

## As Given Operating Test

Attached are the two job performance measures (JPM's) which were changed after final exam approval. The first, JPM S2, was changed to a different main steam isolation valve train based on a simulator fidelity issue documented in exam report 05000458/2014301. The JPM is otherwise unchanged. This issue did not impact any other portion of the administered exam. The second, JPM P1, was also changed to different chilled water trains due to actual maintenance work that was being performed on the original components during exam administration. This maintenance only affected this one in-plant JPM, and the JPM was otherwise unchanged.

**NUCLEAR PLANT OPERATOR JOB PERFORMANCE MEASURE**

SRO  RO

ALTERNATE PATH

**TITLE:** Perform STP-109-6302 (MSIV Quarterly Partial Stroke Operability Test)

**OPERATOR:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_ **EVALUATOR SIGNATURE:** \_\_\_\_\_

<b>CRITICAL TIME FRAME:</b>	Required Time (min):	<b>NA</b>	Actual Time (min):	<b>NA</b>
<b>PERFORMANCE TIME:</b>	Average Time (min):	15	Actual Time (min):	

**JPM RESULTS\*:** (Circle one) \* SAT UNSAT  
Refer to Grading Instructions at end of JPM

**EVALUATION METHOD:**

<b>X</b>	Perform
	Simulate

**EVALUATION LOCATION:**

	Plant
<b>X</b>	Simulator
	Control Room

**Prepared:** Dave Bergstrom **Date:** March 4, 2014

**Reviewed:** Jeff Reynolds **Date:** March 4, 2014  
(Operations Representative)

**Approved:** Joey Clark **Date:** March 4, 2014  
(Facility Reviewer)

## **EXAMINER INFO SHEET**

**Task Standard:** MSIV Partial Stroke Operability Test has been completed for B21-AOVF028B. (STP-109—6302, Section 7.3)

**Synopsis:** The reactor is operating with the reactor at 100%. This task will test MSIVs partial stroke.

**NOTE:** If in the Plant or the Control Room, **Caution** the operator NOT to MANIPULATE the controls, but to make clear what they would do if this were not a simulated situation.

1) **Read to the operator:**

“I will provide the initial conditions and initiating cues to you. I may also provide cues during the performance and ask follow-up questions at the conclusion of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied. Inform me when you have completed the task.

2) **Initiating Cues:**

The CRS has directed you to perform STP-109-6302 (MSIV Quarterly Partial Stroke Operability Test) for B21-AOVF028B.

3) **Initial Conditions:**

- The reactor is operating at 100%.
- All MSIV's are open.
- The status lights on the back panels have been verified ENERGIZED, STP-109-6302 is complete through step 6.6.16.
- Step 6.7 is ready to be performed.

4) Solicit and answer any questions the operator may have.

**DATA SHEET**

<b>TASK Title:</b>	<b>Task Number</b>	<b>K&amp;A SYSTEM:</b>	<b>K&amp;A RATING:</b>
MSIV Partial Stroke Operability Test	239017001001	239001 A4.01	4.2 / 4.0

**Reason for Revision**

Revision 3 is due to changing which MSIV is tested to support a simulator DR.

**REFERENCES:**

STP-109-6302, Rev 15

**APPLICABLE OBJECTIVES**

RLP-STM-0109, Obj 7, 8

**REQUIRED MATERIALS:**

Marked up copy of STP-109-6302,  
MSIV Quarterly Partial Stroke Operability Test

**SAFETY FUNCTION:**

3

**SIMULATOR CONDITIONS & SETUP:**

1. IC # 217
2. Rx Power: 100% operating.

**CRITICAL ELEMENTS:**

Items marked with an "\*" are Critical Steps and are required to be performed. Failure to successfully complete a Critical Step requires the JPM to be evaluated as Unsatisfactory.

**TASK STANDARD:**

MSIV Partial Stroke Operability Test has been completed for B21-AOVF028B. (STP-109—6302, Section 7.3)

**PERFORMANCE:**

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

STP-109-6302  
MSIV Quarterly Partial Stroke Operability Test

Prerequisites

1.	<b>Procedure Step:</b>	6.7 Record pressure as indicated from IAS-PI105, INSTRUMENT AIR HEADER PRESS on Panel H13-P870:	
	Standard	Applicant records instrument air pressure from correct pressure instrument.	
	Cue		
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

**PROCEDURE NOTE**

*When performing STP-051-0201 in conjunction with this procedure...  
This note is NA*

- 7 PROCEDURE
  - 7.1 B21-AOVF028B, MSL B OUTBD MSIV (Partial Stroke Close), Operability Test

**PROCEDURE CAUTION**

<p><b><u>CAUTION</u></b></p> <ul style="list-style-type: none"> <li>• <b>Do not place the MSL B OUTBD MSIV handswitch (B21-AOVF028B) in CLOSE as this will cause the MSIV to fully close.</b></li> <li>• <b>Exercise care when the MSL B OUTBD MSIV TEST pushbutton is depressed to avoid fully closing the MSIV. Isolation of a main steam line with the Mode Switch in RUN inputs a reactor trip signal to one of the divisional logics of the Reactor Protection System.</b></li> <li>• <b>Steam flow greater than or equal to 137.6% (4.520 Mlbm/hr) in any steam line will cause a MSIV isolation.</b></li> </ul>
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2.	<b>Procedure Step:</b>	7.3.1 Verify Main Steam Lines A, C, and D are <u>not</u> isolated.	
	Standard	Applicant verified red lights ON and green lights OFF for inboard and outboard A, C, and D MSIVs.	
	Cue		
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

3.	<b>*Procedure Step:</b>	7.3.2 Place B21H-S1E, MSL B OUTBD MSIV handswitch in OPEN/SLOW TEST.	
	Standard	Applicant positioned the B outboard MSIV switch from AUTO to Open/Slow Test (turning the switch clockwise).	
	Cue		
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

**PROCEDURE NOTE**

*The next two steps meet the partial stroke exercise requirement.*

4.	<b>*Procedure Step:</b>	7.3.3 Depress B21H-S3E, MSL B OUTBD MSIV TEST pushbutton to begin slow closing B21-AOVF028B. <u>WHEN</u> the remote position indication depicts a <u>not</u> fully open valve (dual indication), <u>THEN</u> immediately release B21H-S3E.	
	Standard	Applicant depressed the S3E pushbutton. Applicant released the S3E pushbutton, when dual indication (red and green lights ON), and prior to high flow in any other steam line.	
	Cue		
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

5.	<b>Procedure Step:</b>	7.3.4 Verify that the remote position indication depicts a fully open valve (red light only).
	Standard	Applicant verifies that the green light is OFF and the red light is ON.
	Cue	
	Notes	
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

6.	<b>Procedure Step:</b>	7.3.5 <u>IF</u> B21-AOVF028B was successfully partial stroke closed and fully opened as indicated in steps 7.3.3 and 7.3.4, <u>THEN</u> record as Acceptable for B21-AOVF028B on Data Sheet 1, <u>OTHERWISE</u> record as Unacceptable.
	Standard	Applicant circled "A" on Data Sheet 1 for B21-AOVF028B
	Cue	
	Notes	
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

7.	<b>Procedure Step:</b>	7.3.6 Place B21A-S1E, MSL B OUTBD MSIV handswitch in AUTO.
	Standard	Applicant positioned the B outboard MSIV switch from Open/Slow Test to AUTO (turning the switch counter-clockwise).
	Cue	
	Notes	Step 7 is not critical due to the logic still enabling all trips to close the MSIVs The next two steps are for independent verification of valve/switch position
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

Terminating Cue: MSIV Partial Stroke Operability Test has been completed for B21-AOVF028B. (STP-109—6302, Section 7.3).

**This completes this JPM.**

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





**OPERATOR CUE SHEET**

**INITIAL CONDITIONS:**

- The reactor is operating at 100%.
- All MSIV's are open.
- The status lights on the back panels have been verified ENERGIZED, STP-109-6302 is complete through step 6.6.16.
- Step 6.7 is ready to be performed.

**INITIATING CUE:**

The CRS has directed you to perform STP-109-6302 (MSIV Quarterly Partial Stroke Operability Test) for B21-AOVF028B.

**NUCLEAR PLANT OPERATOR JOB PERFORMANCE MEASURE**

SRO  RO

ALTERNATE PATH

**TITLE:** Alternate Control Building Chilled Water Pumps within the Standby Division

**OPERATOR:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_ **EVALUATOR SIGNATURE:** \_\_\_\_\_

<b>CRITICAL TIME FRAME:</b>	Required Time (min):	<b>NA</b>	Actual Time (min):	<b>NA</b>
<b>PERFORMANCE TIME:</b>	Average Time (min):	12	Actual Time (min):	

**JPM RESULTS\*:** (Circle one) \* SAT UNSAT  
 Refer to Grading Instructions at end of JPM

**EVALUATION METHOD:**

	Perform
<b>X</b>	Simulate

**EVALUATION LOCATION:**

<b>X</b>	Plant
	Simulator
	Control Room

**Prepared:** Dave Bergstrom **Date:** September 11, 2013

**Reviewed:** Jeff Reynolds **Date:** January 22, 2014  
 (Operations Representative)

**Approved:** Joey Clark **Date:** January 27, 2014  
 (Facility Reviewer)

## **EXAMINER INFO SHEET**

**Task Standard:** Chilled Water is lined up to HVK Chiller C using SOP-0066, Section 5.3

**Synopsis:** This task will swap the standby chiller from A to C using SOP-0066, Control Building HVAC Chilled Water System This JPM is written for the field portion of the task which alternates the chilled water system only.

**NOTE:** If in the Plant or the Control Room, **Caution** the operator **NOT** to MANIPULATE the controls, but to make clear what they would do if this were not a simulated situation.

1) **Read to the operator:**

“I will provide the initial conditions and initiating cues to you. I may also provide cues during the performance and ask follow-up questions at the conclusion of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied. Inform me when you have completed the task.”

2) **Initiating Cues:**

The CRS has directed you to perform the local lineup for placing Control Building HVK Chiller C, in standby with HVK-P1C Chilled Water Pump. SOP-0066 has been completed through Step 5.3.3.

3) **Initial Conditions:**

HVK-CHL1B, Control Building Chiller B, is currently in service.  
HVK-CHL1A Control Building Chiller A and 1HVK-P1A, Chilled Water Pump A, are lined up for standby operation.

The Unit Operator has placed 1HVK-CHL1A, CONTROL BLDG CHILLER A, in LOCKOUT and 1HVK-P1A, CHILLED WATER PUMP A, in STOP.

4) Solicit and answer any questions the operator may have.

**DATA SHEET**

<b><u>TASK Title:</u></b>	<b><u>Task Number</u></b>	<b><u>K&amp;A SYSTEM:</u></b>	<b><u>K&amp;A RATING:</u></b>
Alternate Control Building Chilled Water Pumps within the Standby Division	291011001001	290003 A4.01	3.2 / 3.2

**REFERENCES:**  
SOP-0066, Rev 313

**APPLICABLE OBJECTIVES**  
RLP-STM-0402, Obj 4

**REQUIRED MATERIALS:**  
SOP-0066, Rev 313, Section 5.3

**SAFETY FUNCTION:**  
9

**SIMULATOR CONDITIONS & SETUP:**

1. NA – This is an In Plant JPM.

**CRITICAL ELEMENTS:** Items marked with an “\*” are Critical Steps and are required to be performed. Failure to successfully complete a Critical Step requires the JPM to be evaluated as Unsatisfactory.

**TASK STANDARD:** Chilled Water is lined up to HVK Chiller C using SOP-0066, Section 5.3.

**PERFORMANCE:**

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

1.	<b>*Procedure Step:</b>	5.3.4 Locally at the chiller which is currently in standby, unlock and close the chiller inlet valve. <ul style="list-style-type: none"> <li>HVK-V35, HVK CHL1A INLET ISOL</li> </ul>	
	Standard	Applicant located/identified the Chill Water Inlet Valve for A HVK Chiller Applicant unlocked and closed HVK-V35 by turning the handwheel fully clockwise using the chain.	
	Cue	Inform the applicant that the handwheel is fully clockwise.	
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

2.	<b>*Procedure Step:</b>	5.3.5 Locally at the currently out of service chiller, open and lock the chiller inlet valve. <ul style="list-style-type: none"> <li>HVK-V39, HVK CHL1C INLET ISOL</li> </ul>	
	Standard	Applicant located/identified the Chill Water Inlet Valve for C HVK Chiller Applicant opened and locked HVK-V39 by turning the handwheel fully counter clockwise using the chain.	
	Cue	Inform the applicant that the handwheel is fully counter-clockwise.	
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

**PROCEDURE NOTE**

*Oil level can be lower than normal if service water temperature is low, greater than or equal to 65°F and less than or equal to 75°F.*

*For a non-operating chiller an oil level in or above the upper sight glass is normal. When idle, the level may be higher due to the absorption of refrigerant by the oil.*

3.	<b>Procedure Step:</b>	5.3.6 Locally at the chiller being placed in standby, check the following: 1. Lube oil level greater than ¾ of lower sight glass.	
	Standard	Applicant verified lube oil level within specification.	
	Cue	Indicate an oil level in the lower half of the upper sight glass	
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

4.	<b>Procedure Step:</b>	5.3.6 Locally at the chiller being placed in standby, check the following: 2. Lube oil temperature is greater than or equal to 120°F and less than or equal to 155°F.	
	Standard	Applicant verified lube oil temperature within specification.	
	Cue	Indicate an oil temperature of 140°F.	
	Notes		
	Results	SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>

5.	<b>Procedure Step:</b>	5.3.6 Locally at the chiller being placed in standby, check the following: 3. <u>IF</u> the READY Light is off, <u>THEN</u> depress the PUSH TO RESET PRETRIP ANNUNCIATOR Pushbutton.	
	Standard	NA	
	Cue	Indicate that the READY light is lit.	
	Notes	No applicant action is necessary for this step.	

6.	<b>Procedure Step:</b>	5.3.6 Locally at the chiller being placed in standby, check the following: 4. READY Light is on.
	Standard	Applicant verified the READY light is lit.
	Cue	Indicate the READY light is ON.
	Notes	The lights are difficult to see – not very bright.
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

7.	<b>Procedure Step:</b>	5.3.6 Locally at the chiller being placed in standby, check the following: 5. SAFETY CIRCUIT Light is on.
	Standard	Applicant verified the SAFETY CIRCUIT Light is on.
	Cue	Indicate the safety circuit light is on.
	Notes	
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

8.	<b>Procedure Step:</b>	5.3.6 Locally at the chiller being placed in standby, check the following: 6. LOAD RECYCLE Light is on.
	Standard	Applicant verified the LOAD RECYCLE Light is on.
	Cue	Indicate the load recycle light is on.
	Notes	
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

9.	<b>Procedure Step:</b>	5.3.6 Locally at the chiller being placed in standby, check the following: 7. Refrigerant visible in evaporator sight glass.
	Standard	Applicant verified refrigerant level within specification.
	Cue	Indicate a refrigerant level in the evaporator sight glass.
	Notes	The sightglass is on the north end of the machine; it is yellow
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

10.	<b>Procedure Step:</b>	5.3.7 Perform the following for the chiller being placed in standby: 1. Verify SWP-P3C, CHILLER C RECIRC SWP in AUTO.
	Standard	Applicant informed the Control Room that Steps 5.3.4 through 5.3.6 have been completed.
	Cue	Accept the report as a Control Room Operator.
	Notes	The rest of the steps in this section would be performed in the MCR.
	Results	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

Terminating Cue: Chilled Water is lined up to HVK Chiller C using SOP-0066, Section 5.3

**This completes this JPM.**

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





## **OPERATOR CUE SHEET**

### **INITIAL CONDITIONS:**

HVK-CHL1B, Control Building Chiller B, is currently in service.  
HVK-CHL1A Control Building Chiller A and 1HVK-P1A, Chilled Water Pump A, are lined up for standby operation.  
The Unit Operator has placed 1HVK-CHL1A, CONTROL BLDG CHILLER A, in LOCKOUT and 1HVK-P1A, CHILLED WATER PUMP A, in STOP.

### **INITIATING CUE:**

The CRS has directed you to perform the local lineup for placing Control Building HVK Chiller C, in standby with HVK-P1C Chilled Water Pump. SOP-0066 has been completed through Step 5.3.3.