8 psid.				
2.	Verify OPEN 2-0301-14B, U2 CRD PMPS B SUCT FILT INLET VLV.	Verifies 2-0301-14B stem/handwheel backed out.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
3.	Verify OPEN 2-0301-15B, U2 CRD PMPS B SUCT FILT OUTLET VLV.	Verifies 2-0301-15B stem/handwheel backed out.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
*4.	Open 2-0301-500B, U2 CRD PMPS B SUCT FILT VENT VLV.	Rotates 2-0301-500B CCW until the handwheel stops.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
<b>Cue</b>	A solid stream of water is flowing from the vent.				
*5.	<u>WHEN</u> a solid stream of water issues from vent, <u>THEN</u> close 2-0301-500B, U2 CRD PMPS B SUCT FILT VENT VLV.	Rotates 2-0301-500B CW until the handwheel stops.	___	___	___
<b>Cue</b>	The valve is in the position as described, and flow has stopped.				
<b>Note</b>	2-0301-31, CRD PMPS SUCT CROSSTIE VLV, must be open to prevent over pressurization of idle CRD pump suction line.				
*6.	Open 2-0301-31, U2 CRD PMPS SUCT CROSSTIE VLV.	Rotates 2-0301-31 CCW until stem stops moving outward.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
7.	Monitor dP on filter just placed in service as off-going filter is removed from service.	Checks dP on DPI 2-302-100B, 2B CRD WATER PUMP SUCTION STRAINER DP.	___	___	___
<b>Cue</b>	Indicated dP is 2 psid. (2B suction filter indicated dP will be 2 psid for the remainder of the JPM)				
<b>Cue</b>	If examinee checks 2A suction filter dP, Indicated dP is 4 psid.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*8.	Close 2-0301-14A, U2 CRD PMPS A SUCT FILT INLET VLV.	Rotates 2-0301-14A CW until stem stops moving inward.	___	___	___
<b>Cue</b>	The valve is in the position as described.				
*9.	Close 2-0301-15A, U2 CRD PMPS A SUCT FILT OUTLET VLV.	Rotates 2-0301-15A CW until stem stops moving inward.	___	___	___
<b>Note</b>	After 2-0301-15A is closed, the JPM is complete.				
<b>Cue</b>	Another operator will complete the remaining DOP 0300-12 actions.				
10.	Notify Unit Supervisor that 2B CRD suction filter is in service and the 2A CRD suction filter is isolated.	Notifies Unit Supervisor that the task is complete.	___	___	___
<b>Cue</b>	Acknowledge the report.				
<b>END</b>					

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

**JPM SUMMARY****Operator's Name:** \_\_\_\_\_**Emp. ID#:** \_\_\_\_\_**Job Title:**       RO     SRO     SRO Cert**JPM Title:** CRD – Swap CRD Suction Filters**JPM Number:** S-N-k**Revision Number:** 00**Task Number and Title:** 201N006 Change out the CRD suction filter cartridges (DOP 0300-12)**K/A Number and Importance:** 201001.A2.06    2.9 / 2.9**Suggested Testing Environment:** Plant**Alternate Path:**  Yes     No    **SRO Only:**  Yes     No    **Time Critical:**  Yes     No**Reference(s):** DOP 0300-12, Rev. 18**Actual Testing Environment:**     Simulator     Control Room     In-Plant     Other**Testing Method:**     Simulate     PerformEstimated Time to Complete: 15 minutes**Actual Time Used:** \_\_\_\_\_ minutes**EVALUATION SUMMARY:**Were all the Critical Elements performed satisfactorily?     Yes     NoThe operator's performance was evaluated against standards contained within this JPM and has been determined to be:     Satisfactory     Unsatisfactory**Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Evaluator's Name (Print):** \_\_\_\_\_**Evaluator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_



**INITIAL CONDITIONS**

1. Unit 2 is operating at 100% power.
2. 2A CRD pump and 2A CRD pump suction filter are in service.
3. The 2A ROD DRIVE PP SUCT LO alarm is in.

**INITIATING CUE**

1. The Unit 2 Unit Supervisor has directed you to place the 2B CRD suction filter into service per DOP 0300-12 and isolate the 2A CRD suction filter so it can be replaced.
2. Notify the Unit Supervisor upon completion.