


**WATTS BAR NUCLEAR PLANT  
UNIT 2 PREOPERATIONAL TEST**

TITLE: Reactor Vessel Head Vent System

2-PTI-068-09  
Instruction No: ~~2-PTI-68-09~~ 3/21/13  
Revision No: 0000

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**INSTRUCTION APPROVAL**

JTG MEETING No: 2-13-005

JTG CHAIRMAN: Mark A. Welch

DATE: 3/21/13

APPROVED BY: Mark A. Welch  
PREOPERATIONAL STARTUP MANAGER

DATE: 3/21/13

**TEST RESULTS APPROVAL**

JTG MEETING No: \_\_\_\_\_

JTG CHAIRMAN: \_\_\_\_\_

DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_  
PREOPERATIONAL STARTUP MANAGER

DATE: \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 2 of 64</b>
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**Revision Log**

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<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 3 of 64</b>
-----------------------	--	--

## Table of Contents

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>5</b>
1.1	Test Objectives .....	5
1.2	Scope.....	5
<b>2.0</b>	<b>REFERENCES .....</b>	<b>6</b>
2.1	Performance References .....	6
2.2	Developmental References.....	6
<b>3.0</b>	<b>PRECAUTIONS AND LIMITATIONS .....</b>	<b>10</b>
<b>4.0</b>	<b>PREREQUISITE ACTIONS .....</b>	<b>12</b>
4.1	Preliminary Actions .....	12
4.2	Special Tools, Measuring and Test Equipment, Parts, and Supplies.....	15
4.3	Field Preparations.....	15
4.4	Approvals and Notifications .....	16
<b>5.0</b>	<b>ACCEPTANCE CRITERIA.....</b>	<b>17</b>
<b>6.0</b>	<b>PERFORMANCE.....</b>	<b>19</b>
6.1	Operability of Train A REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-394, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-397.....	19
6.2	Operability of Train B REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-395, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-396.....	24
6.3	Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure.....	28
<b>7.0</b>	<b>POST PERFORMANCE ACTIVITY.....</b>	<b>56</b>
<b>8.0</b>	<b>RECORDS.....</b>	<b>57</b>
<b>Appendix A:</b>	<b>TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW .....</b>	<b>58</b>
<b>Appendix B:</b>	<b>TEMPORARY CONDITION LOG .....</b>	<b>59</b>

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 4 of 64</b>
-----------------------	--	--

**Table of Contents (continued)**

<b>Appendix C:</b>	<b>PERMANENT PLANT INSTRUMENTATION LOG.....</b>	<b>60</b>
<b>Appendix D:</b>	<b>SWITCH LINEUP .....</b>	<b>61</b>
<b>Appendix E:</b>	<b>ELECTRICAL LINEUP .....</b>	<b>62</b>
<b>Appendix F:</b>	<b>VALVE LINEUP.....</b>	<b>63</b>

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 5 of 64</b>
-----------------------	--	--

## **1.0 INTRODUCTION**

The RVHVS provides a means for venting non condensible gasses or steam from the Reactor Head Vent. The Reactor Head Vent Line is a qualified letdown path which can establish reactor coolant letdown flow to the pressurizer relief tank.

### **1.1 Test Objectives**

Demonstrate the operability of the Reactor Vessel Head Vent System (RVHVS).

### **1.2 Scope**

- A. Verify proper operation of the remotely controlled solenoid operated valve 2-FSV-68-394, REACTOR VESSEL HEAD VENT ISOL VALVE, initially during ambient no pressure conditions followed by a test at normal operating temperature and pressure.
- B. Verify proper operation of the remotely controlled solenoid operated valve 2-FSV-68-395, REACTOR VESSEL HEAD VENT ISOL VALVE, initially during ambient no pressure conditions followed by a test at normal operating temperature and pressure.
- C. Verify proper operation of the remotely controlled solenoid operated valve 2-FSV-68-396, REACTOR VESSEL HEAD VENT THROTTLE VALVE, initially during ambient no pressure conditions followed by a test at normal operating temperature and pressure.
- D. Verify proper operation of the remotely controlled solenoid operated valve 2-FSV-68-397, REACTOR VESSEL HEAD VENT THROTTLE VALVE, initially during ambient no pressure conditions followed by a test at normal operating temperature and pressure.
- E. Verify system flow from the Reactor Vessel Head to the Pressurizer Relief Tank (PRT) through each flow path.
- F. Verify alarms and computer points function properly.

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 6 of 64</b>
-----------------------	--	--

## **2.0 REFERENCES**

### **2.1 Performance References**

- A. SMP-9.0, Conduct of Test
- B. 2-PTI-068-01, HFT-Heatup and Cooldown
- C. 2-PTI-999-01, Operational Vibration Testing

### **2.2 Developmental References**

- A. Unit 2 Final Safety Analysis Report- Amendment 109
  - 1. Section 3.9.2.1, Preoperational Vibration and Dynamic Effects Testing on Piping
  - 2. Section 5.0, Reactor Coolant System
  - 3. Section 5.5.6, Reactor Vessel Head Vent System
  - 4. Table 14.2-1 Sheets 77, 78 and 79 of 89, Integrated Hot Functional Tests Test Summary
  - 5. Table 14.2-1 Sheet 80 of 89, Operational Vibration Tests Test Summary
- B. Drawings
  - 1. Flow Diagrams
    - a. 2-47W813-1, Rev 11, Flow Diagram Reactor Coolant System
    - b. 2-47W830-1, Rev 9, Flow Diagram Waste Disposal System
  - 2. Electrical
    - a. 2-45W600-68-1, Rev 5, Wiring Diagram Reactor Coolant System Schematic Diagrams
    - b. 2-45W600-68-2, Rev 2, Wiring Diagram Reactor Coolant System Schematic Diagrams

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 7 of 64</b>
-----------------------	--	--

## 2.2 Developmental References (continued)

- c. 45W2630-95, Rev 7, Wiring Diagrams Miscellaneous Valves Connection Diagrams, Sh 95
- d. 45N2632-19, Rev 1, Wiring Diagrams Miscellaneous Controls Connection Diagrams - Sh 19
- e. 45N2635-103, Rev G, Wiring Diagrams Local Instrument Panels Connection Diagrams - Sh 103
- f. 2-45N2643-1, Rev 0, Wiring Diagrams Unit Control Board Panel 2-M-4 Connection Diagrams - Sh 1
- g. 45N2643-4, Rev 14, Wiring Diagrams Unit Control Board Panel 2-M-4 Connection Diagrams - Sh 4
- h. 2-45N2643-9, Rev 0, Wiring Diagrams Unit Control Board Panel 2-M-4 Connection Diagrams - Sh 9
- i. 45N2665-2, Rev 12, Wiring Diagrams Process Instrument Control Group 1 Connection Diagrams Sheet 2
- j. 45W2671-3, Rev 0, Wiring Diagrams BAL OF PLANT INST RACK, TRAIN A Panel 2-R-129 Connection Diagrams - Sh 3 (DRA's 53756-249 and 266, 52427-259 and 260)
- k. 45W2672-3, Rev 0, Wiring Diagrams BAL OF PLANT INST RACK, TRAIN B Panel 2-R-132 Connection Diagrams - Sh 3 (DRA's 53756-250 and 267, 52427-261 and 262)
- l. 1-45W703-3, Rev 46, Wiring Diagrams 125V Vital Battery Board III Single Line - Sh 3
- m. 2-45W703-4, Rev 0, Wiring Diagrams 125V Vital Battery Board IV Single Line - Sh 4
- n. 1-45W703-7A, Rev 14, Wiring Diagrams 125V Vital Battery Board III Panel 4 Connection Diagram Sh 7A
- o. 1-45W703-8A, Rev 16, Wiring Diagrams 125V Vital Battery Board IV Panel 4 Connection Diagram Sh 8A
- p. 2-45W706-3, Rev 1, Wiring Diagram 120V AC Vital Inst Pwr BDS 1-III and 2-III Connection Diagram Sh 3

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 8 of 64</b>
-----------------------	--	--

## 2.2 Developmental References (continued)

- q. 2-45W706-4, Rev 1, Wiring Diagram 120V AC Vital Inst Pwr BDS 1-IV & 2-IV Connection Diagram Sh 4
  - r. 45B640-268, Rev A, Contact Development of Selector Switches and Pushbuttons
  - s. 2-47A615-0, Rev 1, Series, Computer Termination and I/O List
  - t. 2-45B655-5A, Rev 0, Main Control Room Annunciator Inputs Window Box XA-55-5A
  - u. 2-45B655-E5A, Rev 0, Electrical Annunciator Window Box XA-55-5A Engraving
3. Mechanical
- a. 47W465-8, Rev 15, Reactor Coolant Auxiliary and Miscellaneous Piping
4. Logic/Control
- a. 2-47W610-68-2, Rev 5, Electrical Control Diagram Reactor Coolant System
  - b. 2-47W610-68-6, Rev 2, Electrical Control Diagram Reactor Coolant System
  - c. 2-47W610-68-7, Rev 4, Electrical Control Diagram Reactor Coolant System
  - d. 2-47W610-98-6A, Rev 0, Electrical Control Diagram Foxboro I/A System
  - e. 2-47W610-98-6B, Rev 0, Electrical Control Diagram Foxboro I/A System
  - f. 2-47W611-68-1, Rev 2, Electrical Logic Diagram Reactor Coolant System

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 9 of 64</b>
-----------------------	--	--

## 2.2 Developmental References (continued)

### 5. Vendor Drawings

- a. 79AB-001-1, Rev B, Solenoid Operated Globe Valve High Temp, High Press Energize To Open 1" SW (Contract 467870)
- b. 79AB-003, Rev M, 1" Modulating Valve Assy & Controller (Contract 54114-1)
- c. 08F826663-FD-2116-1, Rev 0, Functional Diagram Reactor Vessel Head Vent Throttle Manual Loading Station-Train A
- d. 08F826663-FD-2215-1, Rev 0, Functional Diagram Reactor Vessel Head Vent Throttle Manual Loading Station-Train B

### B. Vendor Manuals

None

### C. Documents

1. WBN2-68-4001, Reactor Coolant System Description, Rev 2
2. 2-TSD-68-9, Reactor Vessel Head Vent System Test Scoping Document, Rev 2
3. 2 TSD-HFT-1, Hot Functional Test Scoping Document, Rev 1
4. 2 TSD-68-1, RCS Hot Functional Testing - Heatup Test Scoping Document, Rev 0

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 10 of 64</b>
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### **3.0 PRECAUTIONS AND LIMITATIONS**

- A. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Manual Procedure 1021.
- B. Steps may be repeated if all components cannot be tested in a step. However, if the test has been exited, prerequisite steps must be re-verified and a Chronological Test Log (CTL) entry made.
- C. Discrepancies between component ID tags and the description in a procedure/instruction do not require a Test Deficiency Notice (TDN) in accordance with SMP-14.0, if the UNIDs match, exclusive of place-keeping zeros and train designators (e.g. 2-HS-31-468 vs. 2-HS-031-0468) and the noun description is sufficient to identify the component. If the component label needs to be changed, a Tag Request Form (TR Card) should be processed in accordance with TI-12.14. Make an entry in the CTL and continue testing.
- D. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.
- E. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- F. Problems identified during the test shall be annotated on the Chronological Test Log (CTL) from SMP-9.0 including a description of the problem, the procedure step when/where the problem was identified, corrective action steps taken to resolve the problem, and the number of the corrective action document, if one was required.
- G. Observe all Radiation Protection (RP) requirements when working in or near radiological areas.
- H. Ensure there are no adverse effects to the operation of Unit 1 structures, systems or components.
- I. System water chemistry is within system specifiable parameters especially for fluids supplied from external sources.

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 11 of 64</b>
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### **3.0 PRECAUTIONS AND LIMITATIONS (continued)**

- J. During the performance of this procedure visual observation of piping and components is required. This includes steady state and transient operations with visual confirmation that vibration is not excessive.
- K. If the vibration is determined to be excessive the Test Engineer shall initiate a Test Deficiency Notice (TDN).
- L. Do NOT allow the Pressurizer Relief Tank to exceed a pressure of 80 percent (68 psig) of the rupture disc rating.
- M. Personnel NOT assigned to conduct this test should remain clear of system components (Pressurizer Relief Tank and control valves) while the test is in progress.
- N. The PRT must not be vented to the Waste Disposal System Vent Header if the pressure exceeds 10 psig. (WBN2-68-4001, Section 3.5.6, Item F and WBT-D-2988.
- O. Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.
- P. Section 6.3 is performed with the RCS at NOPT, 557°F and 2235 psig, with that, precautions shall be followed for hot surfaces, heat stress and ear protection.

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 12 of 64</b>
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Date \_\_\_\_\_

#### 4.0 PREREQUISITE ACTIONS

**NOTE**

Prerequisite steps may be performed in any order unless otherwise stated and should be completed as close in time as practicable to the start of the instruction subsection to which they apply.

#### 4.1 Preliminary Actions

- [1] **EVALUATE** open items in Watts Bar Integrated Task Equipment List (WITEL), and  
  
**ENSURE** they will NOT adversely affect the test performance and results.
  - A. (Subsection 6.1) \_\_\_\_\_
  - B. (Subsection 6.2) \_\_\_\_\_
  - C. (Subsection 6.3) \_\_\_\_\_
  
- [2] **ENSURE** changes to the references listed on Appendix A, have been reviewed, and determined NOT to adversely affect the test performance. \_\_\_\_\_
  
- [3] **VERIFY** current revisions and change paper for referenced drawings has been reviewed and determined NOT to adversely affect the test performance, and  
  
**ATTACH** documentation of current drawing revision numbers and change paper that were reviewed to the data package. \_\_\_\_\_
  
- [4] **VERIFY** the test/performance copy of this Preoperational Test Instruction (PTI) is the current revision including any change notices and as needed, each test person assisting in this test has the current revision including any change notices. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 13 of 64</b>
-----------------------	--	---

Date \_\_\_\_\_

**4.1 Preliminary Actions (continued)**

[5] **ENSURE** outstanding Design Change Notices (DCN's), Engineering Document Construction Releases (EDCR's) or Temporary Modifications (T-Mod's) do NOT adversely impact testing, and

**ATTACH** documentation of DCN's, EDCR's and T-Mod's that were reviewed to the data package. \_\_\_\_\_

[6] **ENSURE** required Component Testing has been completed prior to start of test. \_\_\_\_\_

[7] **VERIFY** System cleanliness as required for the performance of this test has been completed in accordance with SMP-7.0.

(Subsection 6.3) \_\_\_\_\_

[8] **ENSURE** all piping supports required for testing are installed and adjusted as required. \_\_\_\_\_

[9] **CONDUCT** a pretest briefing with Test and Operations personnel in accordance with SMP-9.0. \_\_\_\_\_

[10] **ENSURE** that communications are available for areas where testing is to be conducted. \_\_\_\_\_

[11] **VERIFY** plant instruments, listed on Appendix C, Permanent Plant Instrumentation Log, are placed in service and are within their calibration interval.

A. (Subsection 6.1) \_\_\_\_\_

B. (Subsection 6.2) \_\_\_\_\_

C. (Subsection 6.3) \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 14 of 64</b>
-----------------------	--	---

Date \_\_\_\_\_

**4.1 Preliminary Actions (continued)**

**NOTE**

Any Annunciator points associated with 2-MUX-55-12 and 2-MUX-55-13 ONLY have master switches at the bottom of each terminal strip.

All points associated with 2-TBK-55-25, 2-TBK-55-26, 2-TBK-55-27, and 2-TBK-55-28 will not have individual switches or a master switch.

- [12] **ENSURE** System 55, Annunciator and Sequential Events Recording System applicable TBK switches are ON, the applicable Master Switches are ON, and window software input (s) are ENABLED for the following Annunciator windows:

2-XA-55-5A-88E (SubSection 6.3) \_\_\_\_\_
- [13] **ENSURE** components contained within the boundaries of this test are under the jurisdictional control of Preoperational Startup Engineering (PSE) and/or Plant Operations. \_\_\_\_\_
- [14] **ENSURE** a review of outstanding Clearances has been coordinated with Operations for impact to the test performance, **AND**

**RECORD** in Appendix B, Temporary Condition Log, if required. \_\_\_\_\_
- [15] **OBTAIN** copies of the applicable forms from the latest revision of SMP-9.0, **AND**

**ATTACH** to this PTI for use during the performance of this PTI. \_\_\_\_\_
- [16] **VERIFY** Measuring and Test Equipment (M&TE) calibration due dates will support the completion of this test performance. \_\_\_\_\_
- [17] **VERIFY** Measuring and Test Equipment (M&TE) required for test performance has been (as required) filled, vented, place in service and recorded on Measuring and Test Equipment Log.

(Subsection 6.3) \_\_\_\_\_
- [18] **PERFORM** a pretest walkdown on equipment to be tested to ensure no conditions exist that will impact test performance. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 15 of 64</b>
-----------------------	--	---

Date \_\_\_\_\_

**4.2 Special Tools, Measuring and Test Equipment, Parts, and Supplies**

- [1] **VERIFY** portable air blower installed at the RVHVS header for aid in cooling area as necessary.

(Subsection 6.3) \_\_\_\_\_

**4.3 Field Preparations**

- [1] **ENSURE** the following systems are operational and have been placed in service to the extent necessary to perform this test:

- A. System 236, 125V DC Vital Power - Control power to the RVHVS isolation and throttle valves \_\_\_\_\_

- B. System 235, 120V AC Vital Instrument Power - Supply power to the RVHVS throttle valve Hand Indicating Controllers (HICs) \_\_\_\_\_

- [2] **ENSURE** the Plant Computer is available and Computer Points listed are active and the description for these points have been verified.

- A. FD2196, REAC HEAD VENT TR-A ISOL VLV, (Subsection 6.1) \_\_\_\_\_

- B. FD2348, REAC HEAD VENT TR-B ISOL VLV, (Subsection 6.2) \_\_\_\_\_

- C. T2832A, RV HEAD VENT TEMP, (Subsection 6.3) \_\_\_\_\_

- [3] **PERFORM** the Switch Lineup listed in Appendix D. \_\_\_\_\_

- [4] **PERFORM** the Electrical Lineup listed in Appendix E. \_\_\_\_\_

- [5] **PERFORM** the Valve Lineup listed in Appendix F. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 16 of 64</b>
-----------------------	--	---

Date \_\_\_\_\_

**4.3 Field Preparations (continued)**

[6] **VERIFY** the Reactor Coolant System is at ambient pressure conditions.

A. (Subsection 6.1) \_\_\_\_\_

B. (Subsection 6.2) \_\_\_\_\_

[7] **VERIFY** scaffolding is erected for access to the RVHVS header and flow valves.

A. (Subsection 6.1) \_\_\_\_\_

B. (Subsection 6.2) \_\_\_\_\_

[8] **VERIFY** the Pressurizer Relief Tank is filled with water to the normal level and is available to receive steam/water discharged from the Reactor Coolant System via RVHVS during the Hot Functional Test when the normal operating temperature and pressure conditions have been established.

(Subsection 6.3) \_\_\_\_\_

**4.4 Approvals and Notifications**

[1] **OBTAIN** permission of the Preoperational Startup Manager to start the test.

\_\_\_\_\_  
Preoperational Startup Manager  
Signature

\_\_\_\_\_  
Date

[2] **OBTAIN** the U2 Supervisor's (US/SRO) or Shift Manager's (SM) authorization.

\_\_\_\_\_  
U2 US/SRO/SM Signature

\_\_\_\_\_  
Date

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 17 of 64</b>
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## 5.0 ACCEPTANCE CRITERIA

- [1] Power Disconnect Switch 2-SW-68-394 operates correctly de-energizing 2-FSV-68-394 and 2-FSV-68-397. Each valve can be operated from the MCR board and indicates position correctly. (Steps 6.1[6],6.1[7],6.1[8]),6.1[9] and (Steps 6.1[13],6.1[15]) and 6.1[21]
- [2] Power Disconnect Switch 2-SW-68-395 operates correctly de-energizing 2-FSV-68-395 and 2-FSV-68-396. Each valve can be operated from the MCR board and indicates position correctly. (Steps 6.2[6],6.2[7],6.2[8],6.2[9]) and (Steps 6.2[13],6.2[15]) and 6.2[21]
- [3] 2-FSV-68-394, 2-FSV-68-395, 2-FSV-68-396 and 2-FSV-68-397 fail closed on loss of electrical power. (Steps 6.3[76],6.3[86],6.3[94] and 6.3[101])
- [4] 2-FSV-68-394, REACTOR VESSEL HEAD VENT ISOL VALVE, will open when pressurized on upstream side at RCS No-Load temperature and pressure conditions of 557°F and 2235 psig nominal. Valve fully opens in ≤ 10 seconds. (Steps 6.3[17] and 6.3[18].
- [5] 2-FSV-68-395, REACTOR VESSEL HEAD VENT ISOL VALVE, will open when pressurized on upstream side at RCS No-Load temperature and pressure conditions of 557°F and 2235 psig nominal. Valve fully opens in ≤ 10 seconds. (Steps 6.3[45] and 6.3[46].
- [6] 2-FSV-68-396, REACTOR VESSEL HEAD VENT THROTTLE VALVE, will throttle open and close when pressurized on upstream side at RCS No-Load temperature and pressure conditions of 557°F and 2235 psig nominal. (Steps 6.3[53],6.3[56],6.3[59],6.3[61] and 6.3[63])
- [7] 2-FSV-68-397, REACTOR VESSEL HEAD VENT THROTTLE VALVE, will throttle open and close when pressurized on upstream side at RCS No-Load temperature and pressure conditions of 557°F and 2235 psig nominal. (Steps 6.3[25],6.3[28],6.3[31] 6.3[34] and 6.3[36])
- [8] Flow is established through each RVHVS flow path. (Steps 6.3[59],6.3[75],6.3[85] and 6.3[100])
- [9] Annunciator 88-E "RX HEAD VENT TEMP HI" ALARMS when RVHVS pipe temperature, 2-TE-68-398, increases above setpoint. (Step 6.3[19])

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 18 of 64</b>
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**5.0 ACCEPTANCE CRITERIA (continued)**

- [10] Verify the RVHVS solenoid-operated valves properly operate from all applicable control stations, verifying that indicating lights and inputs to monitoring systems are functioning correctly. (Steps 6.1[21], 6.2[21] and 6.3[103])

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 19 of 64</b>
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Date \_\_\_\_\_

## 6.0 PERFORMANCE

<b>NOTES</b>	
1)	Sections 6.1 and 6.2 can be performed in any order per STE direction but must be completed prior to performing Section 6.3. Section 6.3 is performed with the Reactor Coolant System at normal operating temperature and pressure during Hot Functional Testing.
2)	The first time that each valve is tested OPEN or CLOSED, all light indications will be VERIFIED locally by actual valve position. For subsequent testing, light or controller indication will be used unless otherwise stated.
3)	2-FCV-68-396 and 397 are solenoid operated throttle valves controlled by Hand Indicating Controllers (HIC). It should be noted that the arrow adjacent the thumbwheel is the demand (setpoint) indication and the other arrow is the output (actual valve position).

### 6.1 Operability of Train A REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-394, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-397

- [1] **VERIFY** precautions and limitations in Section 3.0 have been reviewed. \_\_\_\_\_
- [2] **VERIFY** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. \_\_\_\_\_
- [3] **VERIFY** Controller 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, located on MCB Panel 2-M-4, demand (SETPOINT) is at 0% (CLOSED position). \_\_\_\_\_
- [4] **VERIFY** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, located on MCB Panel 2-M-4, is in the CLOSE position. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 20 of 64</b>
-----------------------	--	---

Date \_\_\_\_\_

**6.1 Operability of Train A REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-394, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-397 (continued)**

- [5] **VERIFY** Power Disconnect Switch 2-SW-68-394, located in Vital Battery Board Room III on Junction Box JB4968, is in the OFF position. \_\_\_\_\_
- [6] **VERIFY** the status of the indicating lights at 2-HS-68-394, RX HEAD VENT ISOL, located on MCB Panel 2-M-4, as follows:

  - A. Red Light OFF. (**ACC CRIT**) \_\_\_\_\_
  - B. Green Light OFF. (**ACC CRIT**) \_\_\_\_\_
- [7] **PLACE** Power Disconnect Switch 2-SW-68-394, located in Vital Battery Board Room III on Junction Box JB4968, (Col A10R, EI 757) to the ON position, **AND**

**VERIFY** the following at 2-HS-68-394, RX HEAD VENT ISOL

  - A. Red light OFF. (**ACC CRIT**) \_\_\_\_\_
  - B. Green light ON. (**ACC CRIT**) \_\_\_\_\_
- [8] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, located on MCB Panel 2-M-4, to the OPEN position **AND**

**VERIFY:**

  - A. Valve 2-FSV-68-394, RX HEAD VENT ISOL, OPEN (locally) (**ACC CRIT**) \_\_\_\_\_
  - B. Red light ON. (**ACC CRIT**) \_\_\_\_\_
  - C. Green light OFF. (**ACC CRIT**) \_\_\_\_\_
  - D. ICS point FD2196 displays "OPEN". (**ACC CRIT**) \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 21 of 64</b>
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Date \_\_\_\_\_

**6.1 Operability of Train A REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-394, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-397 (continued)**

[9] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, located on MCB Panel 2-M-4, to the CLOSE position **AND**

**VERIFY:**

- A. Valve 2-FSV-68-394, RX HEAD VENT ISOL, CLOSED (locally) **(ACC CRIT)** \_\_\_\_\_
- B. Red Light OFF. **(ACC CRIT)** \_\_\_\_\_
- C. Green Light ON. **(ACC CRIT)** \_\_\_\_\_
- D. ICS point FD2196 displays "NOT OPE". **(ACC CRIT)** \_\_\_\_\_

**NOTES**

- 1) Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.
- 2) An output (VLV POSITION) of  $\geq 85\%$  on 2-HIC-68-397 is within the calibration tolerance of this instrument and indicates 2-FSV-68-397 is OPEN.

[10] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) from 0% OPEN to 100% OPEN, **AND**

**VERIFY:**

- A. Output (VLV POSITION) on controller travels from 0% OPEN to  $\geq 85\%$  OPEN. \_\_\_\_\_
- B. Valve 2-FSV-68-397, RX HEAD VENT FLOW CONTROL VALVE, OPEN (locally) \_\_\_\_\_

[11] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) from 100% OPEN to 0% OPEN, **AND**

**VERIFY:**

- A. Output (VLV POSITION) on controller travels from  $\geq 85\%$  OPEN to 0% OPEN. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 22 of 64</b>
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Date \_\_\_\_\_

**6.1 Operability of Train A REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-394, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-397 (continued)**

B. Valve 2-FSV-68-397, RX HEAD VENT FLOW CONTROL VALVE, CLOSED (locally) \_\_\_\_\_

[12] **PLACE** Power Disconnect Switch 2-SW-68-394, located in Vital Battery Board Room III on Junction Box JB4968 (2-JB-292-4968-A), to the OFF position.(45N2632-19) \_\_\_\_\_

[13] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) from 0% OPEN to 50% OPEN, **AND**

**VERIFY** output (VLV POSITON) on controller remains at 0% OPEN.  
**(ACC CRIT)** \_\_\_\_\_

[14] **PLACE** Power Disconnect Switch 2-SW-68-394, located in Vital Battery Board Room III on Junction Box JB4968 (2-JB-292-4968-A), to the ON position. \_\_\_\_\_

[15] **VERIFY** that the output (VLV POSITION) on 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, travels to 50% OPEN.  
**(ACC CRIT)** \_\_\_\_\_

[16] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% OPEN, **AND**

**VERIFY** that output (VLV POSITON) travels to 0% OPEN. \_\_\_\_\_

[17] **LIFT** wire RTAS1 at Terminal TB2-1 on 2-FM-68-397 in Panel 2-L-447 [Col A12W, EI 786] to disable solenoid coil. (2-45W600-68-2). \_\_\_\_\_

1st

CV

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 23 of 64</b>
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Date \_\_\_\_\_

**6.1 Operability of Train A REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-394, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-397 (continued)**

**NOTE**

The following step verifies that controller 2-HIC-68-397 is showing actual valve position on the output (VLV POSITON) scale.

- [18] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 100% OPEN, **AND**

**VERIFY** that output (VLV POSITON) remains at 0% OPEN. \_\_\_\_\_
- [19] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% OPEN. \_\_\_\_\_
- [20] **LAND** wire RTAS1 at Terminal TB2-1 on 2-FM-68-397 in Panel 2-L-447 [Col A12W, El 786] (2-45W600-68-2). \_\_\_\_\_

1st

CV
- [21] **VERIFY** successful completion of this Subsection 6.1. (ACC CRIT) \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 24 of 64</b>
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Date \_\_\_\_\_

**6.2 Operability of Train B REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-395, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-396**

- [1] **VERIFY** precautions and limitations in Section 3.0 have been reviewed. \_\_\_\_\_
- [2] **VERIFY** all prerequisites listed in Section 4.0 for Subsection 6.2 have been completed. \_\_\_\_\_
- [3] **VERIFY** Controller 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, located on MCB Panel 2-M-4, demand (SETPOINT) is at 0% (CLOSED position). \_\_\_\_\_
- [4] **VERIFY** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, located on MCB panel 2-M-4, is in the CLOSE position. \_\_\_\_\_
- [5] **VERIFY** Power Disconnect Switch 2-SW-68-395, located in Vital Battery Board Room IV on Junction Box JB4974, (A12R, EL 757) is in the OFF position. (45N2632-19) \_\_\_\_\_
- [6] **VERIFY** the status of the indicating lights at 2-HS-68-395, RX HEAD VENT ISOL, located on MCB Panel 2-M-4, as follows:
  - A. Red Light OFF. (**ACC CRIT**) \_\_\_\_\_
  - B. Green Light OFF. (**ACC CRIT**) \_\_\_\_\_
- [7] **PLACE** Power Disconnect Switch 2-SW-68-395, located in Vital Battery Board Room IV on Junction Box JB4974, (A12R, EL 757) to the ON position, **AND**
  - VERIFY** the following at 2-HS-68-395, RX HEAD VENT ISOL
    - A. Red Light OFF. (**ACC CRIT**) \_\_\_\_\_
    - B. Green Light ON. (**ACC CRIT**) \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 25 of 64</b>
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Date \_\_\_\_\_

**6.2 Operability of Train B REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-395, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-396 (continued)**

[8] **PLACE** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, located on MCB Panel 2-M-4, to the OPEN position **AND**

**VERIFY:**

- A. Valve 2-FSV-68-395, RX HEAD VENT ISOL, OPEN (locally) **(ACC CRIT)** \_\_\_\_\_
- B. Red Light ON. **(ACC CRIT)** \_\_\_\_\_
- C. Green Light OFF. **(ACC CRIT)** \_\_\_\_\_
- D. ICS point FD2348 displays "OPEN". **(ACC CRIT)** \_\_\_\_\_

[9] **PLACE** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, located on MCB Panel 2-M-4, to the CLOSE position **AND**

**VERIFY:**

- A. Valve 2-FSV-68-395, RX HEAD VENT ISOL, CLOSED (locally) **(ACC CRIT)** \_\_\_\_\_
- B. Red Light OFF. **(ACC CRIT)** \_\_\_\_\_
- C. Green Light ON. **(ACC CRIT)** \_\_\_\_\_
- D. ICS point FD2348 displays "NOT OPE". **(ACC CRIT)** \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 26 of 64</b>
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Date \_\_\_\_\_

**6.2 Operability of Train B REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-395, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-396 (continued)**

NOTES
<p>1) Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.</p> <p>2) An output (VLV POSITION) of <math>\geq 85\%</math> on 2-HIC-68-396 is within the calibration tolerance of this instrument and indicates 2-FSV-68-396 is OPEN.</p>

[10] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) from 0% OPEN to 100% OPEN, **AND**

**VERIFY:**

A. Output (VLV POSITION) on controller travels from 0% OPEN to  $\geq 85\%$  OPEN. \_\_\_\_\_

B. Valve 2-FSV-68-396, RX HEAD VENT FLOW CONTROL VALVE, OPEN (locally) \_\_\_\_\_

[11] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) from 100% OPEN to 0% OPEN, **AND**

**VERIFY:**

A. Output (VLV POSITION) on controller travels from  $\geq 85\%$  OPEN to 0% OPEN. \_\_\_\_\_

B. Valve 2-FSV-68-396, RX HEAD VENT FLOW CONTROL VALVE, CLOSED (locally) \_\_\_\_\_

[12] **PLACE** Power Disconnect Switch 2-SW-68-395, located in Vital Battery Board Room IV on Junction Box JB4974, to the OFF position. \_\_\_\_\_

[13] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) from 0% OPEN to 50% OPEN, **AND**

**VERIFY** output (VLV POSITON) on controller remains at 0% OPEN.

**(ACC CRIT)** \_\_\_\_\_

Date \_\_\_\_\_

**6.2 Operability of Train B REACTOR VESSEL HEAD VENT ISOL VALVE 2-FSV-68-395, and REACTOR VESSEL HEAD VENT THROTTLE VALVE 2-FSV-68-396 (continued)**

- [14] **PLACE** Power Disconnect Switch 2-SW-68-395, located in Vital Battery Board Room IV on Junction Box JB4974, to the ON position. \_\_\_\_\_
- [15] **VERIFY** that the output (VLV POSITION) on 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, travels to 50% OPEN. **(ACC CRIT)** \_\_\_\_\_
- [16] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% OPEN, **AND**  
  
**VERIFY** that output (VLV POSITON) travels to 0% OPEN. \_\_\_\_\_
- [17] **LIFT** wire RTBS1 at Terminal TB2-1 on 2-FM-68-396 in Panel 2-L-446 [Col A12W, EI 786] to disable solenoid coil. (2-45W600-68-2). \_\_\_\_\_  

1st  
\_\_\_\_\_  
CV  
\_\_\_\_\_

**NOTE**

The following step verifies that controller 2-HIC-68-396 is showing actual valve position on the output (VLV POSITON) scale.

- [18] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 100% OPEN, **AND**  
  
**VERIFY** that output (VLV POSITON) remains at 0% OPEN \_\_\_\_\_
- [19] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, to 0% OPEN. \_\_\_\_\_
- [20] **LAND** wire RTBS1 at Terminal TB2-1 on 2-FM-68-396 in Panel 2-L-446. (2-45W600-68-2) \_\_\_\_\_  

1st  
\_\_\_\_\_  
CV  
\_\_\_\_\_
- [21] **VERIFY** successful completion of this Subsection 6.2. **(ACC CRIT)** \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 28 of 64</b>
-----------------------	--	---

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure.**

<b>NOTES</b>	
1)	Coordinate this test with other tests involving the Pressurizer Relief Tank to eliminate potential interference during the Hot Functional Test.
2)	During the performance of this Subsection, piping vibration data will be collected. The Test Engineer is responsible for performance of piping vibration activities in accordance with 2-PTI-999-01 and shall make an entry in the chronological test log.
3)	During the performance of this Subsection the stroke time will be recorded for the Reactor Head Vent Isolation Valves.

- [1] **VERIFY** precautions and limitations in Section 3.0 have been reviewed. \_\_\_\_\_
- [2] **VERIFY** all prerequisites listed in Section 4.0 for Subsection 6.3 have been completed. \_\_\_\_\_
- [3] **VERIFY** Reactor Coolant System is at the No-Load temperature and pressure conditions of 2235 psig (2220-2250) and 557°F (552-562) (557°F plateau). \_\_\_\_\_
- [4] **NOTIFY** the Unit Supervisor that this test is to commence and a small portion of RCS inventory will be transferred to the PRT. \_\_\_\_\_
- [5] **VERIFY** Pressurizer Relief Tank is aligned for normal service in support of the Hot Functional Test (2-PTI-068-01) and available to receive water/steam from the head vent system. \_\_\_\_\_
- [6] **VERIFY** the refueling spool piece for RVHVS has been installed, and the head vent system is continuous to the RX Head. \_\_\_\_\_
- [7] **ENSURE** the piping vibration test engineer has test equipment and personnel in place to support vibration testing. \_\_\_\_\_
- [8] **VERIFY/PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, on MCB Panel 2-M-4, in the CLOSE position **AND**  
  
**VERIFY:**  
A. Red Light OFF. \_\_\_\_\_

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

B. Green Light ON. \_\_\_\_\_

[9] **VERIFY/PLACE** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, on MCB panel 2-M-4, in the CLOSE position **AND**

**VERIFY:**

A. Red Light OFF. \_\_\_\_\_

B. Green Light ON. \_\_\_\_\_

[10] **VERIFY** Controller 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, located on MCB Panel 2-M-4, demand (SETPOINT) is at 0% (CLOSED position). \_\_\_\_\_

[11] **VERIFY** Controller 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, located on MCB Panel 2-M-4, demand (SETPOINT) is at 0% (CLOSED position). \_\_\_\_\_

[12] **VERIFY** 2-VTV-68-604, RX HEAD VENT LINE VENT, [IC/755, AZ30], is CLOSED. \_\_\_\_\_

[13] **VERIFY** 2-ISV-68-607, HEAD VENT ISV, [IC/749, RX CAVITY] is OPEN **AND**

**RECORD** vent header temperature from 2-TI-68-398, RX HEAD VENT TEMP located on MCB Panel 2-M-5 and from Computer Point T2832A, RV HEAD VENT TEMP. \_\_\_\_\_

2-TI-68-398 \_\_\_\_\_ °F

T2832A \_\_\_\_\_ °F

[14] **VERIFY** Annunciator Window 88-E, RX HEAD VENT TEMP HI, at Panel 2-XA-55-5A, is CLEAR. \_\_\_\_\_

[15] **NOTIFY** TE responsible for 2-PTI-999-01 that conditions have been established for transient event for Reactor Head Vent line, Train A valves. \_\_\_\_\_

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**CAUTION**

Pressure drop across isolation valve is 2235 psig at a fluid temperature of 557°F, and flashing of subcooled water to steam is expected in this line when a flow path is established to the PRT. Prior to opening any one of the Reactor Head Vent Valves, clear all personnel NOT associated with this test from the area of the PRT. Personnel associated with the test should observe initial valve opening from a safe distance and be aware of any sudden noise or excessive pipe vibration.

**NOTES**

1) The following step starts a timed sequence. Stroke time measurement starts when 2-HS-68-394, RX HEAD VENT ISOL, is placed in OPEN and stops when the RED light on 2-HS-68-394 changes from NOT LIT to LIT.

2) 2-PTI-999-01 vibration testing is to be performed for the complete cycling of the Train A RVHVS isolation and throttle valves (Steps 6.3[16] through 6.3[39]).

[16] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the OPEN position **AND**

**MEASURE** stroke time of 2-FSV-68-394 with the stopwatch. \_\_\_\_\_

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

[17] **RECORD** the MEASURED STROKE TIME (**ACC CRIT**): \_\_\_\_\_

STROKE DIRECTION	MEASURED STROKE TIME (sec)	LIMITING VALUE OF FULL STROKE TIME (sec)
CLOSED→OPEN		≤10

[18] **VERIFY** 2-FSV-68-394, RX HEAD VENT ISOL, OPEN: (**ACC CRIT**)

A. Red Light ON \_\_\_\_\_

B. Green Light OFF \_\_\_\_\_

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[19] **VERIFY** Annunciator Window 88-E, RX HEAD VENT TEMP HI, ALARMS. **(ACC CRIT)** \_\_\_\_\_

[20] **RECORD** temperature reading from 2-TI-68-398, RX HEAD VENT TEMP located on MCB Panel 2-M-5 and from Computer Point T2832A, RV HEAD VENT TEMP. \_\_\_\_\_

2-TI-68-398 \_\_\_\_\_ °F

T2832A \_\_\_\_\_ °F

[21] **RECORD** PRT parameter readings on 2-PI-68-301, 2-TI-68-309, and 2-LI-68-300 [Panel 2-M-4]. \_\_\_\_\_

PRT PRESS	2-PI-68-301	_____ psig
PRT TEMP	2-TI-68-309	_____ °F
PRT LEVEL	2-LI-68-300	_____ %

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 32 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

<b>CAUTIONS</b>	
1)	Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.
2)	While venting to the PRT, continuously monitor the PRT pressure, temperature, and level on control room indicators 2-PI-68-301 (PRT PRESS), 2-TI-68-309 (PRT TEMP), and 2-LI-68-300 (PRT LEVEL) at Panel 2-M-4. If an abnormal rise in any of these parameters is indicated, immediately stop the test by closing 2-FSV-68-394, RX HEAD VENT ISOL VALVE.
3)	While venting to the PRT, do NOT allow the PRT pressure to exceed 68 psig (80% of the rupture disc rating).

<b>NOTES</b>	
1)	Steps 6.3[22] thru step 6.3[32] should be performed as quickly as possible to limit time of venting to the PRT.
2)	An output (VLV POSITION) of $\geq 85\%$ on 2-HIC-68-397 is within the calibration tolerance of this instrument and indicates 2-FSV-68-397 is OPEN.

[22] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 10%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to approximately 10% OPEN. \_\_\_\_\_

[23] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL. Allow flow to stabilize for approximately 1 minute. \_\_\_\_\_

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

[24] **RECORD** head vent temperature reading from 2-TI-68-398, RX HEAD VENT TEMP located on MCB Panel 2-M-5 and from Computer Point T2832A, RV HEAD VENT TEMP. \_\_\_\_\_

2-TI-68-398 \_\_\_\_\_ °F

T2832A \_\_\_\_\_ °F

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[25] **COMPARE** temperature recorded for 2-TI-68-398, RX HEAD VENT TEMP located on MCB Panel 2-M-5 at Steps 6.3[20] and 6.3[24] **AND**

**VERIFY** by increased temperature at 6.3[24] that Flow through 2-FSV-68-397 has been initiated. **(ACC CRIT)**

2-TI-68-398 \_\_\_\_\_ °F@6.3[20]

2-TI-68-398 \_\_\_\_\_ °F@6.3[24]

[26] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 50%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to approximately 50% OPEN.

[27] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL. Allow flow to stabilize for approximately 1 minute.

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[28] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[21] that flow has been established to the PRT **AND**

**RECORD. (ACC CRIT)**

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

[29] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN.

[30] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL.

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

- [31] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[28] that flow has been established to the PRT **AND**

**RECORD. (ACC CRIT)**

PRT PRESS	2-PI-68-301	_____ psig
PRT TEMP	2-TI-68-309	_____ °F
PRT LEVEL	2-LI-68-300	_____ %

- [32] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 0%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to approximately 0% OPEN.

- [33] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL.

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

- [34] **VERIFY** PRT parameter readings on 2-PI-68-301, 2-TI-68-309, and 2-LI-68-300 [Panel 2-M-4] are stable for a minimum of 1 minute indicating flow to the PRT has been isolated **AND**

**RECORD. (ACC CRIT)**

PRT PRESS	2-PI-68-301	_____ psig
PRT TEMP	2-TI-68-309	_____ °F
PRT LEVEL	2-LI-68-300	_____ %

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 36 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**CAUTIONS**

- 1) While venting to the PRT, continuously monitor the PRT pressure, temperature, and level on control room indicators 2-PI-68-301 (PRT PRESS), 2-TI-68-309 (PRT TEMP), and 2-LI-68-300 (PRT LEVEL) at Panel 2-M-4. If an abnormal rise in any of these parameters is indicated, immediately stop the test by closing 2-FSV-68-394, RX HEAD VENT ISOL VALVE.
- 2) While venting to the PRT, do NOT allow the PRT pressure to exceed 68 psig (80% of the rupture disc rating).
- 3) Pressure drop across isolation valve is 2235 psig at a fluid temperature of 557°F, and flashing of subcooled water to steam is expected in this line when a flow path is established to the PRT. Prior to opening any one of the Reactor Head Vent Valves, clear all personnel NOT associated with this test from the area of the PRT. Personnel associated with the test should observe initial valve opening from a safe distance and be aware of any sudden noise or excessive pipe vibration.
- 4) Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.

**NOTE**

Step 6.3[37] should be performed immediately after Steps 6.3[35] and 6.3[36] to limit the time of venting to the PRT.

[35] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN.

\_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 37 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[36] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL. **(ACC CRIT)**

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

**NOTE**

The following step starts a timed sequence. Stroke time measurement starts when 2-HS-68-394, RX HEAD VENT ISOL, is placed in CLOSE and stops when the GREEN light on 2-HS-68-394 changes from NOT LIT to LIT.

[37] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the CLOSE position **AND**

**MEASURE** stroke time of 2-FSV-68-394 with the stopwatch. \_\_\_\_\_

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

[38] **RECORD** the MEASURED STROKE TIME: \_\_\_\_\_

STROKE DIRECTION	MEASURED STROKE TIME (sec)	LIMITING VALUE OF FULL STROKE TIME (sec)
OPEN→CLOSE		≤10

[39] **VERIFY** 2-FSV-68-394, RX HEAD VENT ISOL, CLOSED:

A. Red Light OFF \_\_\_\_\_

B. Green Light ON \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 38 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**NOTE**

To complete the following step, it is permissible to use a portable air blower to increase the cooling rate and reduce the time interval for Annunciator Window 88-E, RX HEAD VENT TEMP HI, to CLEAR.

[40] **ALLOW** the Head Vent System to cool, with 2-FSV-68-394, RX HEAD VENT ISOL VALVE, CLOSED, and 2-FSV-68-397, RX HEAD VENT THROTTLE VALVE, OPEN, until Annunciator Window 88-E, RX HEAD VENT TEMP HI, CLEARS. \_\_\_\_\_

[41] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% **AND**

**VERIFY** output (VLV POSITION) on controller travels to 0% OPEN. \_\_\_\_\_

[42] **MAINTAIN** the Head Vent System in this configuration for a minimum of 30 minutes, **AND**

**VERIFY** that Annunciator Window 88-E, RX HEAD VENT TEMP HI, stays CLEAR during this time interval. \_\_\_\_\_

[43] **NOTIFY** TE responsible for 2-PTI-999-01 that conditions have been established for transient event for Reactor Head Vent line, Train B valves. \_\_\_\_\_

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**CAUTION**

Pressure drop across isolation valve is 2235 psig at a fluid temperature of 557°F, and flashing of subcooled water to steam is expected in this line when a flow path is established to the PRT. Prior to opening any one of the Reactor Head Vent Valves, clear all personnel NOT associated with this test from the area of the PRT. Personnel associated with the test should observe initial valve opening from a safe distance and be aware of any sudden noise or excessive pipe vibration.

**NOTES**

1) The following step starts a timed sequence. Stroke time measurement starts when 2-HS-68-395, RX HEAD VENT ISOL, is placed in OPEN and stops when the RED light on 2-HS-68-395 changes from NOT LIT to LIT.

2) 2-PTI-999-01 vibration testing is to be performed for the complete cycling of the Train B RVHVS isolation and throttle valves (Steps 6.3[44] through 6.3[68]).

[44] **PLACE** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, to the OPEN position **AND**

**MEASURE** stroke time of 2-FSV-68-395 with the stopwatch. \_\_\_\_\_

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

[45] **RECORD** the MEASURED STROKE TIME (**ACC CRIT**): \_\_\_\_\_

STROKE DIRECTION	MEASURED STROKE TIME (sec)	LIMITING VALUE OF FULL STROKE TIME (sec)
CLOSED→OPEN		≤10

[46] **VERIFY** 2-FSV-68-395, RX HEAD VENT ISOL, OPEN: (**ACC CRIT**)

A. Red Light ON \_\_\_\_\_

B. Green Light OFF \_\_\_\_\_

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[47] **VERIFY** Annunciator Window 88-E, RX HEAD VENT TEMP HI, ALARMS. \_\_\_\_\_

[48] **RECORD** temperature reading from 2-TI-68-398, RX HEAD VENT TEMP located on MCB Panel 2-M-5 and from Computer Point T2832A, RV HEAD VENT TEMP. \_\_\_\_\_

2-TI-68-398 \_\_\_\_\_ °F

T2832A \_\_\_\_\_ °F

[49] **RECORD** PRT parameter readings on 2-PI-68-301, 2-TI-68-309, and 2-LI-68-300 [Panel 2-M-4]. \_\_\_\_\_

PRT PRESS	2-PI-68-301	_____ psig
PRT TEMP	2-TI-68-309	_____ °F
PRT LEVEL	2-LI-68-300	_____ %

**NOTES**

- 1) Steps 6.3[50] thru step 6.3[60] should be performed as quickly as possible to limit time of venting to the PRT.
- 2) An output (VLV POSITION) of  $\geq 85\%$  on 2-HIC-68-396 is within the calibration tolerance of this instrument and indicates 2-FSV-68-396 is OPEN.

[50] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 10%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to approximately 10% OPEN. \_\_\_\_\_

[51] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-396, RX HEAD VENT FLOW CONTROL. Allow flow to stabilize for approximately 1 minute. \_\_\_\_\_

2-HIC-068-0396 **VALVE POSITION** \_\_\_\_\_ %

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[52] **RECORD** head vent temperature reading from 2-TI-68-398, RX HEAD VENT TEMP located on MCB Panel 2-M-5 and from Computer Point T2832A, RV HEAD VENT TEMP \_\_\_\_\_

2-TI-68-398 \_\_\_\_\_ °F

T2832A \_\_\_\_\_ °F

[53] **COMPARE** temperature recorded for 2-TI-68-398, RX HEAD VENT TEMP, at Steps 6.3[48] and 6.3[52] and **VERIFY** by increased temperature at 6.3[52] that Flow through 2-FSV-68-396 has been initiated. (**ACC CRIT**) \_\_\_\_\_

2-TI-68-398 \_\_\_\_\_ °F@6.3[48]

2-TI-68-398 \_\_\_\_\_ °F@6.3[52]

[54] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 50%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to approximately 50% OPEN. \_\_\_\_\_

[55] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-396, RX HEAD VENT FLOW CONTROL. Allow flow to stabilize for approximately 1 minute. \_\_\_\_\_

2-HIC-68-396 **VALVE POSITION** \_\_\_\_\_ %

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 42 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[56] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[49] that flow has been established to the PRT **AND**

**RECORD. (ACC CRIT)**

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

[57] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN.

[58] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-396, RX HEAD VENT FLOW CONTROL.

2-HIC-68-396 **VALVE POSITION** \_\_\_\_\_ %

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[59] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[56] that flow has been established to the PRT **AND**

**RECORD. (ACC CRIT)**

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

[60] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to 0% OPEN.

[61] **VERIFY** PRT parameter readings on 2-PI-68-301, 2-TI-68-309, and 2-LI-68-300 [Panel 2-M-4] are stable for a minimum of 1 minute indicating flow to the PRT has been isolated **AND**

**RECORD. (ACC CRIT)**

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 44 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**CAUTION**

Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.

**NOTE**

Step 6.3[64] should be performed promptly after Step 6.3[62] to limit the time of venting to the PRT.

[62] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100%, **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN. \_\_\_\_\_

[63] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-396, RX HEAD VENT FLOW CONTROL. **(ACC CRIT)** \_\_\_\_\_

2-HIC-68-396 **VALVE POSITION** \_\_\_\_\_ %

**NOTE**

The following step starts a timed sequence. Stroke time measurement starts when 2-HS-68-395, RX HEAD VENT ISOL, is placed in CLOSE and stops when the GREEN light on 2-HS-68-395 changes from NOT LIT to LIT.

[64] **PLACE** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, to the CLOSE position **AND**

**MEASURE** stroke time of 2-FSV-68-395 with the stopwatch. \_\_\_\_\_

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 45 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[65] **RECORD** the MEASURED STROKE TIME: \_\_\_\_\_

STROKE DIRECTION	MEASURED STROKE TIME (sec)	LIMITING VALUE OF FULL STROKE TIME (sec)
OPEN→CLOSE		≤10

[66] **VERIFY** 2-FSV-68-395, RX HEAD VENT ISOL, CLOSED:

A. Red Light OFF \_\_\_\_\_

B. Green Light ON \_\_\_\_\_

**NOTE**

To complete the following step, it is permissible to use a portable air blower to increase the cooling rate and reduce the time interval for Annunciator Window 88-E, RX HEAD VENT TEMP HI, to CLEAR.

[67] **ALLOW** the Head Vent System to cool, with 2-FSV-68-395, RX HEAD VENT ISOL VALVE, CLOSED, and 2-FSV-68-396, RX HEAD VENT THROTTLE VALVE, OPEN, until Annunciator Window 88-E, RX HEAD VENT TEMP HI, CLEARS. \_\_\_\_\_

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[68] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% **AND**

**VERIFY** output (VLV POSITION) on controller travels to 0% OPEN.

[69] **RECORD** the following PRT parameters.

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

[70] **MAINTAIN** the Head Vent System in this configuration for a minimum of 30 minutes, **AND**

**VERIFY** that Annunciator Window 88-E, RX HEAD VENT TEMP HI, stays CLEAR during this time interval.

[71] **NOTIFY** TE responsible for 2-PTI-999-01 that conditions have been established for transient event for Reactor Head Vent line, Train A valves.

[72] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the OPEN position **AND**

**VERIFY:**

A. Red Light ON.

B. Green Light OFF.

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**CAUTION**

Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.

**NOTE**

Step 6.3[76] should be performed promptly after Step 6.3[73] to limit the time of venting to the PRT.

[73] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100% OPEN **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN. \_\_\_\_\_

[74] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL. \_\_\_\_\_

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

[75] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[69] that flow has been established to the PRT **AND**

**RECORD. (ACC CRIT)** \_\_\_\_\_

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 48 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**NOTE**

The following step verifies that 2-FSV-68-397, RX HEAD VENT THROTTLE VALVE, will fail CLOSED on loss of power.

[76] **LIFT** wire RHVAP1 at Terminal TB1-1 on 2-FM-68-397 in Panel 2-L-447 [Col A12W, EI 786] simulating a loss of power (2-45W600-68-2), **AND**

\_\_\_\_\_

1st

\_\_\_\_\_

CV

**VERIFY** PRT parameter readings on 2-LI-68-300, 2-PI-68-301, and 2-TI-68-309 stable for a minimum of 1 minute indicating 2-FSV-68-397, RX HEAD VENT THROTTLE VALVE, CLOSURE.  
**(ACC CRIT)**

[77] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the CLOSE position **AND**

**VERIFY:**

A. Red Light OFF.

B. Green Light ON.

[78] **LAND** wire RHVAP1 at Terminal TB1-1 on 2-FM-68-397 in Panel 2-L-447 [Col A12W, EI 786] **AND**

\_\_\_\_\_

1st

\_\_\_\_\_

CV

**VERIFY** output (VLV POSITION) on 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, indicates  $\geq 85\%$  OPEN.

[79] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% OPEN.

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[80] **RECORD** the following PRT parameters. \_\_\_\_\_

PRT PRESS	2-PI-68-301	_____ psig
PRT TEMP	2-TI-68-309	_____ °F
PRT LEVEL	2-LI-68-300	_____ %

[81] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the OPEN position **AND** \_\_\_\_\_

**VERIFY:**

A. Red Light ON. \_\_\_\_\_

B. Green Light OFF. \_\_\_\_\_

[82] **NOTIFY** TE responsible for 2-PTI-999-01 that conditions have been established for transient event for Reactor Head Vent line, Train A isolation valve and Train B throttle valve. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	2-PTI-068-09 Rev. 0000 Page 50 of 64
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**CAUTION**

Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.

**NOTES**

1) Step 6.3[86] should be performed promptly after Step 6.3[83] to limit the time of venting to the PRT.

2) 2-PTI-999-01 vibration testing is to be performed for the complete cycling of the RVHVS throttle valve (Steps 6.3[83] through 6.3[86]).

[83] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100% OPEN, **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN. \_\_\_\_\_

[84] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-396, RX HEAD VENT FLOW CONTROL. \_\_\_\_\_

2-HIC-68-396 **VALVE POSITION** \_\_\_\_\_ %

[85] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[80] that flow has been established to the PRT **AND**

**RECORD. (ACC CRIT)** \_\_\_\_\_

PRT PRESS	2-PI-68-301	_____ psig
PRT TEMP	2-TI-68-309	_____ °F
PRT LEVEL	2-LI-68-300	_____ %

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 51 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**NOTE**

The following step verifies that 2-FSV-68-396, RX HEAD VENT THROTTLE VALVE, will fail CLOSED on loss of power.

[86] **LIFT** wire RHVBP1 at Terminal TB1-1 on 2-FM-68-396 in Panel 2-L-446 [Col A12W, EI 786] simulating a loss of power (2-45W600-68-2), **AND**

\_\_\_\_\_

1st

\_\_\_\_\_

CV

**VERIFY** PRT parameter readings on 2-LI-68-300, 2-PI-68-301, and 2-TI-68-309 stabilize indicating 2-FSV-68-396, RX HEAD VENT THROTTLE VALVE, CLOSURE.  
**(ACC CRIT)**

[87] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the CLOSE position **AND**

**VERIFY:**

A. Red Light OFF.

B. Green Light ON.

[88] **LAND** wire RHVBP1 at Terminal TB1-1 on 2-FM-68-396 in Panel 2-L-446 [Col A12W, EI 786] **AND**

\_\_\_\_\_

1st

\_\_\_\_\_

CV

**VERIFY** output (VLV POSITION) on 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, indicates  $\geq$  85% OPEN.

[89] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% OPEN.

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 52 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[90] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the OPEN position **AND**

**VERIFY:**

- A. Red Light ON. \_\_\_\_\_
- B. Green Light OFF. \_\_\_\_\_

**CAUTION**

Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.

[91] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100% OPEN **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN. \_\_\_\_\_

[92] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL. \_\_\_\_\_

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[93] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[85] that flow has been established to the PRT **AND**

**RECORD.**

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

**NOTE**

Fail closed capability of 2-FSV-68-394 and 2-FSV-68-395, RX HEAD VENT ISOL VALVES, on loss of power is tested by placing respective handswitch in the CLOSE position.

[94] **PLACE** Handswitch 2-HS-68-394, RX HEAD VENT ISOL, to the CLOSE position **AND**

**VERIFY (ACC CRIT):**

A. Red Light OFF. \_\_\_\_\_

B. Green Light ON. \_\_\_\_\_

[95] **ADJUST** 2-HIC-68-396, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% OPEN. \_\_\_\_\_

[96] **NOTIFY** TE responsible for 2-PTI-999-01 that conditions have been established for transient event for Reactor Head Vent line, Train B isolation valve and Train A throttle valve. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 54 of 64</b>
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Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

**NOTE**

2-PTI-999-01 vibration testing is to be performed for the complete cycling of the RVHVS throttle valve (Steps 6.3[97] through 6.3[101]).

[97] **PLACE** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, to the OPEN position **AND**

**VERIFY:**

- A. Red Light ON. \_\_\_\_\_
- B. Green Light OFF. \_\_\_\_\_

**CAUTION**

Opening of RVHVS throttle valves with hand indicating controllers should be performed slowly (minimum 5 second stroke time) to prevent surging the system.

[98] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to approximately 100% OPEN **AND**

**VERIFY** output (VLV POSITION) on controller travels to  $\geq 85\%$  OPEN. \_\_\_\_\_

[99] **RECORD** controller **VALVE POSITION** indication from 2-HIC-68-397, RX HEAD VENT FLOW CONTROL. \_\_\_\_\_

2-HIC-68-397 **VALVE POSITION** \_\_\_\_\_ %

Date \_\_\_\_\_

**6.3 Operability Verification of Reactor Vessel Head Vent (RVHV) Isolation and Throttle Valves with Reactor Coolant System at normal Operating Temperature and Pressure. (continued)**

[100] **VERIFY** by a rise in any of the PRT parameter readings on 2-LI-68-300, 2-PI-68-301, or 2-TI-68-309 [Panel 2-M-4] as compared to readings taken in step 6.3[93] that flow has been established to the PRT **AND**

**RECORD. (ACC CRIT)**

PRT PRESS	2-PI-68-301	_____psig
PRT TEMP	2-TI-68-309	_____°F
PRT LEVEL	2-LI-68-300	_____%

[101] **PLACE** Handswitch 2-HS-68-395, RX HEAD VENT ISOL, to the CLOSE position **AND**

**VERIFY: (ACC CRIT)**

A. Red Light OFF.

B. Green Light ON.

[102] **ADJUST** 2-HIC-68-397, RX HEAD VENT FLOW CONTROL, demand (SETPOINT) to 0% OPEN.

[103] **VERIFY** successful completion of this Subsection 6.3. **(ACC CRIT)**

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 56 of 64</b>
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Date \_\_\_\_\_

**7.0 POST PERFORMANCE ACTIVITY**

- [1] **NOTIFY** the Unit 2 US/SRO of the test completion and system alignment. \_\_\_\_\_
  - [2] **VERIFY** that Post-test calibration of the M&TE used to record quantitative acceptance criteria has been satisfactorily performed and the results RECORDED on Measuring and Test Equipment (M&TE) Log in SMP-9.0 \_\_\_\_\_
  - [3] **VERIFY** that Post-test calibration of permanent plant instruments used to record quantitative acceptance criteria has been satisfactorily performed **AND**
- RECORD** the results on Appendix C, Permanent Plant Instrumentation Log. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 57 of 64</b>
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**8.0 RECORDS**

A. QA Records

Complete Test Package

B. Non-QA Records

None

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 58 of 64</b>
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**Appendix A  
(Page 1 of 1)**

**TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW**

Additional copies of this table may be made as necessary.

<b>PROCEDURE/ INSTRUCTION</b>	<b>REVISION/CHANGES</b>	<b>INITIAL AND DATE. (N/A for no change)</b>
SMP-9.0		
FSAR Section 3.9.2.1 Section 5.5.6 Section 5.1 Section 5.6 Table 14.2-1 Shts 77,78 and 79 of 89		
WBN2-68-4001		
2-TSD-68-1		
2-TSD-68-9		
2-TSD-HFT-1		
2-TSD-HFT-2		



<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 60 of 64</b>
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**Appendix C  
(Page 1 of 1)**

**PERMANENT PLANT INSTRUMENTATION LOG**

Date \_\_\_\_\_

INSTRUMENT OR INSTRUMENT LOOP #	CAL DUE DATE	FILLED AND VENTED <sup>1</sup>	PLACED IN SERVICE <sup>1</sup>	USED FOR QUANTITATIVE ACC CRIT		POST-TEST CAL DATE <sup>2</sup>	POST-TEST CALIBRATION ACCEPTABLE <sup>2</sup> INITIAL/DATE
		INIT/DATE	INIT/DATE	YES	NO		
2-TE-68-398							
2-TI-68-398							
2-TS-68-398							
2-PI-68-301							
2-TI-68-309							
2-LI-68-300							

<sup>1</sup> These items may be initialed and dated by personnel performing the task. Instrumentation not required to be filled and vented may be identified as Not Applicable. (N/A)

<sup>2</sup> May be identified as Not Applicable (N/A) if instrument was not used to verify/record quantitative acceptance criteria data.

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 61 of 64</b>
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**Appendix D  
(Page 1 of 1)  
SWITCH LINEUP**

<b>UNID</b>	<b>NOMENCLATURE</b>	<b>SWITCH LOCATION</b>	<b>POSITION</b>	<b>VERIFIED BY INITIALS/DATE</b>
2-HS-68-22	RX FLANGE LEAK-OFF	2-M-5	OPEN	
2-HS-68-394	RX HEAD VENT ISOL	2-M-4	CLOSE	
2-HS-68-395	RX HEAD VENT ISOL	2-M-4	CLOSE	
2-HIC-68-396	RX HEAD VENT FLOW CONTROL	2-M-4	0%(CLOSED)	
2-HIC-68-397	RX HEAD VENT FLOW CONTROL	2-M-4	0%(CLOSED)	
2-SW-68-394	2-FSV-68-394 AND 397-A DISCONNECT SWITCH	2-JB-292-4968-A Vit Batt Bd Rm III (Col A10R,EI 757)	OFF	
2-SW-68-395	2-FSV-68-395 AND 396-B DISCONNECT SWITCH	2-JB-292-4974-B Vit Batt Bd Rm IV (Col A12R, EI 757)	OFF	

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 62 of 64</b>
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**Appendix E  
(Page 1 of 1)**

**ELECTRICAL LINEUP**

<b>UNID</b>	<b>NOMENCLATURE</b>	<b>LOCATION</b>	<b>POSITION</b>	<b>VERIFIED BY INITIALS/DATE</b>
0-BKR-236-3/310	PANEL 4 COLUMN A FUSE ASSEMBLY	125V Vital Battery Board III Panel 3, AUX 757	ON	
0-BKR-236-4/311	PANEL 4 COLUMN B FUSE ASSEMBLY	125V Vital Battery Board IV Panel 3, AUX 757	ON	
0-BKR-236-4/218	PANEL 4 COLUMN E FUSE ASSEMBLY	125V Vital Battery Board IV Panel 2, AUX 757	ON	
0-FU-236-4/E44	125V DC NOR SUPPLY 2-FCV-68-22	125V Vital Battery Board IV CKT E44, AUX 757	INSTALLED	
0-FU-236-3/A18	125V DC NOR SUPPLY 2-FSV-68-394	125V Vital Battery Board III CKT A18, AUX 757	INSTALLED	
0-FU-236-4/B17	125V DC NOR SUPPLY 2-FSV-68-395	125V Vital Battery Board IV CKT B17, AUX 757	INSTALLED	

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 63 of 64</b>
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**Appendix F  
(Page 1 of 2)  
VALVE LINEUP**

<b>VALVE</b>	<b>NOMENCLATURE</b>	<b>LOCATION</b>	<b>POSITION</b>	<b>VERIFIED BY INITIALS/DATE</b>
2-VTV-68-607	VENT	REACTOR BLDG el. 713 ROOM 110	OPEN	
2-FCV-68-22	RX FLANGE LEAKOFF	REACTOR BLDG el. 716 ROOM AC4	OPEN	
2-DRV-68-503	RX FLANGE LEAKOFF TELLTALE DRAIN	REACTOR BLDG el. 716 ROOM AC4	CLOSED	
2-LOV-68-501	RX FLANGE INNER LEAKOFF	REACTOR BLDG el. 702 ROOM AC4	OPEN	
2-LOV-68-502	RX FLANGE OUTER LEAKOFF	REACTOR BLDG el. 702 ROOM AC4	CLOSED	
2-FSV-68-394-A	RX HEAD VENT	REACTOR BLDG el. 702 ROOM LC	CLOSED	
2-FSV-68-395-B	RX HEAD VENT	REACTOR BLDG el. 702 ROOM LC	CLOSED	

<b>WBN Unit 2</b>	<b>Reactor Vessel Head Vent System</b>	<b>2-PTI-068-09 Rev. 0000 Page 64 of 64</b>
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**Appendix F  
(Page 2 of 2)  
VALVE LINEUP**

<b>VALVE</b>	<b>NOMENCLATURE</b>	<b>LOCATION</b>	<b>POSITION</b>	<b>VERIFIED BY INITIALS/DATE</b>
2-FSV-68-396-B	RX HEAD VENT	REACTOR BLDG el. 702 ROOM LC	CLOSED	
2-FSV-68-397-A	RX HEAD VENT	REACTOR BLDG el. 702 ROOM LC	CLOSED	
2-VTV-68-604	RX HEAD VENT LINE VENT	REACTOR BLDG el 755 AZ30	CLOSED	