Job Performance Measure

ASD – Take Action for Recirc Pump Trip – (A)

JPM Number: S-N-a

Revision Number: 00

Date: 04 / 2017

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 DGP 03-01 Rev: 132
Procedure DOA 0202-01 Rev: 044
Procedure DOP 0202-03 Rev: 044

_____ 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, Developed for 2017-301 NRC Exam

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to an IC with the following: (IC 164 was used for validation)
   - Adjust core flow to establish recirc pump speeds < 68%
   - Verify FCL > 68%

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. Insert following Malfunctions and/or Remotes:
   - None
   - Verify
   - Run CAEP – ASD JPM.cae
3. A copy of DGP 03-01, Power Changes, marked up to the point of raising power with Recirc Flow.
4. A Maneuvering REMA marked up to the point of raising power with Recirc Flow.
5. Clean copy of DOA 0202-01, Recirculation (Recirc) Pump Trip – One of Both Pumps.
6. Clean copy of DOP 0202-03, REACTOR RECIRCULATION FLOW CONTROL SYSTEM OPERATION
7. This completes the setup for this JPM.

INITIAL CONDITIONS

1. You are the Unit 2 NSO.
2. Tech Spec 3.3.1.3 has been entered due to OPRM trip capability not maintained.
3. Alternate method to detect and suppress thermal hydraulic instability oscillations has been initiated.
4. Unit 2 load was dropped 2 hours ago per TSO direction.
5. The TSO has requested raising Unit 2 load to 750 MWE.

INITIATING CUE

1. The Unit supervisor has directed you to raise Unit 2 load to 750 MWe using Recirc Flow in accordance with DGP 03-01 Power Changes step G.5.
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:

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE: Provide the Examinee with the supplied copy of: ➢ Maneuvering REMA ➢ DOP 0202-03, Reactor Recirculation Flow Control System Operation ➢ DGP 03-01, Power Changes During performance of this JPM, whenever the Examinee obtains a copy of DOA 0202-01, Recirculation (Recirc) Pump Trip – One of Both Pumps, hand him the supplied copy of it.					
*01	Depresses one of the Panel 902-5 Recirc Master Manual Control raise speed pushbuttons. (Repeats this step to continue load pickup)	Depresses one of the following Panel 902-5 Recirc Master Manual Control raise speed pushbuttons 0.5 sec, but < 10 sec: ❖ RAISE HIGH (0.06%) ❖ RAISE MED (0.18%) ❖ RAISE LOW (0.90%)	___	___	___
02	Verifies expected response after each speed bump	Verifies Recirc Pump speeds, Core Flow, Rx Power and other plant parameters change as expected	___	___	___
NOTE: An automatic Trigger is setup to trip 2A Recirc Pump when Generator load reaches xxx MWe					
BEGIN ALTERNATE PATH					
03	Announces 2A Recirc Pump trip and enters DOA 0202-01, Recirculation (Recirc) Pump Trip – One Or Both Pumps	Announces 2A Recirc Pump trip and enters DOA 0202-01, Recirculation (Recirc) Pump Trip – One or Both Pumps	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
04	Determines operating in the Nominal Feedwater Heating Region of Figure 1, Feedwater Heating Regions, and goes to the Subsequent Operator Actions (Nominal Feedwater Heating) Flow Chart	Determines operating in the Nominal Feedwater Heating Region of Figure 1, Feedwater Heating Regions, and goes to the Subsequent Operator Actions (Nominal Feedwater Heating) Flow Chart	___	___	___
*05	Determines a reactor scram is required based on plant conditions.	Depresses both scram pushbuttons and places the Mode Switch to S/D	___	___	___
CUE: After a reactor scram is inserted, state “another operator will carry out balance of plant scram actions.”					
06	Closes 2A Recirc Pump discharge valve MO 2-0202-5A	Rotates 2A PP DISCH VLV MO 2-202-5A CS to the CLOSE position. Verifies the valve’s CLOSE light lit and OPEN light out	___	___	___
CUE: After MO 2-0202-5A indicates closed, Inform the examinee that 5 minutes has elapsed.					
*07	After 5 minutes, opens Recirc Pump discharge valve previously closed	Rotates 2A PP DISCH VLV MO 2-202-5A CS to the OPEN position Verifies the valve’s OPEN light lit and CLOSE light out	___	___	___
CUE: Inform the examinee, “another operator will continue with scram actions, task complete.”					

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **ASD – Take Action for Recirc Pump Trip – (A)**

JPM Number: **S-N-a** Revision Number: **00**

Task Number and Title: **202L024, Change Recirc Pump Speed on Both Recirc Pumps Using ASD Tandem Controls**

K/A Number and Importance: **202001 A4.01 3.7 / 3.7**

Suggested Testing Environment: **Simulator**

Alternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No

Reference(s): **DOP 0202-03, Rev 044, REACTOR RECIRCULATION FLOW CONTROL SYSTEM OPERATION; DOA 0202-01, Rev 044, RECIRCULATION (RECIRC) PUMP TRIP - ONE OR BOTH PUMPS; DGP 03-01, Rev 132, POWER CHANGES**

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated 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: _____

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Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. You are the Unit 2 NSO.
2. Tech Spec 3.3.1.3 has been entered due to OPRM trip capability not maintained.
3. Alternate method to detect and suppress thermal hydraulic instability oscillations has been initiated.
4. Unit 2 load was dropped 2 hours ago per TSO direction.
5. The TSO has requested raising Unit 2 load to 750 MWE.

INITIATING CUE

1. The Unit supervisor has directed you to raise Unit 2 load to 750 MWe using Recirc Flow in accordance with DGP 03-01 Power Changes step G.5.
2. Inform the Unit Supervisor when the task is complete.

Job Performance Measure

Secure a RFP

JPM Number: S-N-b

Revision Number: 00

Date: 04 / 2017

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 3200-05 Rev: 40
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, Developed for 2017-301 NRC Exam

SIMULATOR SETUP INSTRUCTIONS

1. The simulator can be in any IC (IC 165 used for validation), but feed flow must be < 9.8 X 10^6 lbm/hr

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. If using IC 12 for this JPM, reduce reactor power by first reducing FCL to <93% and then reducing recirc flow to achieve desired feed flow.
3. Prepare a copy of DOP 3200-05 that is marked up (place kept) through step G.6

INITIAL CONDITIONS

NOTE: Prior to reading task conditions give examinee a copy of DOP 3200-05

1. The 2C RFP is to be secured to due to reducing power for scheduled maintenance
2. All prerequisites for securing the 2C RFP have been completed
3. An EO has been briefed and is standing by for this operation
4. Zinc injection is lined up to the 2B RFP

INITIATING CUE

The Unit Supervisor has directed you to secure the 2C reactor feed pump IAW DOP 3200-05, step G.7

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

Information For Evaluator's Use:

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
01	Proceeds to step G.7 of DOP 3200-05	Proceeds to the correct step for securing the RFP	___	___	___
02	Place the 2C AUX OIL PP control switch in AUTO	Places 2C AUX OIL PP C/S to AUTO and verifies amber AUTO TRIP light illuminated	___	___	___
*03	Open 2C RFP recirculation valve	Places 2C RFP RECIRC VLV PCV 2-3201C C/S to OPEN and verifies red OPEN light illuminated	___	___	___
04	Verify RPV level stable	Observes 902-5 panel NR and/or MR level indication	___	___	___
05	Close the RFP discharge valve of the RFP which is to be stopped	Places 2C RFP DISCH VLV MO 2-3201C C/S to CLOSE and verifies dual valve indication CLOSED and OPEN lights illuminated	___	___	___
06	Verify RPV level stable	Observes 902-5 panel NR and/or MR level indication	___	___	___
07	Verify the RFP discharge valve of the RFP which is to be stopped is fully closed	Verifies RFP DISCH VLV, MO 2-3201C green OPEN light is out and red CLOSED light illuminated	___	___	___
*08	Stop the associated RFP	Places 2C RFP C/S to TRIP and verifies green OFF light illuminated	___	___	___
09	As the RFP slows down, verify the associated Auxiliary Oil Pump automatically starts	Verifies 2C AUX OIL PP blue ON light illuminated	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
10	Verify the running current of the operating RFP(s) is below 1115 amps	Verifies 2A and 2B PP AMPS <1115 amps	___	___	___
11	Close 2C RFP recirculation valve	Places 2C RFP RECIRC VLV PCV 2-3201C C/S to CLOSE and verifies GREEN CLOSED light illuminated	___	___	___
12	Direct an Equipment Operator to verify the 2C RFP has come to rest	Contact the EO to verify 2C RFP is at rest	___	___	___
CUE:	As the EO in the RFP room, inform the examinee "2C RFP is at rest"				
*13	Open 2C RFP discharge valve	Places 2C RFP DISCH VLV MO 2-3201C C/S to OPEN and verifies green OPEN light illuminated	___	___	___
14	Direct an Equipment Operator to inspect 2C RFP to ensure the pump shaft is NOT rotating in the reverse direction	Contact the EO to verify 2C RFP is NOT rotating in the reverse direction	___	___	___
CUE:	As the EO in the RFP room, inform the examinee "2C RFP is still at rest"				
CUE:	Inform the examinee that another NSO will complete the procedure for securing 2C RFP				
15	Informs US task is complete	Informs US task is complete	___	___	___
CUE:	Respond as US, Acknowledge task completion				
END					

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Secure a RFP**
JPM Number: **S-N-b** Revision Number: **00**
Task Number and Title: **259L005 Shutdown a reactor feed pump**
K/A Number and Importance: **2590001A4.04 3.1 / 2.9**
Suggested Testing Environment: **Simulator**
Alternate Path: ☐ Yes ☒ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No
Reference(s): **DOP 3200-05, Rev 040, REACTOR FEED PUMP SHUTDOWN**

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 ☐ No

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

Comments: _____

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Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. The 2C RFP is to be secured to due to reducing power for scheduled maintenance
2. All prerequisites for securing the 2C RFP have been completed
3. An EO has been briefed and is standing by for this operation
4. Zinc injection is lined up to the 2B RFP

INITIATING CUE

The Unit Supervisor has directed you to secure the 2C reactor feed pump IAW DOP 3200-05, step G.7

Job Performance Measure

Main Steam – Unisolate One Line Using Alternate Method

JPM Number: S-N-c

Revision Number: 01

Date: 04 / 2017

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 0250-02 Rev: 14
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, Developed for 2010 Cert Exam

Revision 01, Revised for 2017-301 NRC Exam

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC 166 (<50% power).

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. Power needs to be low enough so that isolating one main steam line will NOT cause a Group 1 high flow isolation.
3. Close 'C' Main Steam Line Isolation Valves:
   - AO-2-203-1C
   - AO-2-203-2C
4. Verify Main Steam Line drain valves closed:
   - MO 2-220-1, 2, 3 & 4
   - MO 2-220-90A, B, C & D
5. Place O.O.S. cards on Main Steam Line drain valves:
   - 2-220-1 MSL DRN VLV
   - 2-220-2 MSL DRN VLV
6. Insert following Malfunctions and/or Remotes:
   - None
7. Setup the following Triggers:
   - None
8. Clean copy of DOP 0250-02

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Following maintenance work on the AO 2-203-2C MSIV, the “C” Main Steam Line is ready to be unisolated.

INITIATING CUE

1. The Unit Supervisor has directed you to unisolate the “C” Main Steam Line in accordance with DOP 0250-02, step G.4.
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:

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE: Provide the Examinee with the supplied copy of DOP 0250-02					
1.	Reviews procedure	Determines that the MOs 2-220-1 AND 2-220-2 are O.O.S. closed and NOT available	___	___	___
2.	Determines proper method	Selects the **alternate** method to unisolated, based on MOs 2-220-1 NOT being available	___	___	___
BEGIN ALTERNATE PATH					
3.	Contacts Main Steam system engineer for concurrence to unisolated the 2C Main Steam Line using the alternate method.	Indicates he/she would call the system engineer or ask Unit Supervisor.	___	___	___
CUE	Inform the Examinee that the Main Steam system engineer has provide concurrence to unisolated the 2C main Steam Line using the alternate method				
*4.	Open MO 2-220-3 MSL DRN VLV.	RED light illuminated.	___	___	___
*5.	Open MO 2-220-90C MSL DRN VLV.	RED light illuminated.	___	___	___
6.	Wait a minimum of 5 minutes.	5 minutes elapsed OR verbal cue received.	___	___	___
CUE	Inform examinee that 5 minutes has elapsed				
*7.	Open AO 2-203-2C MSIV.	GREEN light illuminated.	___	___	___
8.	Wait a minimum of 30 minutes.	30 minutes elapsed OR verbal cue received.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	Inform examinee that 30 minutes has elapsed				
*9.	Open AO 2-203-1C MSIV.	GREEN light illuminated.	___	___	___
*10.	Close MO 2-220-90C MSL DRN VLV.	GREEN light illuminated.	___	___	___
*11.	Close MO 2-220-3 MSL DRN VLV.	GREEN light illuminated.	___	___	___
12.	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
CUE	Acknowledge report of task completion				
END					

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☒ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **Main Steam – Unisolate One Line Using Alternate Method**
JPM Number: **S-N-c** Revision Number: **00**
Task Number and Title: **239L004 Unisolate One Main Steam Line**
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): **DOP 0250-02, Rev 014, ISOLATING AND UN-ISOLATING ONE MAIN STEAM LINE**

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **12 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: _____

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Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Following maintenance work on the AO 2-203-2C MSIV, the “C” Main Steam Line is ready to be unisolated.

INITIATING CUE

1. The Unit Supervisor has directed you to unisolate the “C” Main Steam Line in accordance with DOP 0250-02, step G.4.
2. Inform the Unit Supervisor when the task is complete.

Job Performance Measure

LPCI – Mitigate High Suction Pressure While Lining Up to CST Suction for Injection

JPM Number: S-N-d

Revision Number: 10

Date: 04 / 2017

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 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 06, Bank JPM

Revision 07, Revised for ILT 12-1 Cert Exam

Revision 08, Revised for ILT 14-1 NRC Exam

Revision 09, Revised for ILT 15-1 (2016-301) NRC Exam

Revision 10, Revised for ILT 16-1 (2017-301) NRC Exam

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any IC (IC 165 was used for validation)

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. Verify NO LPCI pumps operating
3. Insert following Malfunctions and/or Remotes:
    - Setup Trigger 15 to open 2C LPCI PP suction to CST: irf lpcstppc (15) true
4. Setup the following Triggers
    - None
5. Provide a marked up copy of DEOP 0500-03, Alternate Water Injection Systems

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO
2. A transient has occurred requiring Alternate Water Injection

Examiner Note: The following parameters do not match the simulator indications

3. RPV level is –65 inches and slowly dropping
4. RPV pressure is 375 psig and slowly dropping

INITIATING CUE

1. The Unit Supervisor has directed you to line up the 2A LPCI pump with CST suction with 2A LPCI pump running ready to inject
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:

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
	NOTE: Provide the Examinee with the provided copy of DEOP 0500-03				
1.	Place 2A LPCI PP control switch in Pull-to-Lock	ALL lights extinguished	___	___	___
2.	Place PP SUCT VLV MO 2-1501-5A control switch in Manual Bypass and verify closed	RED light illuminated	___	___	___
3.	Verify MIN FLOW VLV 2-1501-13A closed if not needed	RED light illuminated	___	___	___
CUE	2-1501-13A is not required for 2B LPCI pump				
	NOTE: The following valves may be verified in any order				
4.	Verify TORUS CLG/TEST valves 2-1501-20A and 2-1501-38A closed	GREEN lights illuminated	___	___	___
5.	Verify TORUS SPRAY valves 2-1501-19A and 2-1501-18A closed	GREEN lights illuminated	___	___	___
6.	Verify DW SPRAY valves 2-1501-28A and 2-1501-27A closed	GREEN lights illuminated	___	___	___
7.	Verify TORUS CLG/TEST valves 2-1501-20B and 2-1501-38B closed	GREEN lights illuminated	___	___	___
8.	Verify TORUS SPRAY valves 2-1501-19B and 2-1501-18B closed	GREEN lights illuminated	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
9.	Verify DW SPRAY valves 2-1501-28B and 2-1501-27B closed	GREEN lights illuminated	___	___	___
NOTE: For bleeding off the pressure in the suction piping, the examinee may communicate each of the following steps individually OR instruct the EO to complete actions of DEOP 0500-03 step G.12.c.(5 thru 8)					
CUE	When directed, as the EO in the field, communicate that the steps (either individually or as a whole) have been completed				
10.	Unlock AND open 2-1501-74A, U2 LPCI A PMP VENT VLV	Instructs EO to complete step G.12.c.(5).(a)	___	___	___
11.	Crack open 2-1501-15A, U2 LPCI A PMP Vent VLV until flow is observed from pipe	Instructs EO to complete step G.12.c.(5).(b)	___	___	___
12.	Close 2(3)-1501-15A, U2 LPCI A PMP VENT VLV	Instructs EO to complete step G.12.c.(5).(c)	___	___	___
13.	Close AND lock 2-1501-74A, U2(3) LPCI A PMP VENT VLV	Instructs EO to complete step G.12.c.(5).(d)	___	___	___
14.	Open 2-1501-47A-R, U2 LPCI A PUMP SUCT PI 2-1501-47A ROOT VLV (at pump) and verify PI 2-1501-47A indicates less than 15 psig	Instructs EO to obtain PI 2-1501-47A reading per step G.12.c.(6) & G.12.c.(7)	___	___	___
CUE	PI 2-1501-47A indicates 15.5 psig				
15.	Recognizes reading is NOT less than 15 psig	Determines reading is greater than 15 psig	___	___	___
16.	Close 2-1501-47A-R, U2 LPCI A PUMP SUCT PI 2-1501-47A ROOT VLV	Instructs EO to close 2-1501-47A per step G.12.c.(8)	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
CUE	2-1501-47A-R is Closed				
*17.	Open PP SUCT VLV MO 2-1501-5A	GREEN light illuminated	___	___	___
*18.	Place 2A LPCI PP control switch in AUTO	Depresses and places 2A LPCI PP c/s to center (AUTO) position	___	___	___
19.	Notify Unit Supervisor that 2A LPCI pump cannot be used with suction from the CST	Examinee notifies Unit Supervisor of 2A LPCI pump suction pressure problem when aligned to CST May recommend using another LPCI pump	___	___	___
CUE	Notify the examinee that injection is still needed and to line up 2C LPCI pump suction to the CST				
BEGIN ALTERNATE PATH					
*20.	Place 2C LPCI PP control switch in Pull-to-Lock	ALL lights extinguished	___	___	___
*21.	Place PP SUCT VLV MO 2-1501-5C control switch in Manual Bypass and verify closed	RED light illuminated	___	___	___
22.	Verify MIN FLOW VLV 2-1501-13B closed if not needed	RED light illuminated	___	___	___
CUE	2-1501-13B is not required for 2D LPCI pump				
23.	Verify TORUS CLG/TEST valves 2-1501-20A and 2-1501-38A closed	GREEN lights illuminated	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
24.	Verify TORUS SPRAY VLVs 2-1501-19A and 2-1501-18A closed	GREEN lights illuminated	___	___	___
25.	Verify DW SPRAY VLVs 2-1501-28A and 2-1501-27A closed	GREEN lights illuminated	___	___	___
26.	Verify TORUS CLG/TEST VLVs 2-1501-20B and 2-1501-38B closed	GREEN lights illuminated	___	___	___
27.	Verify TORUS SPRAY VLVs 2-1501-19B and 2-1501-18B closed	GREEN lights illuminated	___	___	___
28.	Verify DW SPRAY VLVs 2-1501-28B and 2-1501-27B closed	GREEN lights illuminated	___	___	___
29.	Unlock AND open 2-1501-74C, U2 LPCI C PMP VENT VLV	Instructs EO to complete step G.12.c.(5).(a)	___	___	___
30.	Crack open 2-1501-15C, U2 LPCI C PMP VENT VLV until flow is observed from pipe	Instructs EO to complete step G.12.e.(5).(b)	___	___	___
31.	Close 2(3)-1501-15C, U2 LPCI C PMP VENT VLV	Instructs EO to complete step G.12.e.(5).(c)	___	___	___
32.	Close AND lock 2-1501-74C, U2 LPCI C PMP VENT VLV	Instructs EO to complete step G.12.e.(5).(d)	___	___	___
33.	Open 2-1501-47C-R, U2 LPCI C PUMP SUCT PI 2-1501-47C ROOT VLV (at pump) and verify PI 2-1501-47C indicates less than 15 psig	Instructs EO to obtain PI 2-1501-47A reading per step G-12.e.(6)	___	___	___
CUE	Pressure is 10 psig				

SRRS: 3D.105 (when utilized for operator initial or continuing training)

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
34.	Recognizes reading is less than 15 psig	Determines reading is LESS than 15 psig	___	___	___
35.	Close 2-1501-47C-R, U2 LPCI C PUMP SUCT PI 2-1501-47C ROOT VLV	Instructs EO to close 2-1501-47C per step G.12.e.(8)	___	___	___
36.	Unlock AND open 2-1501-31C, U2 LPCI C PMP SUCT VLV FROM CST [at 2 C LPCI Pump]	Directs EO to perform step G-12.e.(10)(a)	___	___	___
CUE	2-1501-31C is open				
37.	Unlock AND open 2-1501-37, U2 LPCI & CS SUCT FROM 2/3A CST SV (located at 2/3A CST)	Directs EO to perform step G.12.e.(10)(b)	___	___	___
Simulator Operator / Evaluator: Activate Trigger 15 to lineup 2C LPCI pump suction to the CST					
CUE	2-1501-37 is open				
*38.	Start 2C LPCI PP	Places control switch to start RED light illuminated	___	___	___
39.	Inform Unit Supervisor that 2C LPCI pump is lined up to the CST and the task is complete	Informs Unit Supervisor that 2C LPCI pump is lined up to the CST and injecting; the task is complete	___	___	___
CUE	Acknowledge report of task completion				
END					

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☒ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **LPCI – Mitigate High Suction Pressure While Lining Up to CST Suction for Injection**
JPM Number: **S-N-d** Revision Number: **10**
Task Number and Title: **29502LK061, Lineup LPCI to the CST**
K/A Number and Importance: **203000.A4.01 2.5 / 2.6**
Suggested Testing Environment: **Simulator**
Alternate Path: ☒ Yes ☐ No SRO Only: ☒ Yes ☐ No Time Critical: ☐ Yes ☒ No
Reference(s): **DEOP 0500-03, Rev 023, ALTERNATE WATER INJECTION SYSTEMS**

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **38 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. A transient has occurred requiring Alternate Water Injection
3. RPV level is -65 inches and slowly dropping
4. RPV pressure is 375 psig and slowly dropping

INITIATING CUE

1. The Unit Supervisor has directed you to line up the 2A LPCI pump with CST suction with 2A LPCI pump running ready to inject
2. Inform the Unit Supervisor when the task is complete

Job Performance Measure

RBM – CLEAR RBM MALFUNCTION

JPM Number: S-N-e

Revision Number: 03

Date: 04 / 2017

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 DGP 03-01 Rev: 132
Procedure DOA 0700-03 Rev: 13
Procedure DAN 902-5 A-7 Rev: 16
Procedure DGP 03-04 Rev: 73
Procedure DOP 0400-01 Rev: 39

_____ 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 2014 LORT NRC Exam

Revision 01, Revised JPM for 14-1 ILT NRC Exam

Revision 02, Revised for ILT 15-1 CERT Exam

Revision 03, Revised for ILT 16-1 (2017-301) NRC Exam

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to any IC with: (IC 182 used for validation)
   - FCL 90 – 96%
   - A control rod available to withdraw which meets the following:
     - In-sequence
     - Partially withdrawn
     - Non-edge

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. For development of this JPM, IC 182 with control rod sequence 2S.0.0 909D (step 15 partially withdrawn) was used with the following:
   - Control rod F-04 inserted at position 00
   - Recirc flow reduced to 58 Mlbm/hr
3. Setup the Malfunctions, Remotes, and/or Triggers by running CAEP file: S-N-e.cae
4. Mark up a copy of DGP 03-01, POWER CHANGES, through step G.2.v, step G.2.w is the next step to be performed.
5. Clean copy of DGP 03-04, CONTROL ROD MOVEMENTS
6. Clean copy of DAN 902-5 A-7, RBM HI/INOP.
7. Clean copy of DOA 0700-03, ROD OUT BLOCKS.
8. 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.
9. This completes the setup for this JPM.

INITIAL CONDITIONS

1. You are the NSO assigned to move control rods.
2. The QNE requests withdrawing control rod F-04 from position 00-06 using single notch.
3. The Unit Supervisor has approved and authorized the REMA with all initial conditions verified to be met.

INITIATING CUE

1. The Unit Supervisor has directed you to withdraw control rod F-04 from position 00 to position 06 using single notching IAW DGP 03-01, Power Changes, step G.2.w.
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:

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	Although not a procedure step a second verifier is required. Second Verifier Duties: ➢ Proper rod selected ➢ Insert and Withdraw limits understood. ➢ Verifies RWM is in exercise mode, has no errors and has blocks enabled. ➢ Check off each control rod movement on the CRD Exercise Checklist.				
01	Request a second verifier	VERIFIES second verifier available.	___	___	___
CUE	Inform examinee that you will perform duties of second verifier.				
*02	Selects Control Rod F-04.	Depresses Select Pushbutton for Control Rod F-04. Observes Full Core Display and Apron Select lights for control rod F-04 lit.	___	___	___
NOTE	An automatic Trigger inserts a failure for RBM 7 as control rod F-04 settles to position 04.				
*03	Single notches out Control Rod F-04 from position 00 to position 04.	• Momentarily places Rod Movement Control switch to Rod Out. • Verifies Control Rod F-04 latches at position 04.	___	___	___
04	Observe annunciator 902-5 A-7, RBM HI/INOP is received.	Announces annunciator 902-5 A-7, RBM HI/INOP is received.	___	___	___
BEGIN ALTERNATE PATH					
05	Depress the appropriate RBM PUSH TO SET-UP Push Buttons.	Depresses the RBM PUSH TO SET-UP Push Button for RBM 7.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
06	Verify only one Control Rod is selected for movement, and that it is in the proper sequence (the NO ROD SELECTED Light on Panel 902(3)-37 should be extinguished).	Verifies only one rod is selected on the rod select matrix and the NO ROD SELECTED light for RBM 7 at panel 902-37 is extinguished.	___	___	___
07	Check that there are NO unusually high LPRM indications, and that there are the proper number of assigned LPRMs for each of the RBM Channels.	Verifies that there are no high LPRM indications and RBM 7 has the proper number of LPRMs assigned.	___	___	___
CUE	When the examinee begins to use the Plant Process computer to obtain printouts, inform the examinee “Another NSO has printed the Control Rod Printout and a LPRM Printout, the QNE has reviewed the printouts and has no concerns.”				
08	Obtain a Control Rod Printout and a LPRM Printout from the process computer (Reference DOP 9950–03 AND DOP 9950-07) to verify proper Control Rod Position and LPRM flux profile.	Uses a Plant Process Computer terminal to print Control Rod and LPRM printouts.	___	___	___
*09	Place the RBM 7 Mode Selector Switch to the ZERO 2 position and then move it to the STANDBY Position.	Places the RBM 7 Mode Selector Switch to the ZERO 2 position AND then to STANDBY.	___	___	___
NOTE	This will cause the card to perform a nulling sequence, the RBM 7 INOP light will go on and the NO BALANCE Light for RBM 7 on Panel 902-37 will go out.				
*10	Place the RBM Mode Selector Switch to the OPERATE Position.	Places the RBM 7 Mode Selector Switch to OPERATE	___	___	___
NOTE	The RBM 7 INOP light on Panel 902-37 will go out.				
END ALTERNATE PATH					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*11	Single notches out Control Rod F-04 from position 04 to position 06.	• Momentarily places Rod Movement Control switch to Rod Out. • Verifies Control Rod F-04 latches at position 06.	___	___	___
NOTE	At this point the JPM is complete				
13	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
CUE	Acknowledge the report				

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **RBM – Clear RBM Malfunction**
JPM Number: **S-N-e** Revision Number: **03**
Task Number and Title: **201L016, Respond to a rod out block**
K/A Number and Importance: **215002.A2.05 3.2 / 3.3**
Suggested Testing Environment: **Simulator**
Alternate Path: ☒ Yes ☐ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s): **DOA 0700-03, Rev 013, ROD OUT BLOCKS; DAN 902(3)-5 A-7, Rev 016, RBM HI-INOP; DGP 03-01, Rev 132, POWER CHANGES; DGP 03-04, Rev 073, CONTROL ROD MOVEMENTS; DOP 0400-01, Rev 039, REACTOR MANUAL CONTROL SYSTEM OPERATION**

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **40 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**: _____

SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. You are the NSO assigned to move control rods.
2. The QNE requests withdrawing control rod F-04 from position 00-06 using single notch.
3. The Unit Supervisor has approved and authorized the REMA with all initial conditions verified to be met.

INITIATING CUE

1. The Unit Supervisor has directed you to withdraw control rod F-04 from position 00 to position 06 using single notching IAW DGP 03-01, Power Changes, step G.2.w.
2. Inform the Unit Supervisor when the task is complete.

Job Performance Measure

AUX POWER - Transfer Aux Power

JPM Number: S-N-f

Revision Number: 03

Date: 04 / 2017

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 6500-01 Rev: 14
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 02, Bank JPM

Revision 03, Revised for ILT 16-1 (2017-301) NRC Exam

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC 166

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. Ensure ONLY 2 RFPs operating.
3. Ensure ONLY 3 Cond/Cond Booster Pumps operating.
4. Mark up a copy of DOP 6500-01 through step F.5
5. 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.
6. This completes the setup for this JPM.

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Unit 2 was operating at rated power when the TR-21 trouble alarm is received.
3. The EO, dispatched to TR-21, reported that the TR-21 cooling fans are not all operating and the transformer temperature is rising.
4. The Unit Supervisor has decided to unload TR-21 by transferring auxiliary power to TR-22.
5. Another operator will verify TR-86 Load Tap Changer positions and loading remains below the restrictions of the procedure.

INITIATING CUE

1. The Unit Supervisor has directed you to transfer Bus 21 and Bus 23 to TR-22 in accordance with DOP 6500-01 Transfer of 4160 Volt Bus Power Supply.
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:

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
NOTE	Provide the examinee with the provided copy of DOP 6500-01. This task has two parts, which can be performed in any order.				
CUE	IF the incoming and running voltages are NOT approximately equal, inform examinee that they ARE approximately equal.				
TRANSFER BUS 21 TO TR-22					
*01	Position TR-22 to Bus 21 SYNCHROSCOPE selector switch to ON.	Switch in ON position.	___	___	___
02	Verify: INCOMING VOLTS and RUNNING VOLTS meters approximately equal. SYNCHRONIZING meter at 12 o'clock position and NOT rotating. SYNCHRONIZING meter lights NOT glowing.	Voltages approximately equal. Meter NOT rotating. White lights extinguished.	___	___	___
*03	Position TR-22 to Bus 21 breaker control switch to CLOSE.	RED light illuminated.	___	___	___
04	Verify: SYNCHRONIZING meter at 12 o'clock position. TR-22 to Bus 21 breaker indicates CLOSED. Annunciator 902-8 D-1 in alarm.	Meter NOT rotating. RED light illuminated. Annunciator 902-8 D-1 illuminated.	___	___	___
*05	Position TR-21 to Bus 21 breaker control switch to TRIP.	GREEN light illuminated.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
06	Verify: TR-21 to Bus 21 breaker indicates OPEN. Annunciator 902-8 D-1 clears.	GREEN light illuminated. Annunciator 902-8 D-1 extinguished.	___	___	___
07	Position TR-22 to Bus 21 synchroscope selector switch to OFF.	Switch in OFF position.	___	___	___
08	Verify Bus 21 AMMETER and VOLTMETER indications are normal.	Verifies Bus 21 amps and volts are normal.	___	___	___
NOTE	Amps may vary depending on conditions, and volts are normally ~ 4160.				
TRANSFER BUS 23 TO TR-22					
*09	Position TR-22 to Bus 23 SYNCHROSCOPE selector switch to ON.	Switch in ON position.	___	___	___
10	Verify: INCOMING VOLTS and RUNNING VOLTS meters approximately equal. SYNCHRONIZING meter at 12 o'clock position and NOT rotating. SYNCHRONIZING meter lights NOT glowing.	Voltages approximately equal. Meter NOT rotating. White lights extinguished.	___	___	___
*11	Position TR-22 to Bus 23 breaker control switch to CLOSE.	RED light illuminated.	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
12	Verify: SYNCHRONIZING meter at 12 o'clock position. TR-22 to Bus 23 breaker indicates CLOSED. Annunciator 902-8 C-3 in alarm.	Meter NOT rotating. RED light illuminated. Annunciator 902-8 C-3 illuminated.	___	___	___
*13	Position TR-21 to Bus 23 breaker control switch to TRIP.	GREEN light illuminated.	___	___	___
14	Verify: TR-21 to Bus 23 breaker indicates OPEN. Annunciator 902-8 C-3 clears.	GREEN light illuminated. Annunciator 902-8 C-3 extinguished.	___	___	___
15	Position TR-22 to Bus 23 synchroscope selector switch to OFF.	Switch in OFF position.	___	___	___
16	Verify Bus 23 AMMETER and VOLTMETER indications are normal.	Verifies Bus 23 amps and volts are normal.	___	___	___
NOTE	Amps may vary depending on conditions, and volts are normally ~ 4160.				
17	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
CUE	Acknowledge report of task completion.				
END					

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **AUX POWER - Transfer Aux Power**
JPM Number: **S-N-f** Revision Number: **03**
Task Number and Title: **262L024, Transfer a 4160 volt bus between power supplies**
K/A Number and Importance: **262001.A4.04 3.6 / 3.7**
Suggested Testing Environment: **Simulator**
Alternate Path: ☐ Yes ☒ No SRO Only: ☐ Yes ☒ No Time Critical: ☐ Yes ☒ No
Reference(s): **DOP 6500-01, Rev 014, TRANSFER OF 4160 VOLT BUS POWER SUPPLY**

Actual Testing Environment: ☒ Simulator ☐ Control Room ☐ In-Plant ☐ Other

Testing Method: ☐ Simulate ☒ Perform

Estimated Time to Complete: **14 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: _____

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Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Unit 2 was operating at rated power when the TR-21 trouble alarm is received.
3. The EO, dispatched to TR-21, reported that the TR-21 cooling fans are not all operating and the transformer temperature is rising.
4. The Unit Supervisor has decided to unload TR-21 by transferring auxiliary power to TR-22.
5. Another operator will verify TR-86 Load Tap Changer positions and loading remains below the restrictions of the procedure.

INITIATING CUE

1. The Unit Supervisor has directed you to transfer Bus 21 and Bus 23 to TR-22 in accordance with DOP 6500-01 Transfer of 4160 Volt Bus Power Supply.
2. Inform the Unit Supervisor when the task is complete.

Job Performance Measure

RBCCW – SWAP RBCCW PUMPS with Pump Trip

JPM Number: S-N-g

Revision Number: 00

Date: 04 / 2017

Developed By: _____ _____
Exam Author Date

Approved By: _____ _____
Facility Representative Date

SRRS: 3D.105 (when utilized for operator initial or continuing training)

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 3700-01 Rev: 020
Procedure DOP 3700-02 Rev: 041
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, Developed for ILT 16-1 (2017-301) NRC Exam

SIMULATOR SETUP INSTRUCTIONS

1. Reset the simulator to IC 165

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. Ensure 2B and 2/3 RBCCW pumps are running and 2A RBCCW pump is secured.
3. Setup the Malfunctions, Remotes, and/or Triggers by running CAEP file: S-N-g.cae
4. Mark up a copy of DOP 3700-02, Rev 041, REACTOR BUILDING CLOSED COOLING WATER SYSTEM OPERATION through step G.6.f.(2), step G.6.g is the next step to be performed.
5. Clean copy of DOA 3700-01, Rev 020, LOSS OF COOLING BY REACTOR BUILDING CLOSED COOLING WATER (RBCCW) SYSTEM
6. 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.
7. This completes the setup for this JPM.

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Maintenance has just been completed on 2A RBCCW pump.
3. Fill and vent of the 2A RBCCW pump has been completed.

INITIATING CUE

1. The Unit Supervisor has directed you to start 2A RBCCW pump for post maintenance testing and secure 2B RBCCW pump IAW DOP 3700-02.
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:

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: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*01	Start on coming RBCCW pump	Places 2A RBCCW PP C/S to CLOSE position and verifies blue ON light illuminated	___	___	___
02	Verify proper operation	Verifies 2A RBCCW PP AMPS spike then return to approximately 30 amps Contacts EO to verify proper operation of 2A RBCCW pump			
CUE	As the EO, inform the examinee "2A RBCCW pump is operating normally"				
*03	Stop off going RBCCW pump	Places 2B RBCCW PP C/S to TRIP position and verifies green OFF light illuminated	___	___	___
NOTE	An automatic Trigger inserts a trip of the 2A RBCCW pump 10 seconds after the 2B RBCCW pump is secured.				
BEGIN ALTERNATE PATH					
04	Announces 2A RBCCW pump trip and enters DOA 3700-01, Loss Of Cooling By Reactor Building Closed Cooling Water (RBCCW) System	Announces 2A RBCCW pump trip and enters DOA 3700-01, Loss Of Cooling By Reactor Building Closed Cooling Water (RBCCW) System	___	___	___
*05	Start a standby RBCCW Pump (DOA immediate action)	Places 2B RBCCW PP C/S to CLOSE position and verifies blue ON light illuminated	___	___	___
06	Verify proper operation	Verifies 2B RBCCW PP AMPS spike then return to approximately 30 amps Contacts EO to verify proper operation of 2B RBCCW pump	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
07	Informs the Unit Supervisor 2B RBCCW pump was restarted due to a trip of 2A RBCCW pump	Examinee notifies the Unit Supervisor.	___	___	___
CUE	Acknowledge the report				
CUE	Inform the examinee “Another NSO will complete DOA 3700-01actions”.				
NOTE	At this point the JPM is complete				
08	Informs Unit Supervisor task is complete.	Examinee notifies the Unit Supervisor.	___	___	___
CUE	Acknowledge the report				

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: _____ **Emp. ID#**: _____

Job Title: ☐ EO ☐ RO ☐ SRO ☐ FS ☐ STA/IA ☐ SRO Cert

JPM Title: **RBCCW – SWAP RBCCW PUMPS with Pump Trip**

JPM Number: **S-N-g** Revision Number: **00**

Task Number and Title: **208N008, Perform RBCCW pump and heat exchanger lineup combinations**

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): **DOA 3700-01, Rev 020, LOSS OF COOLING BY REACTOR BUILDING CLOSED COOLING WATER (RBCCW) SYSTEM; DOP 3700-02, Rev 041, REACTOR BUILDING CLOSED COOLING WATER SYSTEM OPERATION**

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 ☐ No

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

Comments: _____

_____

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_____

_____

_____

_____

_____

_____

Evaluator's Name (Print): _____

Evaluator's Signature: _____ **Date**: _____

SRRS: 3D.105 (when utilized for operator initial or continuing training)

INITIAL CONDITIONS

1. You are the Unit 2 Aux NSO.
2. Maintenance has just been completed on 2A RBCCW pump.
3. Fill and vent of the 2A RBCCW pump has been completed.

INITIATING CUE

1. The Unit Supervisor has directed you to start 2A RBCCW pump for post maintenance testing and secure 2B RBCCW pump IAW DOP 3700-02.
2. Inform the Unit Supervisor when the task is complete.