

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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>CPS 3304.01</u>	Revision: <u>38c</u>
Procedure: <u>CPS 5068.03</u>	Revision: <u>26a</u>
Procedure: <u>CPS 5068.04</u>	Revision: <u>26a</u>
Procedure: _____	Revision: _____
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

Revision Record (Summary)

Revision #	Summary
00	8/21/20 – New JPM.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM562 per step 2)
 - a. Initialize to any suitable IC with power ascension in progress IAW CPS 3005.01 Unit Power Changes (requiring rod withdrawal).
 - b. Ensure CRD Pump B is in operation with Drive Water Diff Pressure (C11-R602) reading 250 psid.
 - c. Freeze the simulator.
 - d. Save to a different IC if JPM is being used more than once. IC-216 is saved for the ILT 19-1 NRC exam (PW 13852).
 - e. This completes the setup for this JPM.

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

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-216 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. Open and execute Simulator Lesson Plan ILT 19-1 NRC Exam JPMs LP.
 - c. Place a flag on annunciator 5005-2K SRM Period.
 - d. Place the Drive Mode Selector Switch in Single Drive.
 - e. Release JPM562 which will insert malfunction YP_XMFTB_4853 (CRD Pump 'B' Trip) when CRD Press Control Valve (1C11-F003) is taken to the CLOSE position.
 - f. 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.
 - g. Save to a different IC if required.
 - h. Freeze the simulator.

INITIAL CONDITIONS

You are the extra RO.

The plant is operating at 84% power.

Power ascension is in progress IAW CPS 3005.01 Unit Power Changes.

- The 'A' RO attempted to withdraw Rod 04-29, but it failed to change position.
- The 'A' RO has recommended to the CRS that they follow the guidance in CPS 3304.01 Control Rod Hydraulic And Control (RD), section 8.3.4 Control Rod Difficult To Withdraw.

INITIATING CUE

The CRS has directed you to coordinate with the 'A' RO and raise Drive Water Differential Pressure (D/P) IAW CPS 3304.01 Control Rod Hydraulic And Control (RD), section 8.3.4 Control Rod Difficult To Withdraw.

You do not have permission to exceed 500 psid.

The 'A' RO has requested that you raise Drive Water D/P to 300 psid and inform him/her when 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.

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JPM Start Time: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will attempt to raise Drive Water Differential Pressure (D/P) in response to the failure of a control rod to withdraw.

- the operating Control Rod Drive (CRD) pump will trip.
- the examinee will be required to start the standby CRD pump in order to successfully raise Drive Water D/P.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the Cue Sheet and the following: <ul style="list-style-type: none"> • CPS 3304.01 Control Rod Hydraulic And Control (RD) 				
*01	8.3.4 Raises Drive Water Differential Pressure (D/P).	Examinee attempts to throttle C11-F003, CRD Pressure Control Valve to achieve the desired pressure. <ul style="list-style-type: none"> • Momentarily takes CRD Pressure Control Valve (1C11-F003) to CLOSE. 	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*01 (cont.)		The operating CRD pump trips. The following indications are received: <ul style="list-style-type: none"> • CRD Pump B Red light OFF, Green & Amber lights ON • CRD Drive Water Pump Auto Trip (5068-3B) • Charging Water Pressure Low (5068-4B) Examinee reviews applicable ARPs and determines that the non-tripped (standby) CRD pump should be started IAW CPS 3304.01 Control Rod Hydraulic and Control (RD), section 8.3.6 Loss of CRD Pump.	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	If the examinee: <ul style="list-style-type: none"> • reports receiving annunciators 5068-3B & 4B, 5006-1G, or 500-3B, acknowledge the report. • recommends starting the standby CRD pump, acknowledge the recommendation. • requests a field operator, respond one is available via phone. 				
ALTERNATE PATH BEGINS					
*02	8.3.6.3 Isolates CRD Drive Water flow.	Examinee closes CRD Drive Water Flow Control Valve (1C11-F002B): <ul style="list-style-type: none"> • Places CRD Flow Control station (1C11-R600) in MANUAL (M ← A) • Depresses the CLOSE pushbutton until output lowers to 0 gpm. 	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	If the examinee reports applicable ITS LCOs or required actions for lowering system pressures, acknowledge the report.				
*03	8.3.6.6 – 8.3.6.8 Starts the standby CRD Aux Oil Pump. Shuts the standby CRD pump Discharge Check Valve.	Examinee starts the standby CRD Aux Oil Pump by placing the ‘A’ Aux Oil Pump (C11-C001A) switch to START then spring release to AUTO. Examinee directs the field operator to close the CRD Pump A Discharge Check Valve (1C11-F014A).	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	Field Operator – acknowledge the request, release “ Shut 1C11-F014A ” and report, “1C11-F014A is SHUT”.				
*04	8.3.6.6 – 8.3.6.15 Verifies standby CRD Aux Oil Pump operation.	Examinee verifies the ‘A’ Aux Oil Pump (C11-C001A) operation: <ul style="list-style-type: none"> • Red light ON, Green light OFF. • Oil pressure is ≥ 3 psig. 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	Field Operator – when requested, report “CRD ‘A’ oil pressure is > 3 psig”.				
NOTE:	The examinee may or may <u>not</u> allow the CRD Aux Oil Pump to run ~ 1 minute prior to starting the standby CRD pump. This is an interpretation of “IF conditions permit” and either way is acceptable.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*05	8.3.6.10 – 8.3.6.12 Starts the standby CRD Pump. Verifies standby CRD operation. Opens the standby CRD pump Discharge Check Valve.	<p>Examinee starts the ‘A’ CRD Pump by placing the CRD Pump A (C11B-C001A) switch to START then spring release to AUTO, and verifies:</p> <ul style="list-style-type: none"> • Red light ON, Green light OFF. • Aux Oil Pump has auto stopped. <p>Examinee directs the field operator the OPEN Pump A Discharge Check Valve (1C11-F014A).</p>	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	Field Operator – acknowledge the request, release “Open 1C11-F014A” and report, “1C11-F014A is OPEN”.				
*06	8.3.6.13 – 8.3.6.15 Establishes CRD Drive Water flow.	<p>Examinee opens CRD Drive Water Flow Control Valve (1C11-F002B):</p> <ul style="list-style-type: none"> • Depresses the OPEN pushbutton until output rises to 41 to 49 gpm as indicated on CRD Hydraulics Flow Indicator (C11-R606). • Adjusts tape setpoint to null out deviation. • Places CRD Flow Control station (1C11-R600) in AUTO (M → A). 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	Field Operator – if directed to complete local actions at the ‘A’ CRD pump, acknowledge the request and report, “I will complete the remaining steps of CPS 3304.01 Control Rod Hydraulic and Control (RD), section 8.3.6 Loss of CRD Pump”.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*03	8.3.4 Raises Drive Water D/P as necessary to achieve 300 psid.	If necessary, examinee attempts to throttle C11-F003, CRD Press Control Valve to achieve the desired pressure. Momentarily takes CRD Pressure Control Valve (1C11-F003) to CLOSE.	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	When Drive Water D/P has been raised to 300 psid, cue the examinee that the JPM is complete.				

JPM Stop Time: _____

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NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

You are the extra RO.

The plant is operating at 84% power.

Power ascension is in progress IAW CPS 3005.01 Unit Power Changes.

- The 'A' RO attempted to withdraw Rod 04-29, but it failed to change position.
- The 'A' RO has recommended to the CRS that they follow the guidance in CPS 3304.01 Control Rod Hydraulic And Control (RD), section 8.3.4 Control Rod Difficult To Withdraw.

INITIATING CUE

The CRS has directed you to coordinate with the 'A' RO and raise Drive Water Differential Pressure (D/P) IAW CPS 3304.01 Control Rod Hydraulic And Control (RD), section 8.3.4 Control Rod Difficult To Withdraw.

You do not have permission to exceed 500 psid.

The 'A' RO has requested that you raise Drive Water D/P to 300 psid and inform him/her when complete.

Job Performance Measure**TDRFP 'B' Startup (Alternate Path)**JPM Number: JPM530Revision Number: 02Date: 8/21/2020Developed By: Bill Kiser / 8/21/20
Instructor: Print / Sign DateReviewed By: _____ / _____
SME or Instructor: Print / Sign DateReviewed By: _____ / _____
Operations Representative: Print / Sign DateApproved By: _____ / _____
Training Department: Print / Sign 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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>CPS 3103.01</u>	Revision: <u>34</u>
Procedure: <u>CPS 5002.02</u>	Revision: <u>30c</u>
Procedure: <u>CPS 5002.03</u>	Revision: <u>28e</u>
Procedure: _____	Revision: _____
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) Date

_____/_____
SME / Instructor (Print/Sign) Date

_____/_____
SME / Instructor (Print/Sign) Date

Revision Record (Summary)

Revision #	Summary
00	7/25/14 – New JPM.
01	9/16/16 – Updated references.
02	8/21/20 – Updated references and JPM template.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM530 per step 2)
 - a. Initialize to any suitable IC (comparable with IC-26) with TDRFP 'A' on the MLC in auto and the TDRFP 'B' in rolling standby.
 - b. Freeze the simulator.
 - c. Save to a different IC if JPM is being used more than once. IC-217 is saved for the ILT 19-1 NRC exam (PW 13852).
 - d. This completes the setup for this JPM.

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

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-217 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. Open and execute Simulator Lesson Plan ILT 19-1 NRC Exam JPMs LP.
 - c. Release JPM530 which will:
 - Disable TDRFP 'B' trips from 1H13-P680.
 - Insert vibration alarms and indications when TDRFP 'B' speed is increased above 2800 rpm.
 - Insert seat leakage into the HPSV & HPCV (MS0ASLVALVE 9% & MS0ASLVALVE 2% respectively)
 - d. 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.
 - e. Save to a different IC if required.
 - f. Freeze the simulator.

INITIAL CONDITIONS

A reactor startup / power ascension is in progress.

Reactor power is ~ 56%.

Turbine Driven Reactor Feed Pump (TDRFP) 'A' is operating on the Master Level Controller (MLC) in auto feeding the RPV.

TDRFP 'B' is in rolling standby IAW CPS 3103.01 Feedwater (FW) section 8.1.4.2 TDRFP NORMAL Startup to Rolling STANDBY.

5 Condensate Polishers (A – E) are in service.

INITIATING CUE

The CRS has directed you to place TDRFP 'B' in service feeding the RPV using the 'AUTO' method IAW CPS 3103.01 Feedwater (FW) section 8.1.4.4. Transfer rolling STANDBY TDRFP to feeding RPV through 1FW002A (B).

5 Condensate Polishers are adequate to support increasing load.

Permission has been granted to perform all critical steps required to perform the task.

Report to the CRS after completing the task.

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: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will attempt to place TDRFP 'B' in service feeding the RPV using the 'AUTO' method IAW CPS 3103.01 Feedwater (FW) section 8.1.4.4. TDRFP 'B' will exhibit high shaft vibration.

The examinee will be required to:

- reduce TDRFP 'B' speed to clear vibrations (fails)
- shutdown TDRFP 'B' (fails to trip)
- secure a TDRFP that will not trip

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the Cue Sheet and the following: <ul style="list-style-type: none"> • Marked Up copy of CPS 3103.01 Feedwater (FW) (section 8.1.4.2 TDRFP NORMAL Startup to Rolling STANDBY is complete) 				
01	8.1.4.4.1 – 8.1.4.4.3 Verifies status of: <ul style="list-style-type: none"> • TDRFP 'B' • Condensate Polishers • 1FW010B Min Flow Valve 	Examinee determines TDRFP 'B' is in rolling standby per the initiating cue. Examinee determines that 5 Condensate Polishers are adequate to perform the evolution. Examinee observes Red 'M' on the Digital Feedwater Display for 1FW010B and the 1FW010B valve icon is red.	<input type="checkbox"/>	<input type="checkbox"/>	_____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
*02	8.1.4.4.4 – 8.1.4.4.6 Opens 1FW002B RFP 1B Discharge Valve.	Examinee clicks on: <ul style="list-style-type: none"> • FPB • TDRFP B (and observes the blue outline on the control box) • ↓ (and observes TDRFP B RPM decreasing to ~ 2370 rpm) • Exit Examinee clicks on: <ul style="list-style-type: none"> • Valve icon for 1FW002B • TDRFP Main Discharge Valve 1FW002B (and observes the blue outline on the control box) • Open (and then verifies indication changes to 'Intermediate' and then 'Full Open') • Exit Examinee clicks on: <ul style="list-style-type: none"> • Valve icon for 1FW010B • 1FW010B Min Flow (and observes the blue outline on the control box) • Close • Exit 	<input type="checkbox"/>	<input type="checkbox"/>	<hr style="width: 20px; margin: 0 auto;"/>
<p>NOTE: 1FW010B will not physically close with TDRFP 'B' reset and 1FW002B full open.</p> <p>If the examinee depresses the 1FW010B close pushbutton before 1FW002B is full open, 1FW010B will close. If this happens, the error should be considered a failure of a critical step.</p> <p>Step 8.1.4.4.7 is N/A.</p>					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*03	8.1.4.4.8.a.1) – 8.1.4.4.8.a.2) Commences injecting with TDRFP 'B'.	Examinee observes that TDRFP 'B' indicates 'FPB Speed Setter'. Examinee clicks on: <ul style="list-style-type: none"> • FPB Speed Setter • TDRFP B Speed Setpoint Mode (and observes the blue outline on the control box) • Bring Pump On-Line (and then verifies TDRFP 'B' speed increasing) • Exit 	<input type="checkbox"/>	<input type="checkbox"/>	—
NOTE: Annunciator 5002-2F High Vibr RFP 1B Shaft will be received when TDRFP 'B' speed increases above 2800 rpm. Annunciator 5002-3F High Vibr RFPT 1B Shaft will be received 30 seconds later.					
CUE	If the examinee: <ul style="list-style-type: none"> • reports receiving annunciators 5002-2F & 3F, acknowledge the report. • recommends reducing TDRFP 'B' speed, acknowledge the recommendation. 				
ALTERNATE PATH BEGINS					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
04	8.1.4.4.8.a.3) Attempts to reduce TDRFP 'B' speed to clear vibration alarms.	Examinee clicks on: <ul style="list-style-type: none"> • FPB Speed Setter • TDRFP B Speed Setpoint Mode (and observes the blue outline on the control box) • Speed Setter Mode • Exit Examinee clicks on: <ul style="list-style-type: none"> • FPB (pump icon) • TDRFP B (and observes the blue outline on the control box) • ↓ until setpoint (SP) indicates 0 RPM (and then observes that TDRFP 'B' speed begins to lower, but stabilizes at ~ 2000 RPM and that annunciators 5002-2F and 3F remain locked in) • Exit 	<input type="checkbox"/>	<input type="checkbox"/>	_____
CUE	If the examinee: <ul style="list-style-type: none"> • requests an Equipment Operator to investigate, acknowledge the order and then cue the examinee, "Vibrations can be felt on the floor of TB 800. I'm leaving due to safety concerns." • recommends securing TDRFP 'B', acknowledge the request. • recommends locking out the Reactor Recirculation (RR) Flow Control Valves (FCVs), acknowledge the recommendation and then cue the examinee, "Do not lock out the RR FCVs". 				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
05	8.3.15.1 – 8.1.3.15.3 8.1.10.4 Attempts to trip TDRFP 'B'.	<p>Examinee verifies TDRFP Main Discharge Valve 1FW002B shut.</p> <p>Examinee verifies TDRFP B M/A station is MANUAL / MINIMUM.</p> <p>Examinee clicks on:</p> <ul style="list-style-type: none"> • FPB Trip/Reset pushbutton • TDRFP B (and observes the blue outline on the control box) • TDRFP B Trip (and then observes that the HP and LP Stop Valves remain full open) • Exit (may or may not perform) <p>Examinee reports failure of the 'B' TDRFP to trip to the CRS.</p>	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	If the examinee reports failure of the 'B' TDRFP to trip, acknowledge the report.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*06	8.3.14 Secures TDRFP 'B' (will <u>not</u> trip from P680).	<p>On 1H13-P680-5002, the examinee:</p> <ul style="list-style-type: none"> depresses the 'L' pushbutton on the 'B' TDRFP SLIM Controller and verifies the 'L' pushbutton red light illuminates. verifies SLIM controller output to 0%. <p>Examinee locates control switch for 1B21-F303B on 1H13-P870-5016, rotates the control switch counter clockwise to the close position, and then verifies the green light illuminates and the red light extinguishes.</p> <p>Examinee verifies TDRFP 'B' RPM lowering, and that the high vibration annunciators clear.</p>	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	When TDRFP 'B' RPMs are lowering and the high vibration annunciators clear, cue the examinee that the JPM is complete.				

JPM Stop Time: _____



NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

A reactor startup / power ascension is in progress.

Reactor power is ~ 56%.

Turbine Driven Reactor Feed Pump (TDRFP) 'A' is operating on the Master Level Controller (MLC) in auto feeding the RPV.

TDRFP 'B' is in rolling standby IAW CPS 3103.01 Feedwater (FW) section 8.1.4.2 TDRFP NORMAL Startup to Rolling STANDBY.

5 Condensate Polishers (A – E) are in service.

INITIATING CUE

The CRS has directed you to place TDRFP 'B' in service feeding the RPV using the 'AUTO' method IAW CPS 3103.01 Feedwater (FW) section 8.1.4.4. Transfer rolling STANDBY TDRFP to feeding RPV through 1FW002A (B).

5 Condensate Polishers are adequate to support increasing load.

Permission has been granted to perform all critical steps required to perform the task.

Report to the CRS after completing the task.

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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>CPS 9031.07</u>	Revision: <u>34a</u>
Procedure: _____	Revision: _____
Procedure: _____	Revision: _____
Procedure: _____	Revision: _____
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

Revision Record (Summary)

Revision #	Summary
00	3/6/18 – New JPM.
01	8/21/20 – Updated JPM template.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM501 per step 2)
 - a. Initialize to any suitable IC with the Main Turbine on-line.
 - b. Freeze the simulator.
 - c. Save to a different IC if JPM is being used more than once. IC-218 is saved for the ILT 19-1 NRC exam (PW 13852).
 - d. This completes the setup for this JPM.

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

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-218 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. No simulator lesson plan is required for this JPM.
 - c. Ensure computer points C71-NC013, 14, 15, 16, 17, 18, 19, and 20 are displayed on PPC Display #10.
 - d. Freeze the simulator.

INITIAL CONDITIONS

The plant is in Mode 1.

The Main Turbine is on-line.

CPS 9031.07 Main Turbine Control Valve Tests is scheduled to be performed on your shift.

INITIATING CUE

The CRS has directed you to perform CPS 9031.07 Main Turbine Control Valve Tests on #1, #2, #3, and #4 Turbine Control Valves (CVs).

Annunciators associated with CPS 9031.07 Main Turbine Control Valve Tests are to be considered “Expected Annunciators” and treated as such. All other annunciators not associated with the Main Turbine Control Valve testing will be handled by another RO.

CPS 9031.07 Section 5.0 Prerequisites are complete.

The activity has been screened for production risk.

Another operator will monitor CV positions on 1H13-P678.

Plant conditions are stable.

Report to the CRS after completing the task.

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: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will successfully complete on-line testing of Main Turbine Control Valves (CVs).

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the Cue Sheet and a Marked Up copy of CPS 9031.07 Main Turbine Control Valve Tests. Ensure step 5.9.2 is marked as follows: <ul style="list-style-type: none"> • 115 VAC Present? – No for each CV • Contact Continuity – Open for CVs 1-3, Shut for CV-4 • Results – SAT for each CV 				
NOTE:	Ensure an instructor is stationed at 1H13-P678 Standby Information Panel to monitor CV position during the test.				
01	8.1.1 – 8.1.2 Performs pre-test verifications for CV-1.	Examinee verifies: <ul style="list-style-type: none"> • RPS and turbine trips reset and plant conditions stable, and • Section 5.0 Prerequisites complete and acceptable for CV-1. 	<input type="checkbox"/>	<input type="checkbox"/>	—
NOTE:	If requested by the examinee, initial step 8.1.1 as the independent verifier.				
CUE	For step 02, the instructor at 1H13-P678 will provide the following cues when requested by the examinee: <ul style="list-style-type: none"> • When CV-1 has been closed: “CV-1 operated smoothly, indicates closed, and fast closed the last 10% of valve travel”. • When CV-1 has been re-opened: “CV-1 has returned to the pre-test position”. • Initial the IV for step 8.1.4.1. 				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*02	8.1.3 – 8.1.4 Tests CV-1.	<p>Examinee depresses and holds the CV-1 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • 5004-2D DIV 1 OR 4 TCV FST CL TRIP annunciator energizes. • Computer point C71NC017 TCV FAST CLOSURE CH A actuation. • Smooth CV-1 operation with fast closing during ~ the last 10% of valve closure. <p>Examinee releases the CV-1 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • CV-1 returns to pre-test position. • 5004-2D DIV 1 OR 4 TCV FST CL TRIP annunciator de-energizes. • Computer point C71NC017 TCV FAST CLOSURE CH A resets. 	<input type="checkbox"/>	<input type="checkbox"/>	—
03	8.2.1 – 8.2.2 Performs pre-test verifications for CV-2.	<p>Examinee verifies:</p> <ul style="list-style-type: none"> • RPS and turbine trips reset and plant conditions stable, and • Section 5.0 Prerequisites complete and acceptable for CV-2. 	<input type="checkbox"/>	<input type="checkbox"/>	—

NOTE: If requested by the examinee, initial step 8.2.1 as the independent verifier.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
CUE	For step 04, the instructor at 1H13-P678 will provide the following cues when requested by the examinee: <ul style="list-style-type: none"> • When CV-2 has been closed: “CV-2 operated smoothly, indicates closed, and fast closed the last 10% of valve travel”. • When CV-2 has been re-opened: “CV-2 has returned to the pre-test position”. • Initial the IV for step 8.2.4.1. 				
*04	8.2.3 – 8.2.4 Tests CV-2.	<p>Examinee depresses and holds the CV-2 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • 5005-2D DIV 2 OR 3 TCV FST CL TRIP annunciator energizes. • Computer point C71NC018 TCV FAST CLOSURE CH B actuation. • Smooth CV-2 operation with fast closing during ~ the last 10% of valve closure. <p>Examinee releases the CV-2 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • CV-2 returns to pre-test position. • 5005-2D DIV 2 OR 3 TCV FST CL TRIP annunciator de-energizes. • Computer point C71NC018 TCV FAST CLOSURE CH B resets. 	<input type="checkbox"/>	<input type="checkbox"/>	<hr style="width: 20px; margin: 0 auto;"/>
NOTE: At evaluator discretion, the JPM can be terminated at this point and the remaining steps N/A'd. If this option is taken, cue the examinee that the JPM is complete or proceed to JPM step 5.					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
05	8.3.1 – 8.3.2 Performs pre-test verifications for CV-3.	Examinee verifies: <ul style="list-style-type: none"> • RPS and turbine trips reset and plant conditions stable, and • Section 5.0 Prerequisites complete and acceptable for CV-3. 	<input type="checkbox"/>	<input type="checkbox"/>	—
NOTE: If requested by the examinee, initial step 8.3.1 as the independent verifier.					
CUE	For step 06, the instructor at 1H13-P678 will provide the following cues when requested by the examinee: <ul style="list-style-type: none"> • When CV-3 has been closed: “CV-3 operated smoothly, indicates closed, and fast closed the last 10% of valve travel”. • When CV-3 has been re-opened: “CV-3 has returned to the pre-test position”. • Initial the IV for step 8.3.4.1. 				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*06	8.3.3 – 8.3.4 Tests CV-3.	<p>Examinee depresses and holds the CV-3 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • 5005-2D DIV 2 OR 3 TCV FST CL TRIP annunciator energizes. • Computer point C71NC019 TCV FAST CLOSURE CH C actuation. • Smooth CV-3 operation with fast closing during ~ the last 10% of valve closure. <p>Examinee releases the CV-3 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • CV-3 returns to pre-test position. • 5005-2D DIV 2 OR 3 TCV FST CL TRIP annunciator de-energizes. • Computer point C71NC019 TCV FAST CLOSURE CH B resets. 	<input type="checkbox"/>	<input type="checkbox"/>	—
07	8.4.1 – 8.4.2 Performs pre-test verifications for CV-4.	<p>Examinee verifies:</p> <ul style="list-style-type: none"> • RPS and turbine trips reset and plant conditions stable, and • Section 5.0 Prerequisites complete and acceptable for CV-4. • CV-4 is fully closed 	<input type="checkbox"/>	<input type="checkbox"/>	—
NOTE: If requested by the examinee, initial step 8.4.1 as the independent verifier.					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	For step 08, the instructor at 1H13-P678 will provide the following cues when requested by the examinee: <ul style="list-style-type: none"> • When asked to verify CV-4 closed: “CV-4 indicates closed”. • When CV-4 push-button has been released: “CV-4 indicates closed”. • Initial the IV for step 8.4.5.1. 				
*08	8.4.4 – 8.4.5 Tests CV-4.	<p>Examinee depresses and holds the CV-4 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • 5004-2D DIV 1 OR 4 TCV FST CL TRIP annunciator energizes. • Computer point C71NC020 TCV FAST CLOSURE CH D actuation. <p>Examinee releases the CV-4 TEST push-button, and then verifies the following:</p> <ul style="list-style-type: none"> • CV-4 remains closed. • 5004-2D DIV 1 OR 4 TCV FST CL TRIP annunciator de-energizes. • Computer point C71NC020 TCV FAST CLOSURE CH D resets. 	<input type="checkbox"/>	<input type="checkbox"/>	<hr style="width: 20px; margin: 0 auto;"/>
CUE	JPM is complete.				

JPM Stop Time: _____



NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

The plant is in Mode 1.

The Main Turbine is on-line.

CPS 9031.07 Main Turbine Control Valve Tests is scheduled to be performed on your shift.

INITIATING CUE

The CRS has directed you to perform CPS 9031.07 Main Turbine Control Valve Tests on #1, #2, #3, and #4 Turbine Control Valves (CVs).

Annunciators associated with CPS 9031.07 Main Turbine Control Valve Tests are to be considered "Expected Annunciators" and treated as such. All other annunciators not associated with the Main Turbine Control Valve testing will be handled by another RO.

CPS 9031.07 Section 5.0 Prerequisites are complete.

The activity has been screened for production risk.

Another operator will monitor CV positions on 1H13-P678.

Plant conditions are stable.

Report to the CRS after completing the task.

MAIN TURBINE CONTROL VALVE TESTS

SCOPE OF REVISION:

- Incorporated specific revisions 33a-33e, rev marks not retained.
- IR 2712024: added clarification on expected results when checking limits switches prior to testing.
- Broke up steps that had multiple actions within them.
- ① Specific Rev. 34a [Helton]: IR 3985777-02 - Added a PRECAUTION 4.1, that manipulating servo currents too fast when manually stroking TCVs could result in a scram (OPEX IR 2737607). Added Appendix A for Grand Gulf OPEX 323308.

2447906-31 - Added a PRECAUTION to have operations allow the plant to stabilize between TCV strokings.

**For Training
Only**

CONTAINS CRITICAL STEPS

CONTINUOUS USE

ORIGINATOR: *Ken Leffel*

CLASS CODE: *SNND*

SQR: *Matthew Davis*

APPROVAL DATE: *12/09/16*

CURRENT CHANGES TO GENERAL REVISION

	Change #	Date	List of Affected Pages
①	34a	03/06/18	1, 4, 10, 11, 17, 18, 19
②			
③			
④			
⑤			

1.0 PURPOSE

To cycle close the four High Pressure Turbine Control Valves from their running position.

This procedure fully satisfies the requirements of:

ITS SR 3.3.1.1.9 T10:

TCV Fast Closure, Trip Oil Pressure Low - CFT (92 days)

ITS SR 3.3.4.1.1: EOC-RPT TSV/TCV CFT (92 days)

2.0 DISCUSSION/DEFINITIONS

2.1 Discussion

2.1.1 Frequency «LBD-1» «LBD-2»

1. Normal Frequency

Once per 90 days (ITS requirement is 92 days, however, GE Energy Services Memo, Missile Probabilities for Extended Intervals, dated August 30, 1999, allows a frequency of 90 days with turbine prewarming.)

2. Other Triggers

- 1) CPS 3005.01, Unit Power Changes
- 2) CPS 3105.01, Turbine (TG, EHC, TS)

2.1.2 Portions of this surveillance may be performed independently for post maintenance testing, to facilitate inspections due to repairs.

2.1.3 Turbine CV's fast closure Channel C71-N005A/B/C/D oil pressure switches supply a signal to Reactor Protection System (RPS).

This procedure provides for testing this signal to the point where it enters the 2/4 logic of the RPS.

2.1.4 Turbine Control Valves (CVs) operate in a partial arc two admission scheme.

CV #1, #2 and #3 operate as a trio.

Once these valves reach full open position, CV #4 begins to open.

2.1.5 Observation of smooth CV cycling during power changes and CV testing indicates the absence of valve and/or actuator binding.

2.0 DISCUSSION/DEFINITIONS (cont'd)

2.1.6 When testing the #1, #2, or #3 CV closed, the #4 CV will sequence open (if #1/2/3 are fully open) to maintain proper pressure control.

Short openings of turbine bypass valves may occur due to the time delayed opening of #4 CV because it must overcome a closed-bias signal (if fully closed).

2.1.7 Observation of CV fast closure occurring during ~ the last 10% of the valve closure travel indicates proper operation of the CV's disk dump valve.

Since the #4 CV may be closed or just open during this testing actual valve movement cannot be observed.

The #4 CV valve movement is observed during #4 CV testing performed each Turbine Startup.

Although closed or just open during the on-line test, #4 CV is tested via its test switch to verify the RPS trip is received when the oil pressure switch trips.

- ① 2.1.8 Turbine Control Valve limit switch testing:
The limit switches tested are the 10% open switches that activate the fast closure on the final 10% of valve travel and are used for testing only. Valves that are closed should have this limit switch made-up.

Step 5.9 is required ONLY for valves that are to be tested.

Failure indications:

- a. In the closed position, the associated valve will "Fast Close" for the entire stroke (if open). With the reactor at power, this will cause a plant transient.
- b. In the open position, the associated valve fast closing will be prevented.

With the 10% limit switch failed open, a jumper may be needed in order to test the channel and satisfy ITS SR requirements. Prior to installation of a jumper, attempt a normal test of the valve first. A TCV, especially TCV #4, may appear to be closed but not driven fully shut, such that the test limit switch is not yet made up. Testing a valve will drive it fully shut and allow satisfactory testing WITHOUT jumper installation. The test limit switch does not have to function to achieve an acceptable test that meets ITS requirements.

(Work Order required for jumper installation, reference EC 394961, IR 2712024)

Use the same M&TE for all testing.

Create an Issue Report for unexpected results.

2.2 **Definitions** - None

3.0 **RESPONSIBILITY**

Operations Department Head is responsible for the proper implementation of this procedure.

~~4.0~~

PRECAUTIONS

① ~~4.1~~

Manipulating servo valve currents too fast when manually stroking servo valves could cause TCV oscillations and a reactor scram. (See OPEX 2737607)

~~4.1~~

Review Appendix A, OPEX 323308, Grand Gulf Unit 1, Reactor Scrammed While Performing Main Turbine Stop and Control Valve Surveillance prior to commence this test. (IR 3985777-02)

~~5.0~~

PREREQUISITES

~~5.1~~

This procedure contains critical steps.

A **Critical Step** is "Any action that, when performed improperly, will lead to an unintentional change that adversely impacts plant, system, or personnel".

Performance of this procedure requires screening for a **High Risk/High Production Risk/Risk Sensitive** activity IAW WC-AA-104 and any existing requirements for Command and Control Standards.

Critical steps are indicated by a {CS} in the left margin.

5.0
5.2

PREREQUISITES (cont'd)

In conjunction with the SMngt, review the following impact statements to determine required plant status to perform this test:

OPERABILITY IMPACT:

ITS LCO 3.3.1.1, RPS Instrumentation, Turbine Control Valve Fast Closure, Trip Oil Pressure - Low (MODE 1)
ITS LCO 3.3.4.1, EOC-RPT Instrumentation
ORM 2.2.12, FW System/Main Turbine Trip (MODE 1)

SYSTEMS IMPACTED:AFFECTED ANNUNCIATORS AND COMPUTER POINTS:

5004(5)-2D: DIV 1(2) OR 4(3) TCV FST CL TRIP

RPS TRIP: Turbine Stop Valve Closure Scram

- Prevented by verifying coincident logic not

tripped

CRVICS ISOLATION: N/AOTHER SYSTEMS AFFECTED:

EOC-RPT TCV Fast Closure

REQUIRED OPERABLE CHANNELS:

ITS SR 3.3.1.1.1 - four; ITS SR 3.3.4.1.1 - four
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated function maintains RPS/EOC-RPT trip capability.

PLANT/SYSTEM CONDITIONS REQUIRED TO CONDUCT TEST:

EHC Power Unit is in service and pressurized.

Reactor Power \leq 83% (\leq 90% if testing #4 CV only) (when TG on-line) or Main Turbine in Shell Warming (when TG off-line).

If test is performed during an outage, then the applicable sections of CPS 3812.03, Main Turbine Reset And Valve Stroking During Outages may be performed to open the Turbine Control Valves (Step 5.10).

COINCIDENT CHANNELS THAT PREVENT ACTUATION:

Two out of four trip logic (bypassed at $<$ 33.3% RTP)

<u>Channel under test:</u>	<u>Channels required OPERABLE:</u>
For C71-N005A -	Channels C71-N005B, C and D
For C71-N005B -	Channels C71-N005A, C and D
For C71-N005C -	Channels C71-N005A, B and D
For C71-N005D -	Channels C71-N005A, B and C

Impact Matrix discussed.

Shift Manager / WDK
SMngt Performer

Initial

~~5.0~~

PREREQUISITES (cont'd)

5.3

Obtain SMngt permission to perform this procedure.

XX/XX/XXXX XXXX
Date / Time

SM
SMngt

5.4

Read/brief the following prior to performing test.

WDK

~~1~~

Valve position is monitored at 1H13-P678, Standby Information Panel.

If 1H13-P678 indications not available, computer points may be used to verify position.

~~2~~

Valves should operate smoothly with proper sequencing and indication of disk dump valve actuations.

Record any erratic operation in comments section.

~~3~~

Valves should close at faster rate during last 10% of valve closure due to Fast Acting Solenoids.

If computer point used to verify valve position, then verification of fast closure is not required.

~~4~~

If a valve fails its test, then immediately refer to section 8.5, Test Failure.

~~5~~

Steps to be performed should be reviewed prior to performance to ensure required indications are observed and data is obtained.

5.5

~~IF~~

The turbine generator is On-Line, **THEN:**

1.

Verify no MSV Channel is tripped.

WDK

• Annunciator 5004-1D reset

WDK

• Annunciator 5005-1D reset

WDK

• Computer point C71NC013 reset

WDK

• Computer point C71NC014 reset

WDK

• Computer point C71NC015 reset

WDK

• Computer point C71NC016 reset

WDK

2.

Verify PRESS AMP IN CONTROL light is ON.

PREREQUISITES (cont'd)

~~5.0~~
~~5.6~~

Verify no CV Fast Closure Channel is tripped.

- Annunciator 5004-2D reset WDK
- Annunciator 5005-2D reset WDK
- Computer point C71NC017 reset WDK
- Computer point C71NC018 reset WDK
- Computer point C71NC019 reset WDK
- Computer point C71NC020 reset WDK

~~5.7~~

Verify no divisional NS⁴ Bypass Switches are in BYPASS.

- Division 1 NS4 Sensor Bypass in NORMAL WDK
- Division 2 NS4 Sensor Bypass in NORMAL WDK
- Division 3 NS4 Sensor Bypass in NORMAL WDK
- Division 4 NS4 Sensor Bypass in NORMAL WDK

~~5.8~~

Verify plant condition is either:

- ① ≤ 83% reactor power (TG on-line) OR
 ≤ 90% if testing #4 CV only (TG on-line) WDK
- ② OR
 Main Turbine is in Shell Warming per
 CPS 3105.01, Turbine
 (TG, EHC, TS) (TG off-line). N/A

~~5.0~~
~~5.9~~

PREREQUISITES (cont'd)

Perform the following to check TCV test limit switch Status:

- ~~1~~ Review DISCUSSION step 2.1.8 concerning the purpose of these checks and how to interpret the readings obtained.

CAUTION

*CV Test switches may have 115VAC present.
Verify 115VAC is not present at either listed terminal by checking to earth ground prior to checking for continuity across each contact. (Induced AC voltage can be expected).
Do NOT test an OPEN Control Valve if 115VAC is present on either contact .*

- ~~2~~ **IF** NOT performed within the last seven (7) days
OR the main turbine has been shutdown since the last performance,
THEN

(IMD) Verify contact continuity (open switch) between terminals listed below for each fast acting test limit switch on the CV'S - Control valves, 1TGCV1-4 that will be tested (or NA).

Record results below for each fast acting test limit switch.

- a. >1k ohm = open
- b. ~0 ohm = closed
- c. <1K OHM = EVALUATE

<u>ID NO:</u>	<u>DESCR</u>	<u>1PA06J - TB-TERM'S</u>	<u>115 VAC PRESENT?</u>	<u>EXPECTED</u>	<u>RESULTS</u>
4FO-B101S1	CV #1	1TB2-D404 1 TO GRD	YES/NO	NO	SAT/UNSAT
4FO-B101S1	CV #1	1TB2-D404 2 TO GRD	YES/NO	NO	SAT/UNSAT
4FO-B101S1	CV #1	1TB2-D404 1 TO 2	NA	OPEN	SAT/UNSAT

<u>ID NO:</u>	<u>DESCR</u>	<u>1PA06J - TB-TERM'S</u>	<u>115 VAC PRESENT?</u>	<u>EXPECTED</u>	<u>RESULTS</u>
4FO-B201S1	CV #2	1TB2-D404 4 TO GRD	YES/NO	NO	SAT/UNSAT
4FO-B201S1	CV #2	1TB2-D404 5 TO GRD	YES/NO	NO	SAT/UNSAT
4FO-B201S1	CV #2	1TB2-D404 4 TO 5	NA	OPEN	SAT/UNSAT

(5.9 Continued next page)

~~5.0~~
~~5.9~~

PREREQUISITES (cont'd)

Initial

(Continued)

<u>ID NO:</u>	<u>DESCR</u>	<u>1PA06J - TB-TERM'S</u>	<u>115 VAC PRESENT?</u>	<u>EXPECTED</u>	<u>RESULTS</u>
4FO-B301S1	CV #3	1TB2-D404 7 TO GRD	YES NO	NO	SAT /UNSAT
4FO-B301S1	CV #3	1TB2-D404 8 TO GRD	YES NO	NO	SAT /UNSAT
4FO-B301S1	CV #3	1TB2-D404 7 TO 8	NA	OPEN	SAT /UNSAT

<u>ID NO:</u>	<u>DESCR</u>	<u>1PA06J - TB-TERM'S</u>	<u>115 VAC PRESENT?</u>	<u>EXPECTED</u>	<u>RESULTS</u>
4FO-B401S1	CV #4	1TB2-D404 10 TO GRD	YES NO	NO	SAT /UNSAT
4FO-B401S1	CV #4	1TB2-D404 11 TO GRD	YES NO	NO	SAT /UNSAT
4FO-B401S1	CV #4	1TB2-D404 10 TO 11	NA	OPEN/ SHUT*	SAT /UNSAT

*Based on power level, TCV #4 may be in either position. Circle as-found.

- 5.10 **IF** Performed during an outage,
THEN Verify necessary portions of CPS 3812.03, MAIN TURBINE RESET AND VALVE STROKING DURING OUTAGES and/or CPS 8679.19, MAIN TURBINE RESET FOR OUTAGE MAINTENANCE have been performed to allow resetting the main turbine and opening the Turbine Valves to be tested. N/A
- 5.11 Perform an Annunciator test prior to performance. WDK
- 5.12 For each control valve to be tested, record valve position as indicated on associated 1H13-P678 position meter. WDK

CV-1 25 CV-2 25 CV-3 25 CV-4 0

~~5.13~~ During engineering review of IR 02551821, SBPC REGULATOR ERROR DURING 9031.07, it was identified that a higher resolution on affected Transient Test (TT) points could help pinpoint the cause of the previous event. When performing CPS 9031.07 Main Turbine Control Valve Test, shift the TT computer system points 71-83 to fast data collection (1ms). (IR 2556645)

~~Ø~~

5.14 A pressure regulator error is possible while performing TCV testing. Should a regulator error occur then reset the Regulator Error per 3105.04, Section 8.3.1.1.

~~5.0~~**PREREQUISITES** (cont'd)Initial

①

~~5.15~~

Shift/verify Transient Test points shifted to fast data collection (1ms) if available.

~~WDK~~

- ~~Channel 53, TCV A Position (if testing CV-1)~~
- ~~Channel 54, TCV B Position (if testing CV-2)~~
- ~~Channel 55, TCV C Position (if testing CV-3)~~
- ~~Channel 56, TCV D Position (if testing CV-4)~~
- ~~Channel 71, Pressure Controller Sensed Pressure A~~
- ~~Channel 72, Pressure Controller Sensed Pressure B~~
- ~~Channel 73, Pressure Setpoint A~~
- ~~Channel 74, Pressure Setpoint B~~
- ~~Channel 75, A Pressure Regulator Output~~
- ~~Channel 76, B Pressure Regulator Output~~
- ~~Channel 81, Total Turbine Control Valve Demand~~
- ~~Channel 82, A Bypass Valve Demand~~
- ~~Channel 83, B Bypass Valve Demand~~

~~6.0~~**LIMITATIONS**

①

~~6.1~~

Ensure tested valve has returned to normal operating position prior to testing next valve.

①

~~6.2~~

Allow plant parameters to stabilize between turbine control valve stroking. (IR 2447906-31)

~~7.0~~**MATERIALS/TEST EQUIPMENT** - None

①

CAUTION

When manually stroking servo valves in steps 8.1 through 8.4, manipulating servo valve currents too fast could cause TCV oscillations and a reactor scram. (See IR 2737607 & Appendix A)

8.0 **PROCEDURE**

☞ Valves CV-1, 2, 3, 4 may be tested in any order.

NOTE

A pressure regulator error is possible while performing TCV testing. Should a pressure regulator error occur then reset the Regulator Error per 3105.04, section 8.3.1.

②

Trip Transient Test if high speed data collection is desired.

{CS} 8.1 **CV-1 Main Turbine Control Valve Test** Initial

1. Verify RPS and turbine trips reset and plant conditions stable. IV /

③

CAUTION

Testing an open Turbine Control Valve that has unacceptable step 5.9 data can result in the TCV fast closing when the TEST pushbutton is depressed.

④

2. Verify Section 5.0 Prerequisites are complete and acceptable for CV-1.
 - IF** step 5.9 shows 115 VAC present on either contact,
 - OR** if the test limit switch indicates SHUT with CV-1 indicating OPEN,
 - THEN** do NOT proceed with testing CV-1.
3. Depress and hold the CV-1 TEST push-button, verify the following: «LBD-1» «LBD-2»
 - 1) DIV 1 OR 4 TCV FST CL TRIP annunciator energizes. (5004-2D) _____
 - 2) Computer point C71NC017, TCV FAST CLOSURE CH A actuation. _____
 - 3) Smooth CV-1 operation with fast closing during ~ the last 10% of valve closure. _____
4. Release CV-1 TEST push-button, and verify:
 - 1) CV-1 returns to pre-test position. IV /
 - 2) DIV 1 OR 4 TCV FST CL TRIP annunciator deenergized. (5004-2D) _____

- 3) Computer point C71NC017,
TCV FAST CLOSURE CH A reset.
-

NOTE

A pressure regulator error is possible while performing TCV testing. Should a pressure regulator error occur then reset the Regulator Error per 3105.04, section 8.3.1.

①

Trip Transient Test if high speed data collection is desired.

{CS} 8.3 **CV-3 Main Turbine Control Valve Test** Initial
 1. Verify RPS and turbine trips reset and plant conditions stable. **IV** /

CAUTION

Testing an open Turbine Control Valve that has unacceptable step 5.9 data can result in the TCV fast closing when the TEST pushbutton is depressed.

①

2. Verify Section 5.0 Prerequisites are complete and acceptable for CV-3.

IF step 5.9 shows 115 VAC present on either contact,

OR if the test limit switch indicates SHUT with CV-3 indicating OPEN,

THEN do NOT proceed with testing CV-3.

3. Depress and hold the CV-3 TEST push-button, verify the following: «LBD-1» «LBD-2»

1) DIV 2 OR 3 TCV FST CL TRIP annunciator energizes. (5005-2D) _____

2) Computer point C71NC019, TCV FAST CLOSURE CH C actuation. _____

3) Smooth CV-3 operation with fast closing during ~ the last 10% of valve closure. (N/A if valve was initially < 10% open) _____

4. Release CV-3 TEST push-button, and verify:

1) CV-3 returns to pre-test position. **IV** /

2) DIV 2 OR 3 TCV FST CL TRIP annunciator deenergized. (5005-2D) _____

3) Computer point C71NC019, TCV FAST CLOSURE CH C reset. _____

NOTE

A pressure regulator error is possible while performing TCV testing. Should a pressure regulator error occur then reset the Regulator Error per 3105.04, section 8.3.1.

- ① Trip Transient Test if high speed data collection is desired.

{CS}8.4 **CV-4 Main Turbine Control Valve Test** Initial

☞ Although already closed during the on-line test, #4 CV is tested via its test switch to verify the RPS trip is received when the oil pressure switch trips.

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

IV /

CAUTION

Testing an open Turbine Control Valve that has unacceptable step 5.9 data can result in the TCV fast closing when the TEST pushbutton is depressed.

- ① 2. Verify Section 5.0 Prerequisites are complete and acceptable for CV-4.

_____ **IF** step 5.9 shows 115 VAC present on either contact

OR if the test limit switch indicates SHUT with CV-4 indicating OPEN

THEN do NOT proceed with testing CV-4.

3. If testing #4 CV only at $\leq 90\%$, verify on 1H13-P678 that #4 CV is full closed.

4. Depress and hold the CV-4 TEST push-button, verify the following: «LBD-1» «LBD-2»

1) DIV 1 OR 4 TCV FST CL TRIP annunciator energizes. (5004-2D)

2) Computer point C71NC020, TCV FAST CLOSURE CH D actuation.

3) If off-line (otherwise N/A), smooth CV-4 operation with fast closing during ~ the last 10% of valve closure.

5. Release CV-4 TEST push-button, and verify:

1) CV-4 returns to pre-test position, **or** if closed, remains closed when performing test On-Line.

IV /

2) DIV 1 OR 4 TCV FST CL TRIP annunciator deenergized. (5004-2D)

- 3) Computer point C71NC020,
TCV FAST CLOSURE CH D reset.
-

8.5 **TEST FAILURE** «CM-1»

8.5.1 If the Valve does not fast close last 10% of the stroke:

- 1) Immediately begin investigation into the cause of failure to fast close. _____
- 2) If the cause is due to failure of components in the test circuit, correct the condition and retest the valve to determine the fast closing action takes place. _____
- 3) If the reason for not fast closing is due to stuck disc dump valve;
 - a) Reduce the turbine load to less than 75% RTP consistent with 1 valve failed closed (See EC 381804). _____
 - b) Close the failed valve using test push button and isolate the valve hydraulically. _____

NOTE

CPS is not analyzed for a fast acting solenoid out of service. If a fast acting solenoid is determined to be failed, then the actions for ITS 3.3.1.1 and 3.3.4.1 are appropriately and conservatively entered.

- 4) If the reason for not fast closing is due to a faulty EHC pressure switch, Fast acting solenoid or any other part of the circuit required for channel operability;
 - a) Enter the required actions for ITS 3.3.1.1 and 3.3.4.1 _____

8.5.2 **IF** The valve fails to slow close by depressing the test push button (indicating that the valve is mechanically stuck open),

THEN Commence power reduction to safely shut down the Turbine and bring it off line in a controlled manner. _____

8.6 **RESTORATION**

8.6.1 **IF** Triggered by Shell Warming,
THEN Continue with or restore from
 shell warming per CPS 3105.01 (TG). _____

8.6.2 **IF** Performed during an outage,
THEN Restore only those trips not needed
 for other outage functions per
 CPS 3812.03, Main Turbine Reset And
 Valve Stroking During Outages. _____

8.6.3 Notify SMngt of test completion.
 _____ / _____
 Date Time _____

9.0 **ACCEPTANCE CRITERIA**

9.1 **OPERABILITY Requirements** - Failure to meet the Acceptance Criteria shall constitute a failure to comply with the applicable ITS LCO/ORM OR. ITS/ORM should be immediately reviewed to identify Action Statements needed for implementation. Refer to Supplemental Review Sheet for applicable ITS LCOs/ORM ORs.

9.1.1 A trip of RPS Turbine CV Fast Closure Channels occurs from valve trip system oil pressure low signal as evidenced by annunciators 5004-2D(5005-2D) alarming or computer points C71NC017(18,19,20) indicating. «LBD-1» «LBD-2»

9.2 **OTHER Requirements**

9.2.1 If a turbine control valve fails to XXXX cycle as required by USAR 10.2.3.6, «LBD-3»

1. Refer to section 8.5.
2. Initiate a Condition Report.

10.0 **FINAL CONDITIONS**

All Turbine Control Valves are in pre-test position.

11.0 **REFERENCES**

- 11.1 LBD-1: ITS SR 3.3.1.1.9
«2.1.1, 8.1.3, 8.2.3, 8.3.3, 8.4.3, 9.1.1»
- 11.2 LBD-2: ITS SR 3.3.4.1.1
«2.1.1, 8.1.3, 8.2.3, 8.3.3, 8.4.3, 9.1.1»
- 11.3 LBD-3: USAR 10.2.3.6 «9.2.1»
- 11.4 CPS 3005.01, Unit Power Changes
- 11.5 CPS 3105.01, Turbine (TG, EHC, TS)
- 11.6 CPS 3105.04, Steam Bypass and Pressure Regulator (SB)
- 11.7 CPS 3812.03, Main Turbine Reset And
Valve Stroking During Outages
- 11.8 CM-1: CR1-97-09-118/Record of Coordination Y-106718 «8.5»
- 11.9 G.E. Steam Turbine - Generator Technical Manual GEK-64903,
Vol I and III, Tabs 3 and 42, K2804-0007
- 11.10 GE Energy Services Memo, Missile Probabilities for
Extended Intervals, dated August 30, 1999
- ① 11.11 CPS 8679.19, Main Turbine Reset For Outage Maintenance
- ① 11.12 OPEX 323308, Grand Gulf Unit 1, Reactor Scrammed While
Performing Main Turbine Stop and Control Valve Surveillance

12.0 **APPENDICES**

- ① 12.1 APPENDIX A, OPEX 323308, Grand Gulf Unit 1, Reactor Scrammed While Performing Main Turbine Stop and Control Valve Surveillance

- 13.0 **DOCUMENTS** - None

APPENDIX A**① OPEX 323308, Grand Gulf Unit 1, Reactor Scrammed While Performing Main Turbine Stop and Control Valve Surveillance****Event Summary:**

On June 17, 2016, Grand Gulf Nuclear Station Unit 1 (GGNS) was in Mode 1 at approximately 65% power after a planned power reduction to complete a control rod sequence exchange, steam jet air ejector swap, cooling tower acid flush and surveillance test 06-OP-1N32-V-0001 "Turbine Stop and Control Valve Operability."

While performing the Main Turbine stop and control valve operability surveillance procedure, the "B" Turbine Stop Valve (TSV) was fast closed as procedurally directed, while attempting to reset the "B" TSV the "D" TSV unexpectedly closed resulting in a Division 2 Reactor Protection System (RPS) half SCRAM.

With the "B" and "D" TSVs closed, the "A" and "C" Turbine Control Valves (TCV) were unable to precisely control Turbine load and Reactor pressure. Turbine and Reactor pressure began to fluctuate because the "A" and "C" TCVs began oscillating. Reactor pressure increased, but remained below the high pressure alarm and SCRAM setpoint of 1064.7 psig. Reactor water level fluctuated but remained between the high and low SCRAM setpoints +11.4" and +53.5" Narrow Range (NR).

Computer trend data showed and the operating crew observed that Reactor power oscillated 10-20% peak to peak on the Average Power Range Monitoring System (APRM). Reactor pressure oscillated 20 psig peak to peak. The oscillations on Reactor power, pressure, and level lasted for approximately 39 minutes prior to the Control Room Supervisor (CRS) directing the insertion of Control Rods to reduce Reactor power at 02:56. At 02:57 a Neutron Monitoring System Oscillation Power Range Monitoring (OPRM) trip occurred resulting in an automatic Reactor SCRAM.

Cause Summary:

The direct cause of this event was the Reset Solenoid Valve 1N32F514C stuck in a position that opened a drain path allowing depressurizing of the trip fluid supply header.

Procedure 06-OP-1N32-V-0001 Attachment II instructions were developed allowing the use of a force amplifying tool to manually operate ATT Solenoid Valves. The adverse effect of tool usage on the solenoid valve and alternate manual testing methods, where use of the tool was not required, were not considered.

The Reset Solenoid Valve 1N32F514C misoperated when a force multiplying tool was used to actuate it. This opened an unintended drain path from the Trip Fluid Supply to the depressurized Start-Up Fluid header causing

a rapid loss of Trip Fluid header pressure resulting in TSV "D" (MSV 1) closure and initiation of Turbine and Reactor pressure oscillations.

APPENDIX A (Cont'd)

① OPEX 323308, Grand Gulf Unit 1, Reactor Scrammed While Performing Main Turbine Stop and Control Valve Surveillance

Corrective Action Summary:

Replaced both 1N32F514C (SJ13S243) and 1N32F515C solenoid valves.

The operators responded to the automatic SCRAM maintaining reactor water level and pressure in accordance with station procedures.

The Shift Manager provided a four hour report to the NRC for the automatic SCRAM per 01-S-06-5, Reportable Events or Condition Procedure.

MAIN TURBINE CONTROL VALVE TESTS

SUPPLEMENTAL REVIEW SHEET

Corrective Action Taken

Operability Requirements:

ITS LCOs: 3.3.1.1 3.3.4.1
ORM ORs: 2.2.12
ODCM ORs: None

As applicable:

Initiated Condition Report No. _____

Initiated Work Document No. _____

Comments/Deficiencies

Review and Approval

SMngt: _____

(Signature)

(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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>CPS 3105.01</u>	Revision: <u>44b</u>
Procedure: _____	Revision: _____
Procedure: _____	Revision: _____
Procedure: _____	Revision: _____
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

Revision Record (Summary)

Revision #	Summary
00	8/21/20 – New JPM.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM563 per step 2)
 - a. Initialize to any suitable at power IC (reactor power operations IAW CPS 3005.01 Unit Power Changes).
 - b. Verify normal TG / TG Lube Oil system operation.
 - c. Freeze the simulator.
 - d. Save to a different IC if JPM is being used more than once. IC-218 is saved for the ILT 19-1 NRC exam (PW 13852).
 - e. This completes the setup for this JPM.

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

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-218 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. Open and execute Simulator Lesson Plan ILT 19-1 NRC Exam JPMs LP.
 - c. Release JPM563 which will:
 - Alarm annunciator 5018-1A Low Pressure Main Turbine Brg Oil Header when Turning Gear Oil Pump (TGOP) Test switch is placed in “Test B” and clear annunciator 5018-1A when TGOP Test switch is returned to “OFF”.
 - Simulate the starting of TGOP using 1PS-TO009B (field action).
 - d. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
 - e. Save to a different IC if required.
 - f. Freeze the simulator.

INITIAL CONDITIONS

You are the Extra RO.

The Turbine Lube Oil system is operating normally IAW CPS 3105.01 Turbine (TG, EHC, TS). A Field Operator has been briefed and is standing by to perform any required field operations.

INITIATING CUE

The CRS has directed you to perform on-line testing of the Turning Gear Oil Pump (1TO04P) IAW CPS 3105.01 Turbine (TG, EHC, TS) section 8.1.13 On-Line Testing of the Turning Gear Oil Pump (1TO04P).

Report to the CRS after completing the task.

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: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will successfully complete on-line testing of the Turning Gear Oil Pump (1TO04P).

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the Cue Sheet and a copy of CPS 3105.01 Turbine (TG, EHC, TS).				
*01	8.1.13.1 Prevents auto starting of the Turbine Bearing Lift Pumps when the Turning Gear Oil Pump (TGOP) is started.	Examinee places pump control switches in “PULL-TO-LOCK” for Turbine Bearing Lift Pumps and verifies (red light OFF, green light OFF): <ul style="list-style-type: none"> • 1TO11P & 1TO12P • 1TO14P & 1TO15P • 1TO13P & 1TO16P 	<input type="checkbox"/>	<input type="checkbox"/>	—
*02	8.1.13.2 – 8.1.13.3 Starts the Turning Gear Oil Pump (TGOP) – TEST A.	Examinee places the TURNING GEAR OIL PUMP TEST switch to “TEST A” and verifies the TGOP automatically starts by observing: <ul style="list-style-type: none"> • TGOP Control Switch (red light ON, green light OFF) • AUTO START TURB AUXILIARY PUMP/MOTOR annunciator alarming (5017-6A LIT) • Local pressure indicator (1PI-TO104 indication INCREASING as reported from the field). 	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	If the examinee reports receipt of annunciator 5017-6A AUTO START TURB AUXILIARY PUMP/ MOTOR, acknowledge the report. Field Operator – when requested by the examinee, report “local pressure indicator 1PI-TO104 indication increased in conjunction with the TGOP start”.				
*03	8.1.13.4 – 8.1.13.5 Stops the Turning Gear Oil Pump (TGOP).	Examinee places the TURNING GEAR OIL PUMP TEST switch to “OFF”. Examinee places the Turning Gear Oil Pump (1TO04P) control switch to “AUTO/AFTER STOP” and verifies the TGOP stops by observing: <ul style="list-style-type: none"> • TGOP Control Switch (red light OFF, green light ON) • AUTO START TURB AUXILIARY PUMP/MOTOR annunciator clear (5017-6A OFF) • Local pressure indicator (1PI-TO104 indication LOWERS as reported from the field). 	<input type="checkbox"/>	<input type="checkbox"/>	<hr style="width: 20px; margin: 0 auto;"/>
CUE	If the examinee reports clearing of annunciator 5017-6A AUTO START TURB AUXILIARY PUMP/ MOTOR, acknowledge the report. Field Operator – when requested by the examinee, report “local pressure indicator 1PI-TO104 indication lowered in conjunction with securing the TGOP”.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*04	8.1.13.6 – 8.1.13.7 Starts the Turning Gear Oil Pump (TGOP) – TEST B.	Examinee places the TURNING GEAR OIL PUMP TEST switch to “TEST B” and verifies the TGOP automatically starts by observing: <ul style="list-style-type: none"> • LOW PRESS MAIN TURBINE BRG OIL HEADER annunciator alarming (5018-1A LIT) • TGOP Control Switch (red light ON, green light OFF) • AUTO START TURB AUXILIARY PUMP/MOTOR annunciator alarming (5017-6A LIT) • Local pressure indicator (1PI-TO104 indication INCREASING as reported from the field). 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	If the examinee reports receipt of annunciators 5017-6A AUTO START TURB AUXILIARY PUMP/ MOTOR and 5018-1A LOW PRESS MAIN TURBINE BRG OIL HEADER, acknowledge the report. Field Operator – when requested by the examinee, report “local pressure indicator 1PI-TO104 indication increased in conjunction with the TGOP start”.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*05	8.1.13.8 – 8.1.13.9 Stops the Turning Gear Oil Pump (TGOP).	<p>Examinee places the TURNING GEAR OIL PUMP TEST switch to “OFF”.</p> <p>Examinee places the Turning Gear Oil Pump (1TO04 P) control switch to “AUTO/AFTER STOP” and verifies the TGOP stops by observing:</p> <ul style="list-style-type: none"> • LOW PRESS MAIN TURBINE BRG OIL HEADER annunciator clear (5018-1A OFF) • TGOP Control Switch (red light OFF, green light ON) • AUTO START TURB AUXILIARY PUMP/MOTOR annunciator clear (5017-6A OFF) • Local pressure indicator (1PI-TO104 indication LOWERS as reported from the field). 	<input type="checkbox"/>	<input type="checkbox"/>	<hr style="width: 20px; margin: auto;"/>
CUE	<p>If the examinee reports clearing of annunciators 5017-6A AUTO START TURB AUXILIARY PUMP/ MOTOR and 5018-1A LOW PRESS MAIN TURBINE BRG OIL HEADER, acknowledge the report.</p> <p>Field Operator – when requested by the examinee, report “local pressure indicator 1PI-TO104 indication lowered in conjunction with securing the TGOP”.</p>				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*06	8.1.13.10.1 – 8.1.13.10.4 Starts the Turning Gear Oil Pump (TGOP) – pressure switch 1PS-TO009B.	<p>Examinee directs Field Operator to perform the following:</p> <ul style="list-style-type: none"> • SHUT Shaft Pmp Disch Press Rt (1TO007). • Monitor pressure (1PI-TO100) while <u>slowly</u> loosening the drain plug/cap between 1TO007 and pressure switch 1PS-TO009B. <p>Examinee verifies the TGOP automatically starts by observing:</p> <ul style="list-style-type: none"> • TGOP Control Switch (red light ON, green light OFF) • AUTO START TURB AUXILIARY PUMP/MOTOR annunciator alarming (5017-6A LIT) • Local pressure indicator (1PI-TO104 indication INCREASING as reported from the field). 	<input type="checkbox"/>	<input type="checkbox"/>	<hr style="width: 20px; margin: 0 auto;"/>
CUE	<p>If the examinee reports receipt of annunciator 5017-6A AUTO START TURB AUXILIARY PUMP/ MOTOR, acknowledge the report.</p> <p>Field Operator – when requested by the examinee, report:</p> <ul style="list-style-type: none"> • “1TO007 is SHUT”. • BOOTH OPERATOR release ‘1TO04P Pump Start’ and report “1PI-TO100 indicated approximately 190 psig in conjunction with the TGOP start”. • “local pressure indicator 1PI-TO104 indication increased in conjunction with the TGOP start”. 				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*07	8.1.13.10.4 – 8.1.13.10.6 Stops the Turning Gear Oil Pump (TGOP).	<p>Examinee directs Field Operator to perform the following:</p> <ul style="list-style-type: none"> • Tighten the drain plug/cap snug tight. • Slowly OPEN Shaft Pmp Disch Press Rt (1TO007). <p>Examinee places the Turning Gear Oil Pump (1TO04 P) control switch to “AUTO/AFTER STOP” and verifies the TGOP stops by observing:</p> <ul style="list-style-type: none"> • TGOP Control Switch (red light OFF, green light ON) • AUTO START TURB AUXILIARY PUMP/MOTOR annunciator clear (5017-6A OFF) • Local pressure indicator (1PI-TO104 indication LOWERS as reported from the field). 	<input type="checkbox"/>	<input type="checkbox"/>	_____
CUE	<p>If the examinee reports clearing of annunciator 5017-6A AUTO START TURB AUXILIARY PUMP/ MOTOR, acknowledge the report.</p> <p>Field Operator – when requested by the examinee, report:</p> <ul style="list-style-type: none"> • “Drain plug/cap is snug tight.” • “1TO007 is OPEN”. • “Local pressure indicator 1PI-TO104 indication lowered in conjunction with securing the TGOP”. 				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*08	8.1.13.11 Restores auto start capability of the Turbine Bearing Lift Pumps.	Examinee places pump control switches in “AUTO” for Turbine Bearing Lift Pumps and verifies (red light OFF, green light ON): <ul style="list-style-type: none"> • 1TO11P & 1TO12P • 1TO14P & 1TO15P • 1TO13P & 1TO16P 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	JPM is complete.				

JPM Stop Time: _____



NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

You are the Extra RO.

The Turbine Lube Oil system is operating normally IAW CPS 3105.01 Turbine (TG, EHC, TS).

A Field Operator has been briefed and is standing by to perform any required field operations.

INITIATING CUE

The CRS has directed you to perform on-line testing of the Turning Gear Oil Pump (1TO04P) IAW CPS 3105.01 Turbine (TG, EHC, TS) section 8.1.13 On-Line Testing of the Turning Gear Oil Pump (1TO04P).

Report to the CRS after completing the task.

Job Performance Measure**CNMT Pool Makeup From Suppression Pool**JPM Number: JPM531Revision Number: 03Date: 8/21/2020Developed By: Bill Kiser / 8/21/20
Instructor: Print / Sign DateReviewed By: _____ / _____
SME or Instructor: Print / Sign DateReviewed By: _____ / _____
Operations Representative: Print / Sign DateApproved By: _____ / _____
Training Department: Print / Sign 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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>CPS 3312.01</u>	Revision: <u>47d</u>
Procedure: <u>CPS 3317.01</u>	Revision: <u>33e</u>
Procedure: _____	Revision: _____
Procedure: _____	Revision: _____
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

Revision Record (Summary)

Revision #	Summary
00	8/25/15 – New JPM.
01	7/28/17 – Updated initiating cue to reflect new hard card 4411.03H001. Made the JPM setup more automatic.
02	3/6/18 – Updated procedure references and changed to new JPM template.
03	8/21/20 – Updated references. Updated JPM template.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM531 per step 2)
 - a. Reset the simulator to any Mode 4 IC with RHR Pump 'A' in standby.
 - b. Dump the upper containment pools by performing the following:
 - Shut 1FC036, FC Sply CNMT Outbd Isol Vlv.
 - Shut 1FC037, FC Sply CNMT Inbd Isol Vlv.
 - Open 1SM001A, Supp Pool Dump Vlv.
 - Open 1SM002A, Supp Pool Dump Vlv.
 - Open 1SM001B, Supp Pool Dump Vlv.
 - Open 1SM002B, Supp Pool Dump Vlv.
 - c. **Shut 1SM001A, 2A, 1B, AND 2B as soon as 5040-5E LOW LEVEL CNMT XFER POOL is received (note – delaying this action will add substantial time to the JPM).**
 - d. Freeze the simulator.
 - e. Save to a different IC if JPM is being used more than once. IC-219 is saved for the ILT 19-1 NRC exam (PW 13852).
 - f. This completes the setup for this JPM.

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

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-219 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. Open and execute Simulator Lesson Plan ILT 19-1 NRC Exam JPMs LP.
 - c. When the above steps are completed for this and other JPMs to be run concurrently, then validate the concurrently run JPMs if applicable.
 - d. Save to a different IC if required.
 - e. Freeze the simulator.
 - f. Releasing JPM531 will energize 1E12-F037A. Perform when requested by examinee.

INITIAL CONDITIONS

The plant is in Mode 4.

An event occurred requiring the Upper Containment Pools to be dumped using CPS 4411.03H001, DUMP UPPER POOL Hard Card.

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

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

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

INITIATING CUE

The CRS has directed you to restore Upper Containment Pool level per CPS 3312.01 Residual Heat Removal (RHR) section 8.3.2 Pumping Suppression Pool To CNMT Pool using Residual Heat Removal (RHR) Pump 'A'.

You have Plant Manager's permission to perform the directed task.

Report to the CRS after completing the task.

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.

.....

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

JPM Start Time: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will successfully restore Upper Containment Pool level using the Residual Heat Removal (RHR) system.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
CUE	Provide the examinee with the Cue Sheet and: <ul style="list-style-type: none"> • CPS 3312.01 Residual Heat Removal (RHR) • CPS 3317.01 Fuel Pool Cooling and Cleanup (FC) with steps 8.1.4.9.1 and 8.1.4.9.2 marked as complete. 				
01	8.3.2.1 – 8.3.2.4 Performs pre-transfer activities.	Examinee verifies Plant Manager permission has been obtained. Examinee notifies Chemistry that Suppression Pool water will be transferred to the Upper Containment Pools. Examinee verifies CPS 3317.01 8.1.4.9.1 and 8.1.4.9.2 are complete. Examinee establishes communications between CNMT pool area and MCR.	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	When requested by the examinee, acknowledge the request and report: Chemistry Technician – “the water in the Suppression Pool meets the chemistry requirements for transfer to the Upper Containment Pools”. Field Operator – “I am staged by the Upper Containment Pools”.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*02	8.3.2.6 Shuts breaker for RHR System 1A Shutdown Cooling Upper Pool Valve (1E12-F037A).	Examinee directs the Field Operator to: <ul style="list-style-type: none"> shut the breaker for 1E12-F037A at AB MCC 1A2 Cub 1B, and place Alarm Bypass Switch 1E12S070A to Normal at AB MCC 1A2 Cub 1B. 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	When requested by the examinee, acknowledge the request and: Field Operator – cue simulator booth operator to insert REMOTE 1. Report, “the breaker for 1E12-F037A is shut”. Field Operator – report, “Alarm Bypass Switch 1E12S070A is in Normal”.				
03	8.3.2.8 – 8.3.2.9 Performs pre-transfer activities.	Examinee verifies: <ul style="list-style-type: none"> 1RIX-PR038 Shutdown Service Water A Effluent PRM indicates reliable on the MCR AR/PR LAN 1E12-F048A RHR ‘A’ Heat Exchanger Bypass Valve is open (red light on, green light off). 	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*04	8.3.2.10 – 8.3.2.12 Starts RHR Pump A and commences SP to Upper Cnmt Pool transfer.	<p>Examinee starts RHR Pump ‘A’ and verifies the pump is running (red light is ON, green light is Off) and current is indicated on RHR Pump A Amps Meter.</p> <p>Examinee:</p> <ul style="list-style-type: none"> • Opens 1E12-F037A until RHR Pump A Flow indicator E12-R603A indicates ≥4300 gpm at 1H13-P601-5064. • Verifies flow to CNMT pools by observing flow on RHR Pump A flow meter. 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	<p>If the examinee:</p> <ul style="list-style-type: none"> • reports starting RHR Pump ‘A’, acknowledge the report. • reports commencing filling the Upper Containment Pools to the Field Operator and/or the CRS, acknowledge the report. • Requests status of Upper Containment Pool Level, as the Field Operator report, “the Upper Containment Pool Level is rising”. <p>When 5040-5E Low Level Cnmt Xfer Pool Clears, cue the examinee as the Equipment Operator, “the upper containment pool level is ~ 6 inches from the bottom edge of the lowest skimmer and rising”.</p>				
NOTE:	<p>The cue for step 05 to close 1E12-F037A is triggered when annunciator 5040-5F Low Level Upper CNMT Pool resets. Be prepared to provide the cue to the examinee when annunciator 5040-5F resets.</p> <p>At 5000 gpm RHR flow, it will take ~ 5-6 minutes for 5040-5F to reset.</p>				
*05	8.3.2.13.1 Secures Suppression Pool to Upper Containment Pool transfer.	<ul style="list-style-type: none"> • Examinee shuts 1E12-F037A until the green light is ON and the red light is OFF. 	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	When annunciator 5040-5F Low Level Upper Cnmt Pool RESETS, cue the examinee (as the Equipment Operator in the Containment) that Upper Containment Pool Level has covered the weir walls.				
*06	8.3.2.13.2 Secures RHR Pump A.	Examinee: <ul style="list-style-type: none"> Secures RHR Pump and verifies red light is OFF and green light is ON. 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	If the examinee reports securing RHR Pump 'A', acknowledge the report. JPM is complete.				

JPM Stop Time: _____

.....

NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

The plant is in Mode 4.

An event occurred requiring the Upper Containment Pools to be dumped using CPS 4411.03H001, DUMP UPPER POOL Hard Card.

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

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

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

INITIATING CUE

The CRS has directed you to restore Upper Containment Pool level per CPS 3312.01 Residual Heat Removal (RHR) section 8.3.2 Pumping Suppression Pool To CNMT Pool using Residual Heat Removal (RHR) Pump 'A'.

You have Plant Manager's permission to perform the directed task.

Report to the CRS after completing the task.

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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>3501.01</u>	Revision: <u>29a</u>
Procedure: _____	Revision: _____
Procedure: _____	Revision: _____
Procedure: _____	Revision: _____
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

Revision Record (Summary)

Revision #	Summary
00	8/21/15 – New JPM.
01	8/24/20 – Updated references. Updated JPM template.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM432 per step 2)
 - a. Initialize to any suitable IC in which the RAT and ERAT transformers are available.
 - b. Ensure 4160V Bus 1B1 is aligned to the RAT.
 - c. Freeze the simulator.
 - d. Save to a different IC if JPM is being used more than once. IC-218 is saved for the ILT 19-1 NRC exam (PW 13852).
 - e. This completes the setup for this JPM.

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

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-218 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. Open and execute Simulator Lesson Plan ILT 19-1 NRC Exam JPMs LP.
 - c. Release JPM432 which will perform the following:
 - After the Reserve Breaker Sync switch is turned on, the lesson plan will override the 4160V Bus 1B1 Res Bkr Sync switch back to off, and also override the running and incoming voltage meters to mask that the Sync Switch is turned off. This will result in failure of the Reserve Feed Breaker for 1B1 to close in when paralleling to the ERAT.
 - Inserts a bus 1B1 overcurrent trip if the sync switch isn't turned off before releasing the Reserve Feed Breaker control switch to deenergize 4160V Bus 1B1.
 - d. 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.
 - e. Verify proper operation of sync switch.
 - f. Save to a different IC if required.
 - g. Freeze the simulator.

INITIAL CONDITIONS

You are the 'B' RO.

CPS 9080.02 DIESEL GENERATOR 1B OPERABILITY - MANUAL AND QUICK START OPERABILITY is scheduled to be performed.

INITIATING CUE

To support performance of CPS 9080.02, the CRS has directed you to transfer 4160V Bus 1B1 from the RAT to the ERAT per CPS 3501.01 HIGH VOLTAGE AUXILIARY POWER SYSTEM.

Report to the CRS after completing the task.

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: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will attempt to transfer 4160V Bus 1B1 from the RAT to the ERAT per CPS 3501.01 HIGH VOLTAGE AUXILIARY POWER SYSTEM; then recognize the failure of the breaker to close and turn the sync switch to OFF before releasing the 4160V Bus 1B1 Res Bkr control switch.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the Cue Sheet and the following: <ul style="list-style-type: none"> CPS 3501.01 High Voltage Auxiliary Power System 				
01	8.1.8.1 Determines Voltage Monitoring is NOT required.	Examinee observes Emergency Reserve Auxiliary Transformer (ERAT) SVC indications (output voltage & VARS, SVC breaker positions) on 1H13-P870-5010 and determines that voltage monitoring is NOT required.	<input type="checkbox"/>	<input type="checkbox"/>	—
*02	8.1.8.2 Places the Bus Res {Mn} Bkr Sync keylock switch to the ON position.	Examinee locates the 4160V Bus 1B1 Res Bkr Sync switch on 1H13-P877-5061 and turns the switch clockwise to the ON position.	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
03	8.1.8.3 Adjusts 4160V Bus Incoming Voltage within 4084-4300V.	Examinee verifies that voltage is between 4084 - 4300V on 4160V Bus 1B1 Incoming Voltage meter on 1H13-P877-5061 and determines that voltage adjustment is NOT required.	<input type="checkbox"/>	<input type="checkbox"/>	—
04	8.1.8.4 Verifies the synchroscope is steady at ~ the 12 o'clock position.	Examinee verifies that 4160V Bus 1B1 Synchroscope on 1H13-P877-5061 is steady at ~ the 12 o'clock position.	<input type="checkbox"/>	<input type="checkbox"/>	—
ALTERNATE PATH BEGINS					
*05	8.1.8.5 Closes the Bus Res Bkr, and <u>prior</u> to releasing the switch to the AUTO position, verify: <ul style="list-style-type: none"> • Closed indication on the source breaker, and • A load shift is indicated on the bus load meters. Recognizes source breaker failed to close, <u>Then</u> places the sync switch to OFF <u>prior</u> to releasing the switch to the AUTO position (preventing the auto trip of the load breaker and the resulting loss of the bus).	Examinee locates the 4160V Bus 1B1 Res Bkr control switch on 1H13-P877-5061, rotates the CS clockwise to the close position. Examinee recognizes the failure of the breaker to close and turns the sync switch to OFF before releasing the 4160V Bus 1B1 Res Bkr control switch.	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	<u>SAT</u>	<u>UNSAT</u>	<u>Comment Number</u>
CUE	If the examinee reports the failure of the 4160V Bus 1B1 Reserve Feed Breaker to close, acknowledge the report. JPM is complete.				

JPM Stop Time: _____



NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

You are the 'B' RO.

CPS 9080.02 DIESEL GENERATOR 1B OPERABILITY - MANUAL AND QUICK START OPERABILITY is scheduled to be performed.

INITIATING CUE

To support performance of CPS 9080.02, the CRS has directed you to transfer 4160V Bus 1B1 from the RAT to the ERAT per CPS 3501.01 HIGH VOLTAGE AUXILIARY POWER SYSTEM.

Report to the CRS after completing the task.

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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>3203.01</u>	Revision: <u>37</u>
Procedure: <u>5040.01</u>	Revision: <u>28d</u>
Procedure: <u>3317.01</u>	Revision: <u>33e</u>
Procedure: <u>3317.02</u>	Revision: <u>18d</u>
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

_____/_____
SME / Instructor (Print/Sign) _____
Date

Revision Record (Summary)

Revision #	Summary
00	6/18/15 – New JPM.
01	8/24/20 – Updated references. Updated JPM template.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM466 per step 2)
 - a. Initialize to any suitable at power IC.
 - b. Freeze the simulator.
 - c. Save to a different IC if JPM is being used more than once. IC-216 is saved for the ILT 19-1 NRC exam (PW 13852).
 - d. This completes the setup for this JPM.

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

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-216 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. Open and execute Simulator Lesson Plan ILT 19-1 NRC Exam JPMs LP.
 - c. Release JPM466 which will perform the following:
 - Insert YP_XMFTB_3918 to trip CCW Pump 1B 45 seconds after 1CC01PC control switch is taken to STOP.
 - Insert override to make CCW Pump 1C appear to run in a 'deadheaded' condition if started after 1CC02C is reported SHUT (S_A11_A07_S03=5, S_A11_A07_S03=2, H_A11_A07_DS09_1=ON, H_A11_A07_DS08_1=OFF, H_A11_A07_DS07_1=OFF, H_A11_A04_M06_1=1, time delay = 3 seconds, H_A11_A04_MO6_1=0.6).
 - d. 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.
 - e. Save to a different IC if required.
 - f. Freeze the simulator.

INITIAL CONDITIONS

You are the 'B' RO.

The plant is operating at power.

The CRS has just informed the Control Room team that they will be making preparations to hang a clearance for MMD to perform maintenance on CCW Pump 1C.

INITIATING CUE

Shift CCW pumps from B/C CCW Pumps operating to A/B CCW Pumps operating IAW CPS 3203.01 COMPONENT COOLING WATER (CC) Section 8.1.2 Pump Shift.

A Field Operator is stationed to support the task.

Report to the CRS after completing the task.

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: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will respond to a loss of Component Cooling Water (CCW) pumps (1 continues to run) by securing the running Fuel Pool Cooling (FC) pump and shutting the FC Heat Exchanger (HX) valves.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the Cue Sheet and the following: <ul style="list-style-type: none"> CPS 3203.01 Component Cooling Water (CC) 				
*01	8.1.2.1 – 8.1.2.2 Starts Component Cooling Water (CCW) pump 'A'.	Examinee directs the Field Operator vent the standby CCW pump IAW CPS 3203.01.	<input type="checkbox"/>	<input type="checkbox"/>	—
		Examinee places control switch for 1CC01PA at 1H13-P800-5040 to the 'START' position. Verifies RED light ON, GREEN light OFF. Observes CCW Pump 1A motor current pegs high then lowers to the normal band (~53amps).	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	If the examinee directs the Field Operator to vent the standby CCW pump, acknowledge the order and report " the 'A' Component Cooling Water Pump venting is complete".				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*02	8.1.2.3 – 8.1.2.5 Secures Component Cooling Water (CCW) pump 'C'.	Examinee directs the Field Operator to slowly shut 1CC002C.	<input type="checkbox"/>	<input type="checkbox"/>	—
		Examinee places control switch for 1CC01PC at 1H13-P800-5040 to the 'STOP' position. Verifies RED light OFF, GREEN light ON.	<input type="checkbox"/>	<input type="checkbox"/>	—
		Examinee directs the extra EO to open 1CC002C.	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	<p>If the examinee directs the Field Operator to:</p> <ul style="list-style-type: none"> slowly shut 1CC002C, acknowledge the order and report "1CC002C is Shut". slowly open 1CC002C, acknowledge the order and report "1CC002C will <u>not</u> Open". <p>If the examinee reports the failure of 1CC002C and/or requests maintenance support, as CRS acknowledge the report/request and respond, Maintenance is notified".</p>				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
ALTERNATE PATH BEGINS					
03	Responds to AUTO TRIP PUMP/MOTOR annunciator 5040-1B. Recognizes that CCW Pump 'B' and 'C' are unavailable.	Examinee: <ul style="list-style-type: none"> acknowledges and announces annunciator. recognizes and reports CCW Pump 'B' is TRIPPED. reviews Annunciator Response Procedure (ARP). 	<input type="checkbox"/>	<input type="checkbox"/>	—
		Examinee recognizes there is only one CCW pump available (No standby) and that the following must be performed: <ul style="list-style-type: none"> Shutdown the running FC pump per CPS 3317.01 FUEL POOL COOLING AND CLEANUP (FC). Shut 1CC076A & 76B, FC Heat Exchanger Outlet Valves. 	<input type="checkbox"/>	<input type="checkbox"/>	—
NOTE: Investigation will NOT reveal any cause and if attempted, CCW Pump 'B' will not restart. Heat Exchange isolation will occur after pump is secured.					
CUE	If the examinee requests permission or recommends securing FC per the 5040-1B ARP actions, direct the examinee to perform recommended actions. Provide examinee a copy of CPS 3317.01 FUEL POOL COOLING AND CLEANUP (FC) once he/she locates the MCR copy.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
04	CPS 3317.01 8.1.3.1 – 8.1.3.3 8.1.4.12.1 – 8.1.4.12.2 Performs prep activities to shutdown Fuel Pool Cooling (FC).	Examinee determines: <ul style="list-style-type: none"> • IFTS is <u>not</u> lined up for operation. • FC pumps are <u>not</u> being shifted. • Upper Pool level is being maintained by a Field Operator 	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	If asked, respond as CRS or WCS as applicable, "A Field Operator is stationed to maintain Upper Pool level per step 8.1.4.12.2 of CPS 3317.01 FUEL POOL COOLING AND CLEANUP (FC)".				
*05	CPS 3317.01 8.1.4.12.3 – 8.1.4.12.6 Manually isolates Containment Pools.	Examinee isolate flow to upper containment pools by performing the following: <ul style="list-style-type: none"> • Shut 1FC007 <u>or</u> 1FC008 to the 'CLOSE' position. Verifies GREEN light ON, RED light OFF. • Shut 1FC037 <u>or</u> 1FC036 to the 'CLOSE' position. Verifies GREEN light ON, RED light OFF. • 1FC008 <u>or</u> 1FC007 to the 'CLOSE' position. Verifies GREEN light ON, RED light OFF. • Shut 1FC036 <u>or</u> 1FC037 to the 'CLOSE' position. Verifies GREEN light ON, RED light OFF. 	<input type="checkbox"/>	<input type="checkbox"/>	—
06	CPS 3317.01 8.1.3.4 Removes Filter Demineralizer from service.	Examinee contacts a Field Operator or request the CRS / WCS direct a Field Operator to remove the on service FC filter demineralizer from service IAW CPS 3317.02.	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Acknowledge request and report, "The on service FC filter Demineralizer has been removed from service IAW CPS 3317.02.				
*07	CPS 3317.01 8.1.3.5 – 8.1.3.6 Isolates Filter Demineralizer.	Examinee shuts the following valves by placing the control switches to the 'CLOSE' position and verifies GREEN light ON, RED light OFF. <ul style="list-style-type: none"> • 1FC017, FC Demin Inlet Header Valve. • 1FC023, FC Demin Outlet Header Valve. • 1FC016B, FC Pump 1B Discharge Crosstie Valve. • 1FC024B, FC Heat Exchanger 1B Inlet Crosstie Valve. 	<input type="checkbox"/>	<input type="checkbox"/>	—
		Examinee shuts the following valve by placing the control switch to the 'CLOSE' position and verifies GREEN light ON, RED light OFF. <ul style="list-style-type: none"> • 1FC004B, Filter Demineralizer Bypass to Heat Exchanger Valve. 	<input type="checkbox"/>	<input type="checkbox"/>	—
*08	CPS 3317.01 8.1.3.7 – 8.1.3.8 Secures operating FC pump.	Examinee places control switch for 1FC02PB, FC pump 1B to the 'STOP' position. Verifies RED light OFF, GREEN light ON. Examinee places control switch for 1FC011B, FC Pmp 1B Suct Valve to the 'CLOSE' position. Verifies GREEN light ON, RED light OFF.	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
09	CPS 3317.01 8.1.3.9 Ensures FC Surge Tank level is maintained within specifications.	Examinee contacts a Field Operator or request the CRS / WCS direct a Field Operator to lower FC Surge Tank level per CPS 3317.01 section 8.1.4.16 as necessary to maintain level < 27 feet.	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	If asked, respond as CRS or WCS as applicable, "A Field Operator is stationed to maintain FC Surge Tank level per step 8.1.3.9 of CPS 3317.01 FUEL POOL COOLING AND CLEANUP (FC)".				
*10	CPS 3317.01 8.1.3.10 ARP 5040-1B Shuts FC Heat Exchanger Outlet Valves.	Examinee places control switch for 1CC076B to the 'CLOSE' position. Verifies GREEN light ON, RED light OFF.	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	JPM is complete.				

JPM Stop Time: _____

.....

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

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

 JPM Title: Shift CCW Pumps (Alternate Path)

 JPM Number: JPM466 Revision Number: 01

 Task Number and Title: 320301.31 Operate CCW With One or Two Pumps and One Hx In Service.

 Task Standard: The examinee will respond to a loss of Component Cooling Water (CCW) pumps (1 continues to run) by securing the running Fuel Pool Cooling (FC) pump and shutting the FC Heat Exchanger (HX) valves IAW CPS 3317.01 FUEL POOL COOLING AND CLEANUP (FC).

K/A Number and Importance:

K/A System	K/A Number	Importance (RO/SRO)	
400000	A2.01	3.3	3.4

 Suggested Testing Environment: Simulator

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

Reference(s):

 Procedure: CPS 3203.01 Revision: 37
 Procedure: CPS 5040.01 Revision: 28d
 Procedure: CPS 3317.01 Revision: 33e
 Procedure: CPS 3317.02 Revision: 18d
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

NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

You are the 'B' RO.

The plant is operating at power.

The CRS has just informed the Control Room team that they will be making preparations to hang a clearance for MMD to perform maintenance on CCW Pump 1C.

INITIATING CUE

Shift CCW pumps from B/C CCW Pumps operating to A/B CCW Pumps operating IAW CPS 3203.01 COMPONENT COOLING WATER (CC) Section 8.1.2 Pump Shift.

A Field Operator is stationed to support the task.

Report to the CRS after completing the task.

Job Performance Measure

Startup the Control Room Ventilation System (VC) in the High Radiation Mode (Alternate Path)

JPM Number: JPM565

Revision Number: 00

Date: 8/24/2020

Developed By: Bill Kiser / _____
Instructor: Print / Sign 8/24/20
Date

Reviewed By: _____ / _____
SME or Instructor: Print / Sign _____
Date

Reviewed By: _____ / _____
Operations Representative: Print / Sign _____
Date

Approved By: _____ / _____
Training Department: Print / Sign _____
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 instructor or SME review. _____
7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). _____
8. IAW NUREG 1021 Appendix C, clearly identify the task standard (i.e., the predetermined qualitative or quantitative outcome) against which task performance will be measured. _____
9. Verify the procedure(s) referenced by this JPM reflects the current revision:

Procedure: <u>CPS 3402.01</u>	Revision: <u>33</u>
Procedure: <u>CPS 3402.01H002</u>	Revision: <u>0a</u>
Procedure: <u>CPS 5050.07</u>	Revision: <u>33c</u>
Procedure: <u>CPS 5052.07</u>	Revision: <u>34a</u>
Procedure: <u>CPS 5050.02</u>	Revision: <u>34</u>
Procedure: <u>CPS 5050.08</u>	Revision: <u>31d</u>
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. For subsequent validations, sign and date below: _____

_____/_____
SME / Instructor (Print/Sign) Date

_____/_____
SME / Instructor (Print/Sign) Date

_____/_____
SME / Instructor (Print/Sign) Date

Revision Record (Summary)

Revision #	Summary
00	8/24/20 – New JPM.

SETUP INSTRUCTIONS

1. IC Setup (NA if administering JPM565 per step 2)
 - a. Initialize to any suitable IC with Control Room Ventilation (VC) train 'A' running in normal mode.
 - b. Freeze the simulator.
 - c. Save to a different IC if JPM is being used more than once. IC-216 is saved for the ILT 19-1 NRC exam (PW 13852).
 - d. This completes the setup for this JPM.

NOTE: It is acceptable to use a similar IC to the IC listed above, provided the specific IC used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently. {Delete this NOTE if **not** applicable.}

2. JPM Administration
 - a. Reset to the IC saved after performing step 1 above. IC-216 is saved for the ILT 19-1 NRC exam (PW 13852).
 - b. Open and execute Simulator Lesson Plan ILT 19-1 NRC Exam JPMs LP.
 - c. Release JPM565 which will insert the following malfunctions and overrides:
 - A12_A03_S72_1 Press (VC M/U Train A Hi Rad Reset PB)
 - VC0VCVC115YAFP 100% (VC115YA Fail To Position)
 - A12_A05_S19 Bypass (VC Supply Air/Filter Dampers 0VC9YA-11YA)
 - A12_A03_M01_1 0.58 (OS Air Inlet Rad Monitor Div 1 Rad Level – 100 mR/hr)
 - A12_A03_M02_1 0.35 (OS Air Inlet Rad Monitor Div 1 Rad Level – 8 mR/hr)
 - A12_A04_M01_1 0.6 (OS Air Inlet Rad Monitor Div 2 Rad Level – 100 mR/hr)
 - A12_A04_M02_1 0.5 (OS Air Inlet Rad Monitor Div 2 Rad Level – 40 mR/hr)
 - CAM1PR009ATV_VALUE1 14 (1RIX-PR009A Ch 1 Override – 100 mR/hr)
 - CAM1PR009CTV_VALUE1 4 (1RIX-PR009C Ch 1 Override – 8 mR/hr)
 - CAM1PR009BTV_VALUE1 12 (1RIX-PR009B Ch 1 Override – 100 mR/hr)
 - CAM1PR009DTV_VALUE1 5 (1RIX-PR009D Ch 1 Override – 40 mR/hr)
 - A12_A01_07_11_TVM Steady (5050-7L Malfunction Hi Smoke / Rad / Chlorine Supply Filter Dampers Div 1) following 30 sec time delay.

- d. 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.
- e. Save to a different IC if required.
- f. Freeze the simulator.

INITIAL CONDITIONS

You are the 'B' RO.

A Loss of Coolant Accident (LOCA) has occurred resulting in a reactor scram.

INITIATING CUE

THIS IS A TIME CRITICAL JPM.

You have just received the following annunciators:

- 5050-7L MALFUNCTION HI SMOKE/RAD/CL SUP FILT DMPRS DIV 1
- 5050-7M HI RADIATION CONT RM HVAC SYS DIVISION 1
- 5052-7L MALFUNCTION HI SMOKE/RAD/CL SUP FILT DMPRS DIV 2
- 5052-7M HI RADIATION CONT RM HVAC SYS DIVISION 2

Respond to annunciators as appropriate.

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.

THIS IS A TIME CRITICAL JPM. Per OP-CL-102-106-1001 Operator Response Time Master List At CPS, on a failure of the operating VC train to start High Rad Mode (TCA 7), the operator must shift to the opposite VC train and initiate High Rad mode. This must occur within 20 minutes of an unisolable Large Line Break LOCA (which is a DBA LOCA) concurrent with a LOOP.

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____ JPM Sequence #: _____ of _____

Task Standard:

The examinee will attempt to place the operating Control Room HVAC (VC) train in Hi Rad Mode, but will NOT be successful. Using the Emergency Shift Of Operating Trains – Hard Card, the examinee will successfully secure the operating VC train and start the standby train (in Hi Rad Mode).

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
CUE	Provide the examinee with the Cue Sheet . When it is located in the MCR, provide the examinee with CPS 3402.01 Control Room HVAC (VC).				
01	Reviews applicable Annunciator Response Procedures (ARPs).	Examinee reviews ARPs for annunciators: <ul style="list-style-type: none"> • 5050/52-7L • 5050/52-7M Examinee proceeds to CPS 3402.01 Control Room HVAC (VC).	<input type="checkbox"/>	<input type="checkbox"/>	—
02	3402.01 8.3.3.1 – 8.3.3.2 Attempts to place the operating Control Room HVAC (VC) train in Hi Rad Mode.	Examinee determines that operation of VC in the High Radiation mode may still be achieved manually. <ul style="list-style-type: none"> • On 1H13-P801-5050/5052, the examinee Depresses <u>both</u> Cont Rm Mu Trn Hi Rad initiation push-buttons. 	<input type="checkbox"/>	<input type="checkbox"/>	—
NOTE:	The examinee may skip this step and choose to proceed directly to CPS 3402.01 8.3.9 (Hard Card at P801). This is a conservative action and should be documented as a competency hit. The examinee may skip this step if following 5050/5052-7L ARP Operator Actions and proceed directly to step 03.				
CUE	If the examinee reports applicable LCO to the CRS, acknowledge the report.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
03	3402.01 8.3.3.3 5050/5052-7L ARP Attempts to manually place the Supply Air Train 'A' in service.	<p>Examinee determines that the Supply Air Trn A did not unisolate.</p> <ul style="list-style-type: none"> On 1H13-P801-5050, the examinee rotates the Sply Air Fltr Dmprs 0VC09YA/ 10YA/11YA control switch to the FILTER position. <p>Examinee determines that operation of VC in the High Radiation mode cannot be achieved on the operating train.</p>	<input type="checkbox"/>	<input type="checkbox"/>	—
ALTERNATE PATH BEGINS					
CUE	If the examinee reports shifting Control Room Ventilation (VC) trains, acknowledge the report.				
*04	3402.01 8.3.9.1.1 - 2 (Hard Card at P801) Secures the operating VC train.	<p>On 1H13-P801-5050, the examinee rotates the control switch for 0VC03CA, Cont Rm Train A Supply Fan to the STOP position.</p> <ul style="list-style-type: none"> Verifies 0VC03CA, Cont Rm Train A Supply Fan stops (green light ON, red light OFF) Verifies 0VC04CA, Cont Rm Rtrn Fan stops (green light ON, red light OFF) 	<input type="checkbox"/>	<input type="checkbox"/>	—

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*05	3402.01 8.3.9.1.3 - 4 (Hard Card at P801) Starts the standby train (in Hi Rad Mode)	<p>On 1H13-P801-5052, the examinee rotates the control switch for 0VC03CB, Cont Rm Trn B Supply Fan to the START position.</p> <ul style="list-style-type: none"> Verifies 0VC03CB, Cont Rm Trn B Supply Fan starts (red light ON, green light OFF) Verifies 0VC04CB, Cont Rm Rtrn Fan starts (red light ON, green light OFF) 	<input type="checkbox"/>	<input type="checkbox"/>	—
*06	3402.01 8.3.9.1.5 – 8.3.9.1.7 (Hard Card at P801) Opens/verifies open the correct Min Air Flow damper.	Determines that 1RIX-PR009A and 1RIX-PR009B radiation levels indicate higher than 1RIX-PR009C and 1RIX-PR009D.	<input type="checkbox"/>	<input type="checkbox"/>	—
		On 1H13-P801-5050, the examinee verifies 0VC01YA, Cont Rm Min O.A. Intake Damper A OPEN (red light ON, green light OFF)	<input type="checkbox"/>	<input type="checkbox"/>	—
		<p>On 1H13-P801-5052, the examinee rotates the control switch for 0VC01YB, Cont Rm Min O.A. Intake Damper B to the SHUT position.</p> <p>Verifies 0VC01YB, Cont Rm Min O.A. Intake Damper B SHUT (red light OFF, green light ON)</p>	<input type="checkbox"/>	<input type="checkbox"/>	—
CUE	The JPM is complete.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
NOTE: <i>Evaluator:</i> <ul style="list-style-type: none"> • Record JPM stop time: _____ • Record JPM start time: _____ • Stop/Start difference: _____ Verify difference in times recorded does not exceed 20 minutes.					

JPM Stop Time: _____



NOTE: Enter finalized grading, comments, and notes relevant to this evaluation in the associated TQ-AA-150-F03A/B. (See AR [4282419](#)).

Evaluator's Name (Print): _____

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

INITIAL CONDITIONS

You are the B RO.

A Loss of Coolant Accident (LOCA) has occurred resulting in a reactor scram.

INITIATING CUE

THIS IS A TIME CRITICAL JPM.

You have just received the following annunciators:

- 5050-7L MALFUNCTION HI SMOKE/RAD/CL SUP FILT DMPRS DIV 1
- 5050-7M HI RADIATION CONT RM HVAC SYS DIVISION 1
- 5052-7L MALFUNCTION HI SMOKE/RAD/CL SUP FILT DMPRS DIV 2
- 5052-7M HI RADIATION CONT RM HVAC SYS DIVISION 2

Respond to annunciators as appropriate.

EMERGENCY SHIFT OF OPERATING TRAINS-HARD CARD

IF: one train is operating and cannot be promptly placed in the High Rad Mode when required

THEN: perform the following:

- 1. Stop the operating train 0VC03CA(B), Cont Rm Trn A(B) Supply Fan.
- 2. Verify 0VC04CA(B), Cont Rm Rtrn Fan stops.
- 3. Start 0VC03CB(A), Cont Rm Trn B(A) Supply Fan.
- 4. Verify 0VC04CB(A), Cont Rm Rtrn Fan starts.

Use the following table to quickly locate monitors and indicators to aid in completion of the next step.

Monitor	Monitor Location	MCR Indicator	Min Air Damper
1RIX-PR009A	West	P801-66B (Div 1)	0VC01YB
1RIX-PR009C	East	P801-66B (Div 1)	0VC01YA
1RIX-PR009B	West	P801-67B (Div 2)	0VC01YB
1RIX-PR009D	East	P801-67B (Div 2)	0VC01YA

① 5. **IF:** 1RIX-PR009A and/or 1RIX-PR009B radiation levels indicate higher than 1RIX-PR009C and/or 1RIX-PR009D.

THEN:

- 1. Open/verify open 0VC01YA, Cont. Rm. Min O.A. Intake Damper A
- 2. Shut/verify shut 0VC01YB, Cont. Rm. Min O.A. Intake Damper B

6. **IF:** 1RIX-PR009C and/or 1RIX-PR009D radiation levels indicate higher than 1RIX-PR009A and/or 1RIX-PR009B,

THEN:

- 1. Open/verify open 0VC01YB, Cont. Rm. Min O.A. Intake Damper B
- 2. Shut/verify shut 0VC01YA, Cont. Rm. Min O.A. Intake Damper A

As time and resources allow, perform all verifications of proper train response per section 8.3.3.

When conditions allow and personnel are available, perform applicable sections of 3402.01P001, CONTROL ROOM HVAC (VC) TRAIN SHIFTING (including starting the chiller associated with the running train).