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October 4, 2011

U.S. Nuclear Regulatory Commission  
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Watts Bar Nuclear Plant, Unit 2  
NRC Docket No. 50-391

**Subject: Watts Bar Nuclear Plant (WBN) Unit 2 - Submittal of Pre-op Test Instruction**

The following approved WBN Unit 2 Pre-op Test Instruction (PTI) is enclosed:

| PTI NUMBER    | Rev. | TITLE                           |
|---------------|------|---------------------------------|
| 2-PTI-030C-01 | 0    | Unit 2 Valve Vault Exhaust Fans |

If you have any questions, please contact Pete Olson at (423) 365-3294.

Respectfully,

David Stinson  
Watts Bar Unit 2 Vice President

Enclosure  
cc (Enclosure):

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U.S. Nuclear Regulatory Commission  
Page 2  
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**WATTS BAR NUCLEAR PLANT  
UNIT 2 PREOPERATIONAL TEST**

TITLE: Unit 2 Valve Vault Exhaust Fans

Instruction No: 2-PTI-030C-01

Revision No: 0000

PREPARED BY: Keith Jones *Keith Jones*  
PRINT NAME / SIGNATURE

DATE: 6-14-11

REVIEWED BY: Bethany Merriman *Bethany Merriman*  
PRINT NAME / SIGNATURE

DATE: 6-14-11

**INSTRUCTION APPROVAL**

JTG MEETING No: 2-11-017

JTG CHAIRMAN: *[Signature]*

DATE: 6/29/11

APPROVED BY: *[Signature]*

DATE: 6/29/11

PREOPERATIONAL STARTUP MANAGER

**TEST RESULTS APPROVAL**

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

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

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

APPROVED BY: \_\_\_\_\_

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

PREOPERATIONAL STARTUP MANAGER

|                       |  |   |
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**Revision Log**

| <b>Revision<br/>or Change<br/>Number</b> | <b>Effective<br/>Date</b> | <b>Affected<br/>Page<br/>Numbers</b> | <b>Description of Revision/Change</b> |
|--|---------------------------|--------------------------------------|---------------------------------------|
| 0000                                     | <i>9/29/11</i>            | ALL                                  | Initial issue                         |
|  |                           |                                      |                                       |

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## **1.0 INTRODUCTION**

### **1.1 Test Objectives**

Demonstrate the proper operation of the Unit 2 North and South Valve Vault Room (VVR) Exhaust, including fans, dampers, and verify the fans' air flow rates.

### **1.2 Scope**

This test demonstrates the operability of the Unit 2 North and South Valve Vault Room Exhaust Fans to ensure the following:

- A. The exhaust fans start and stop in response to room temperature.
- B. The exhaust fan dampers open and close in response to room temperature.
- C. The exhaust fans maintain desired air flows.

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## **2.0 REFERENCES**

### **2.1 Performance References**

- A. SMP-9.0, Conduct of Test
- B. GTM-05, HVAC Air Balance

### **2.2 Developmental References**

- A. Final Safety Analysis Report, Amendment 106
  - 1. Section 9.4.3.2.7, Auxiliary Building Miscellaneous Ventilation and Air Conditioning Systems
  - 2. Table 9.4-10, Failure Modes and Effects Analysis for Active Failures Subsystem: Main Steam Valve Vault Ventilation System
  - 3. Table 14.2-1, Sheets 36 & 37, Auxiliary Building Ventilation System
- B. Drawings
  - 1. Flow Diagrams
    - a. 2-47W866-10, Rev 1, HEATING AND VENTILATING AIR FLOW DRA 53395-13, Rev 0

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## **2.2 Developmental References (continued)**

### **2. Electrical**

- a. 2-45W760-30-24, Rev 0, VENTILATING SYSTEM SCHEMATIC DIGRAMS  
DRA 53290-056, Rev 1  
DRA 53290-072, Rev 1
- b. 2-45W756-3, Rev 0, 480V CONT & AUX BLDG VT BD 2A2-A  
DRA 53290-100, Rev 0
- c. 2-45W756-7, Rev 0, 480V CONT & AUX BLDG VT BD 2B2-B  
DRA 53290-107, Rev 0
- d. 45W2771-3, Rev 3, 480V CONT & AUX BLDG VENT BD 2A2-A  
CONNECTION DIAGRAMS
- e. 45W2773-3, Rev 2, 480V CONT & AUX BLDG VENT BD 2B2-B  
CONNECTION DIAGRAMS  
DRA 55233-118, Rev 0

### **3. Mechanical**

- a. 47W920-10, Rev 33, HEATING VENTILATING AND AIR  
CONDITIONING  
DRA 52332-017, Rev 1  
DRA 52332-018, Rev 1

### **4. Logic/Control**

- a. 2-47W610-30-6, Rev 0, CONTROL DIAGRAM, VENTILATION  
SYSTEM
- b. 2-47W611-30-6, Rev 0, LOGIC DIAGRAM, VENTILATION SYSTEM

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## **2.2 Developmental References (continued)**

### **C. Documents**

1. GTM-05, Rev 0, HVAC Air Balance
2. WBN2-30AB-4001, Rev 2, Auxiliary Building Heating, Ventilation, Air Conditioning System (30, 31, 44)
3. 2-TSD-30C-1, Rev 1, Auxiliary Building HVAC: North and South Main Steam Vault Exhaust Fans
4. G-37, Rev 4, Testing and Balancing of HVAC Systems During Installation, Modification, and Maintenance
5. SSD-1-TS-30-25, Rev 0, North Steam Valve Room On/Off Fan Switch  
To be verified against SSD-2-TS-30-25 [Later] in Appendix A
6. SSD-1-TS-30-26, Rev 0, South Steam Valve Room On/Off Fan Switch  
To be verified against SSD-2-TS-30-26 [Later] in Appendix A
7. SSD-1-TS-30-301, Rev 0, North Steam Valve Room On/Off Fan Switch  
To be verified against SSD-2-TS-30-301 [Later] in Appendix A
8. SSD-1-TS-30-302, Rev 0, South Steam Valve Room On/Off Fan Switch  
To be verified against SSD-2-TS-30-302 [Later] in Appendix A
9. SSD-1-LPT-30-312, Rev 0, North Steam Valve Room Damper Control  
To be verified against SSD-2-LPT-30-312 [Later] in Appendix A
10. SSD-1-LPT-30-313, Rev 1, South Steam Valve Room Damper Control  
To be verified against SSD-2-LPT-30-313 [Later] in Appendix A
11. SSD-1-LPT-30-314, Rev 0, North Steam Valve Room Damper Control  
To be verified against SSD-2-LPT-30-314 [Later] in Appendix A
12. SSD-1-LPT-30-315, Rev 1, South Steam Valve Room Damper Control  
To be verified against SSD-2-LPT-30-315 [Later] in Appendix A

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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 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. IF/THEN steps may be marked N/A if stated condition does not exist.
- E. 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.
- F. All terminal points and connections are to be considered energized. Instrumentation must be used to determine if the circuits are de-energized.
- G. Retermination of lifted leads requires that their restored bend radius is equal to or greater than the as-found condition.
- H. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- I. Problems identified during the test shall be annotated on the CTL, 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.
- J. Observe all Radiation Protection requirements when working in or near contaminated areas.
- K. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.

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**3.0 PRECAUTIONS AND LIMITATIONS (continued)**

- L. Vibration testing performed during the GTM-05, HVAC Air Balance for this system.
- M. During the performance of this instruction, visual observation of fans and ductwork is required. This includes steady-state and transient operations (fan starts and stops) with visual confirmation that vibration is not excessive.
- N. To verify that the transient conditions are not causing excessive vibration, observe components (duct, dampers, fans, etc) during the transient, to the extent practical. If not practical to observe during the transient, verify after the transient that no damage has occurred.
- O. If the vibration is determined to be excessive the Test Engineer shall initiate a Test Deficiency Notice.
- P. Portions of this test will simulate a high ambient room temperature using an electric heatgun. This activity shall be performed slowly and the heatgun held a reasonable distance from the temperature switch/controller sensing element to prevent damage to the sensing element.

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#### 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] **VERIFY** the test/performance copy of this Preoperational Test Instruction (PTI) is the current revision and as needed, each test person assisting in this test has the current revision. \_\_\_\_\_
- [2] **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. \_\_\_\_\_
- [3] **ENSURE** changes to the references listed on Appendix A, have been reviewed and determined NOT to adversely affect the test performance. \_\_\_\_\_
- [4] **VERIFY** current revision and change paper for referenced drawings have 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. \_\_\_\_\_

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**4.1 Preliminary Actions (continued)**

[5] **EVALUATE** open items in Watts Bar Integrated Task Equipment List (WITEL) **AND**

**ENSURE** that they will NOT adversely affect the test performance.

- A. Section 6.1 \_\_\_\_\_
- B. Section 6.2 \_\_\_\_\_
- C. Section 6.3 \_\_\_\_\_
- D. Section 6.4 \_\_\_\_\_
- E. Section 6.5 \_\_\_\_\_

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

- A. Section 6.1 \_\_\_\_\_
- B. Section 6.2 \_\_\_\_\_
- C. Section 6.3 \_\_\_\_\_
- D. Section 6.4 \_\_\_\_\_
- E. Section 6.5 \_\_\_\_\_

[7] **ENSURE** outstanding Design Change Notices (DCNs), Engineering Document Construction Releases (EDCRs), or Temporary Alterations (TAs) do NOT adversely impact testing, **AND**

**ATTACH** documentation of DCNs, EDCRs, and TAs that were reviewed to the data package.

- A. Section 6.1 \_\_\_\_\_
- B. Section 6.2 \_\_\_\_\_
- C. Section 6.3 \_\_\_\_\_
- D. Section 6.4 \_\_\_\_\_
- E. Section 6.5 \_\_\_\_\_

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**4.1 Preliminary Actions (continued)**

[8] **ENSURE** a review of outstanding Clearances has been coordinated with U2 Operations for impact to the test performance, **AND**

**RECORD** in Appendix B, Temporary Condition Log if required. \_\_\_\_\_

[9] **ENSURE** GTM-05, HVAC Air Balance, has been submitted to the JTG for concurrence that it adequately satisfies the requirements of this instruction.

JTG Meeting No: \_\_\_\_\_

[10] **ATTACH** completed GTM-05, HVAC Air Balance package for system 30C to this instruction. \_\_\_\_\_

[11] **VERIFY** plant instruments required for test performance have been placed in service and are within their calibration interval, **AND**

**RECORD** on Appendix C, Permanent Plant Instrumentation Log. \_\_\_\_\_

[12] **ENSURE** components contained within the boundaries of this test are under the jurisdictional control of Preoperational Startup Engineering (PSE) and/or Plant Operations. \_\_\_\_\_

[13] **REVIEW** preventive maintenance records for components within the scope of this test, **AND**

**VERIFY** no conditions exist that will impact test performance.

A. Section 6.1 \_\_\_\_\_

B. Section 6.2 \_\_\_\_\_

C. Section 6.3 \_\_\_\_\_

D. Section 6.4 \_\_\_\_\_

E. Section 6.5 \_\_\_\_\_

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**4.1 Preliminary Actions (continued)**

[14] **PERFORM** a pretest walkdown on equipment to be tested to ensure no conditions exist that will impact test performance.

A. Section 6.1

\_\_\_\_\_

B. Section 6.2

\_\_\_\_\_

C. Section 6.3

\_\_\_\_\_

D. Section 6.4

\_\_\_\_\_

E. Section 6.5

\_\_\_\_\_

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

\_\_\_\_\_

[16] **ENSURE** communications are available for areas where testing is to be conducted.

\_\_\_\_\_

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

- [1] **OBTAIN** the following Measuring and Test Equipment (M&TE) or equivalent, **AND**

**COMPLETE** the following table:

| DESCRIPTION        | MINIMUM RANGE | REQUIRED ACCURACY | M&TE ID NUMBER | CALIBRATION DUE DATE |
|--------------------|---------------|-------------------|----------------|----------------------|
| Pocket Thermometer | 35 to 120°F   | ±2°F              |                |                      |

- [2] **ENSURE** the following are available:

- A. Freezer bag (i.e. Ziploc) filled with ice and wrapped in a towel (to cool temperature elements) [2]
- B. Electric heat gun (to heat temperature elements)

- [3] **VERIFY** M&TE calibration due dates will support the completion of this test performance.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**4.3 Field Preparations**

- [1] **ENSURE** the following systems are operable and have been placed in service to the extent necessary to support this test.
  - A. System 32, Control Air \_\_\_\_\_
  - B. System 214, 480V C & A Building Vent Power \_\_\_\_\_
- [2] **ENSURE** system is configured in accordance with Appendix D, Electrical Lineup. \_\_\_\_\_
- [3] **ENSURE** any required ladders or scaffold required to access instruments in the Valve Vaults are in place.
  - A. Section 6.1 \_\_\_\_\_
  - B. Section 6.2 \_\_\_\_\_
  - C. Section 6.3 \_\_\_\_\_
  - D. Section 6.4 \_\_\_\_\_
- [4] **VERIFY** no other work or test activities are in progress in the North or South Valve Vault which could cause unexpected exhaust fan starts. \_\_\_\_\_

**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 Unit 2 Supervisor's (US/SRO) or Shift Manager's (SM) authorization.

\_\_\_\_\_  
Unit 2 US/SRO/SM Signature

\_\_\_\_\_  
Date

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## 5.0 ACCEPTANCE CRITERIA

|  | North Valve Vault Exhaust Fan 2A<br>(2-FAN-30-25) | North Valve Vault Backup Exhaust Fan<br>(2-FAN-30-301) | South Valve Vault Exhaust Fan 2B<br>(2-FAN-30-26) | South Valve Vault Backup Exhaust Fan<br>(2-FAN-30-302) |
|--|---|--|---|--|
| Manual and Automatic Controls operate correctly                              | Section 6.1                                       | Section 6.2  | Section 6.3                                       | Section 6.4  |
| Exhaust Fan starts and stops in response to room temperature                 | 6.1[12]<br>6.1[15]                                | 6.2[12]<br>6.2[15]                                     | 6.3[12]<br>6.3[15]                                | 6.4[12]<br>6.4[15]                                     |
| Fan Intake Damper opens and closes in response to room temperature           | (2-FCO-30-312)<br>6.1[11]<br>6.1[16]              | (2-FCO-30-314)<br>6.2[11]<br>6.2[16]                   | (2-FCO-30-313)<br>6.3[11]<br>6.3[16]              | (2-FCO-30-315)<br>6.4[11]<br>6.4[16]                   |
| Maintains design air flow of 15,000 CFM (14,250 - 16,500 CFM) <sup>1,2</sup> | 6.5[4]  | 6.5[5]   | 6.5[6]  | 6.5[7]   |

- 1 Air flow Acceptance Criteria has been adjusted to 95-110% of design/rated flow, as delineated in G-37, section 4.4.4.2.
- 2 This instruction does not perform any air flow measurements; these are done in GTM-05, HVAC Air Balance. The uncertainties associated with taking these measurements will be handled within GTM-05 and will not be calculated in this instruction.

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## 6.0 PERFORMANCE

### NOTES

- 1) Sections 6.1 through 6.5 may be performed in any order provided the steps within each Section are performed in the order written.
- 2) The following Temperature Controllers have a setpoint of 75°F. If necessary, a bag of ice wrapped in a towel may be used to cool the sensing bulb in order to close their respective dampers. Step [3] of Section 6.1 through 6.4 is to obtain a temperature estimate at the respective instruments' sensing elements to help determine if application of an ice bag is necessary.
  - 2-TC-30-312, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL
  - 2-TC-30-314, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL
  - 2-TC-30-313, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL
  - 2-TC-30-315, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL
- 3) The following Temperature Switches have a setpoint of 88°F and a resetpoint of 80°F. If necessary, a bag of ice wrapped in a towel may be used to cool the sensing bulb in order to stop their respective fans. Step [3] of Section 6.1 through 6.4 is to obtain a temperature estimate at the respective instruments' sensing elements to help determine if application of an ice bag is necessary.
  - 2-TS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A TEMP
  - 2-TS-30-301, NORTH MAIN STEAM VAULT BACKUP EXH FAN TEMP
  - 2-TS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B TEMP
  - 2-TS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXH FAN TEMP

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**6.1 2-FAN-30-25, North Valve Vault Exhaust Fan**

- [1] **VERIFY** prerequisites listed in Section 4.0 for Section 6.1 have been completed. \_\_\_\_\_
  
- [2] **ENSURE** the following Handswitches in 2-JB-292-4552, [A15X/729 (NVVR)] are in STOP:
  - A. 2-HS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A \_\_\_\_\_
  - B. 2-HS-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN \_\_\_\_\_
  
- [3] **MEASURE** and **RECORD** the ambient temperature near the following instruments in the North Valve Vault Room:
  - A. Near Temperature Switch 2-TS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A TEMP, [A13X/772 (NVVR)]  
 Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_
  
  - B. Near Temperature Controller 2-TC-30-312, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL, [A14X/773 (NVVR)]  
 Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_
  
- [4] **VERIFY** at Breaker 2-BKR-30-25, NORTH MS VAULT EXH FAN 2A, [C&A BUILDING VENT BD 2A2-A, Compartment 3A], Red Light is OFF. \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 19 of 40</b> |
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**6.1 2-FAN-30-25, North Valve Vault Exhaust Fan (continued)**

[5] **PLACE** Handswitch 2-HS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, to START. \_\_\_\_\_

[6] **IF** Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, [A14X/783 (NVVR)], STARTS, **THEN**  
**COOL** sensing bulb of Temperature Switch 2-TS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A TEMP. \_\_\_\_\_

[7] **VERIFY** Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, is OFF. \_\_\_\_\_

[8] **IF** Damper 2-FCO-30-312, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, [A14X/782 (NVVR)], is OPEN, **THEN**  
**COOL** sensing bulb of Temperature Controller 2-TC-30-312, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL. \_\_\_\_\_

[9] **VERIFY** Damper 2-FCO-30-312, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. \_\_\_\_\_

[10] **IF** ice bag(s) are applied to the following temperature instruments, **THEN**

**REMOVE** the bag(s) from instruments:

A. Temperature Switch 2-TS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A TEMP \_\_\_\_\_

B. Temperature Controller 2-TC-30-312, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 20 of 40</b> |
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**6.1 2-FAN-30-25, North Valve Vault Exhaust Fan (continued)**

**CAUTION**

The following two steps will simulate a high ambient room temperature using an electric heatgun. A thermometer held adjacent to the temperature element is to be used for estimation of when setpoint is approached and to ensure the instrument range is NOT exceeded. Hold the heatgun a reasonable distance from the temperature element and heat the element SLOWLY.

- Step 6.1[11]: Instrument range for Temperature Controller 2-TC-30-312 is 60 to 150°F, with a setpoint of 75°F.
- Step 6.1[12]: Instrument range for Temperature Switch 2-TS-30-25 is 55 to 175°F, with a setpoint of 88°F.

[11] **HEAT** sensing bulb of Temperature Controller 2-TC-30-312, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL to greater than 75°F, **UNTIL**

Damper 2-FCO-30-312, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is OPEN. **(Acc Crit)** \_\_\_\_\_

[12] **HEAT** sensing bulb of Temperature Switch 2-TS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A TEMP to greater than 88°F, **UNTIL**

Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, is ON. **(Acc Crit)** \_\_\_\_\_

[13] **VERIFY** at Breaker 2-BKR-30-25, NORTH MS VAULT EXH FAN 2A, Red Light is ON. \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 21 of 40</b> |
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**6.1 2-FAN-30-25, North Valve Vault Exhaust Fan (continued)**

[14] **MAINTAIN** Temperature Switch 2-TS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A TEMP above its setpoint temperature, **AND**

**PERFORM** the following:

[14.1] **PLACE** Handswitch 2-HS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, to STOP, **AND**

**VERIFY** Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, is OFF.

[14.2] **VERIFY** at Breaker 2-BKR-30-25, NORTH MS VAULT EXH FAN 2A, Red Light is OFF.

[14.3] **PLACE** Handswitch 2-HS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, to START, **AND**

**VERIFY** Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, is ON.

[15] **COOL** sensing bulb of Temperature Switch 2-TS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A TEMP, to less than 80°F, **UNTIL**

Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, is OFF. **(Acc Crit)**

[16] **COOL** sensing bulb of Temperature Controller 2-TC-30-312, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL, to less than 75°F, **UNTIL**

Damper 2-FCO-30-312, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. **(Acc Crit)**

[17] **PLACE** Handswitch 2-HS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A, to STOP.

[18] **VERIFY** the successful completion of Section 6.1. **(Acc Crit)**

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|-----------------------|--|--|
| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 22 of 40</b> |
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**6.2 2-FAN-30-301, North Valve Vault Backup Exhaust Fan**

- [1] **VERIFY** prerequisites listed in Section 4.0 for Section 6.2 have been completed. \_\_\_\_\_
  
- [2] **ENSURE** the following Handswitches in 2-JB-292-4552, [A13X/729 (NVVR)] are in STOP:
  - A. 2-HS-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A \_\_\_\_\_
  - B. 2-HS-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN \_\_\_\_\_
  
- [3] **MEASURE** and **RECORD** the ambient temperature near the following instruments in the North Valve Vault Room:
  - A. Near Temperature Switch 2-TS-30-301, NORTH MAIN STEAM VAULT BACKUP EXH FAN TEMP, [A14X/772 (NVVR)]  
Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_
  - B. Near Temperature Controller 2-TC-30-314, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL, [A14X/773 (NVVR)]  
Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_
  
- [4] **VERIFY** at Breaker 2-BKR-30-301, NORTH MS VAULT BACKUP EXH FAN, [C&A BUILDING VENT BD 2A2-A, Compartment 5A], Red Light is OFF. \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 23 of 40</b> |
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**6.2 2-FAN-30-301, North Valve Vault Backup Exhaust Fan  
(continued)**

[5] **PLACE** Handswitch 2-HS-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to START. \_\_\_\_\_

[6] **IF** Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, [A15X/783 (NVVR)], STARTS, **THEN**  
  
**COOL** sensing bulb of Temperature Switch 2-TS-30-301, NORTH MAIN STEAM VAULT BACKUP EXH FAN TEMP. \_\_\_\_\_

[7] **VERIFY** Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is OFF. \_\_\_\_\_

[8] **IF** Damper 2-FCO-30-314, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, [A15X/782 (NVVR)], is OPEN, **THEN**  
  
**COOL** sensing bulb of Temperature Controller 2-TC-30-314, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL. \_\_\_\_\_

[9] **VERIFY** Damper 2-FCO-30-314, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. \_\_\_\_\_

[10] **IF** ice bag(s) are applied to the following temperature instruments, **THEN**

**REMOVE** the ice bag(s) from instruments:

A. Temperature Switch 2-TS-30-301, NORTH MAIN STEAM VAULT BACKUP EXH FAN TEMP \_\_\_\_\_

B. Temperature Controller 2-TC-30-314, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL \_\_\_\_\_

|                       |  |  |
|-----------------------|--|--|
| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 24 of 40</b> |
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**6.2 2-FAN-30-301, North Valve Vault Backup Exhaust Fan  
(continued)**

**CAUTION**

The following two steps will simulate a high ambient room temperature using an electric heatgun. A thermometer held adjacent to the temperature element is to be used for estimation of when setpoint is approached and to ensure the instrument range is NOT exceeded. Hold the heatgun a reasonable distance from the temperature element and heat the element SLOWLY.

- Step 6.2[11]: Instrument range for Temperature Controller 2-TC-30-314 is 60 to 150°F, with a setpoint of 75°F.
- Step 6.2[12]: Instrument range for Temperature Switch 2-TS-30-301 is 55 to 175°F, with a setpoint of 88°F.

[11] **HEAT** sensing bulb of Temperature Controller 2-TC-30-314, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL to greater than 75°F, **UNTIL**

Damper 2-FCO-30-314, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is OPEN. **(Acc Crit)** \_\_\_\_\_

[12] **HEAT** sensing bulb of Temperature Switch 2-TS-30-301, NORTH MAIN STEAM VAULT BACKUP EXH FAN TEMP to greater than 88°F, **UNTIL**

Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is ON. **(Acc Crit)** \_\_\_\_\_

[13] **VERIFY** at Breaker 2-BKR-30-301, NORTH MS VAULT BACKUP EXH FAN, Red Light is ON. \_\_\_\_\_

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|-----------------------|--|--|
| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 25 of 40</b> |
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**6.2 2-FAN-30-301, North Valve Vault Backup Exhaust Fan  
(continued)**

[14] **MAINTAIN** Temperature Switch 2-TS-30-301, NORTH MAIN STEAM VAULT BACKUP EXH FAN TEMP above its setpoint temperature, **AND**

**PERFORM** the following:

[14.1] **PLACE** Handswitch 2-HS-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to STOP, **AND**

**VERIFY** Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is OFF.

[14.2] **VERIFY** at Breaker 2-BKR-30-301, NORTH MS VAULT BACKUP EXH FAN, Red Light is OFF.

[14.3] **PLACE** Handswitch 2-HS-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to START, **AND**

**VERIFY** Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is ON.

[15] **COOL** sensing bulb of Temperature Switch 2-TS-30-301, NORTH MAIN STEAM VAULT BACKUP EXH FAN TEMP, to less than 80°F, **UNTIL**

Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is OFF. **(Acc Crit)**

[16] **COOL** sensing bulb of Temperature Controller 2-TC-30-314, NORTH MAIN STEAM VAULT TEMPERATURE CONTROL, to less than 75°F, **UNTIL**

Damper 2-FCO-30-314, NORTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. **(Acc Crit)**

[17] **PLACE** Handswitch 2-HS-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to STOP.

[18] **VERIFY** the successful completion of Section 6.2. **(Acc Crit)**

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|-----------------------|--|--|
| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 26 of 40</b> |
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**6.3 2-FAN-30-26, South Valve Vault Exhaust Fan**

[1] **VERIFY** prerequisites listed in Section 4.0 for Section 6.3 have been completed. \_\_\_\_\_

[2] **ENSURE** the following Handswitches in 2-JB-292-4554, [A14U/729 (SVVR)] are in STOP:

A. 2-HS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B \_\_\_\_\_

B. 2-HS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN \_\_\_\_\_

[3] **MEASURE** and **RECORD** the ambient temperature near the following instruments in the South Valve Vault Room:

A. Near Temperature Switch 2-TS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B TEMP, [A14U/772 (SVVR)]

Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_

B. Near Temperature Controller 2-TC-30-313, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL, [A14U/773 (SVVR)]

Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_

[4] **VERIFY** at Breaker 2-BKR-30-26, SOUTH MS VAULT EXH FAN 2B, [C&A BUILDING VENT BD 2B2-B, Compartment 6B], Red Light is OFF. \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 27 of 40</b> |
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**6.3 2-FAN-30-26, South Valve Vault Exhaust Fan (continued)**

[5] **PLACE** Handswitch 2-HS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, to START. \_\_\_\_\_

[6] **IF** Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, [A14U/803 (SVVR)], STARTS, **THEN**  
**COOL** sensing bulb of Temperature Switch 2-TS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B TEMP. \_\_\_\_\_

[7] **VERIFY** Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, is OFF. \_\_\_\_\_

[8] **IF** Damper 2-FCO-30-313, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, [A14U/802 (SVVR)], is OPEN, **THEN**  
**COOL** sensing bulb of Temperature Controller 2-TC-30-313, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL. \_\_\_\_\_

[9] **VERIFY** Damper 2-FCO-30-313, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. \_\_\_\_\_

[10] **IF** ice bag(s) are applied to the following temperature instruments, **THEN**

**REMOVE** the ice bag(s) from instruments:

A. Temperature Switch 2-TS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B TEMP \_\_\_\_\_

B. Temperature Controller 2-TC-30-313, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 28 of 40</b> |
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**6.3 2-FAN-30-26, South Valve Vault Exhaust Fan (continued)**

**CAUTION**

The following two steps will simulate a high ambient room temperature using an electric heatgun. A thermometer held adjacent to the temperature element is to be used for estimation of when setpoint is approached and to ensure the instrument range is NOT exceeded. Hold the heatgun a reasonable distance from the temperature element and heat the element SLOWLY.

- Step 6.3[11]: Instrument range for Temperature Controller 2-TC-30-313 is 60 to 150°F, with a setpoint of 75°F.
- Step 6.3[12]: Instrument range for Temperature Switch 2-TS-30-26 is 55 to 175°F, with a setpoint of 88°F.

[11] **HEAT** sensing bulb of Temperature Controller 2-TC-30-313, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL to greater than 75°F, **UNTIL**

Damper 2-FCO-30-313, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is OPEN. **(Acc Crit)** \_\_\_\_\_

[12] **HEAT** sensing bulb of Temperature Switch 2-TS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B TEMP to greater than 88°F, **UNTIL**

Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, is ON. **(Acc Crit)** \_\_\_\_\_

[13] **VERIFY** at Breaker 2-BKR-30-26, SOUTH MS VAULT EXH FAN 2B, Red Light is ON. \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 29 of 40</b> |
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**6.3 2-FAN-30-26, South Valve Vault Exhaust Fan (continued)**

[14] **MAINTAIN** Temperature Switch 2-TS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B TEMP above its setpoint temperature, **AND**

**PERFORM** the following:

[14.1] **PLACE** Handswitch 2-HS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, to STOP, **AND**

**VERIFY** Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, is OFF.

[14.2] **VERIFY** at Breaker 2-BKR-30-26, SOUTH MS VAULT EXH FAN 2B, Red Light is OFF.

[14.3] **PLACE** Handswitch 2-HS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, to START, **AND**

**VERIFY** Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, is ON.

[15] **COOL** sensing bulb of Temperature Switch 2-TS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B TEMP, to less than 80°F, **UNTIL**

Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, is OFF. **(Acc Crit)**

[16] **COOL** sensing bulb of Temperature Controller 2-TC-30-313, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL, to less than 75°F, **UNTIL**

Damper 2-FCO-30-313, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. **(Acc Crit)**

[17] **PLACE** Handswitch 2-HS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, to STOP.

[18] **VERIFY** the successful completion of Section 6.3. **(Acc Crit)**

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|-----------------------|--|--|
| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 30 of 40</b> |
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**6.4 2-FAN-30-302, South Valve Vault Backup Exhaust Fan**

- [1] **VERIFY** prerequisites listed in Section 4.0 for Section 6.4 have been completed. \_\_\_\_\_
  
- [2] **ENSURE** the following Handswitches in 2-JB-292-4554, [A14U/729 (SVVR)] are in STOP:
  - A. 2-HS-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B \_\_\_\_\_
  - B. 2-HS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN \_\_\_\_\_
  
- [3] **MEASURE** and **RECORD** the ambient temperature near the following instruments in the South Valve Vault Room:
  - A. Near Temperature Switch 2-TS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXH FAN TEMP, [A14U/772 (SVVR)]  
 Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_
  
  - B. Near Temperature Controller 2-TC-30-315, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL, [A14U/773 (SVVR)]  
 Ambient Temperature: \_\_\_\_\_ °F \_\_\_\_\_
  
- [4] **VERIFY** at Breaker 2-BKR-30-302, SOUTH MS VAULT BACKUP EXH FAN, [C&A BUILDING VENT BD 2B2-B, Compartment 4B], Red Light is OFF. \_\_\_\_\_

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| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 31 of 40</b> |
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**6.4 2-FAN-30-302, South Valve Vault Backup Exhaust Fan  
(continued)**

[5] **PLACE** Handswitch 2-HS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to START. \_\_\_\_\_

[6] **IF** Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, [A14U/803 (SVVR)], STARTS, **THEN**  
  
**COOL** sensing bulb of Temperature Switch 2-TS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXH FAN TEMP. \_\_\_\_\_

[7] **VERIFY** Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is OFF. \_\_\_\_\_

[8] **IF** Damper 2-FCO-30-315, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, [A14U/802 (SVVR)], is OPEN, **THEN**  
  
**COOL** sensing bulb of Temperature Controller 2-TC-30-315, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL. \_\_\_\_\_

[9] **VERIFY** Damper 2-FCO-30-315, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. \_\_\_\_\_

[10] **IF** ice bag(s) are applied to the following temperature instruments, **THEN**

**REMOVE** the ice bag(s) from instruments:

A. Temperature Switch 2-TS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXH FAN TEMP \_\_\_\_\_

B. Temperature Controller 2-TC-30-315, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL \_\_\_\_\_

|                       |  |  |
|-----------------------|--|--|
| <b>WBN<br/>Unit 2</b> | <b>Unit 2 Valve Vault Exhaust Fans</b> | <b>2-PTI-030C-01<br/>Rev. 0000<br/>Page 32 of 40</b> |
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**6.4 2-FAN-30-302, South Valve Vault Backup Exhaust Fan  
(continued)**

**CAUTION**

The following two steps will simulate a high ambient room temperature using an electric heatgun. A thermometer held adjacent to the temperature element is to be used for estimation of when setpoint is approached and to ensure the instrument range is NOT exceeded. Hold the heatgun a reasonable distance from the temperature element and heat the element SLOWLY.

- Step 6.4[11]: Instrument range for Temperature Controller 2-TC-30-315 is 60 to 150°F, with a setpoint of 75°F.
- Step 6.4[12]: Instrument range for Temperature Switch 2-TS-30-302 is 55 to 175°F, with a setpoint of 88°F.

[11] **HEAT** sensing bulb of Temperature Controller 2-TC-30-315, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL to greater than 75°F, **AND**

**VERIFY** Damper 2-FCO-30-315, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is OPEN. **(Acc Crit)** \_\_\_\_\_

[12] **HEAT** sensing bulb of Temperature Switch 2-TS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXH FAN TEMP TEMP to greater than 88°F, **AND**

**VERIFY** Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is ON. **(Acc Crit)** \_\_\_\_\_

[13] **VERIFY** at Breaker 2-BKR-30-302, SOUTH MS VAULT BACKUP EXH FAN, Red Light is ON. \_\_\_\_\_

|                       |  |  |
|-----------------------|--|--|
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**6.4 2-FAN-30-302, South Valve Vault Backup Exhaust Fan  
(continued)**

[14] **MAINTAIN** Temperature Switch 2-TS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXH FAN TEMP above its setpoint temperature, **AND**

**PERFORM** the following:

[14.1] **PLACE** Handswitch 2-HS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to STOP, **AND**

**VERIFY** Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is OFF. \_\_\_\_\_

[14.2] **VERIFY** at Breaker 2-BKR-30-302, SOUTH MS VAULT BACKUP EXH FAN, Red Light is OFF. \_\_\_\_\_

[14.3] **PLACE** Handswitch 2-HS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to START, **AND**

**VERIFY** Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is ON. \_\_\_\_\_

[15] **COOL** sensing bulb of Temperature Switch 2-TS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXH FAN TEMP, to less than 80°F, **UNTIL**

Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, is OFF. **(Acc Crit)** \_\_\_\_\_

[16] **COOL** sensing bulb of Temperature Controller 2-TC-30-315, SOUTH MAIN STEAM VAULT TEMPERATURE CONTROL, to less than 75°F, **UNTIL**

Damper 2-FCO-30-315, SOUTH MAIN STEAM VAULT EXHAUST FAN INTAKE, is CLOSED. **(Acc Crit)** \_\_\_\_\_

[17] **PLACE** Handswitch 2-HS-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN, to STOP. \_\_\_\_\_

[18] **VERIFY** the successful completion of Section 6.4. **(Acc Crit)** \_\_\_\_\_

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**6.5 Valve Vault Exhaust Fan Air Flows**

- [1] **VERIFY** prerequisites listed in Section 4.0 for Section 6.5 have been completed. \_\_\_\_\_
  
- [2] **ENSURE** air flow measurements for the following fans have been performed using GTM-05, HVAC Air Balance:
  - A. Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A \_\_\_\_\_
  - B. Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN \_\_\_\_\_
  - C. Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B \_\_\_\_\_
  - D. Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN \_\_\_\_\_
  
- [3] **ENSURE** completed GTM-05 data sheets are attached to this instruction. \_\_\_\_\_

|                       |  |  |
|-----------------------|--|--|
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**6.5 Valve Vault Exhaust Fan Air Flows (continued)**

**NOTE**

The remaining steps in Section 6.5 record and verify data from the completed GTM-05, HVAC Air Balance Package for system 30C and may be completed in any order unless otherwise specified.

- [4] **RECORD** the air flow measurement for Fan 2-FAN-30-25, NORTH MAIN STEAM VAULT EXHAUST FAN 2A below, **AND**

**VERIFY** it meets acceptance criteria.

\_\_\_\_\_ CFM

**Acc Crit:** 14,250 - 16,500 CFM

- [5] **RECORD** the air flow measurement for Fan 2-FAN-30-301, NORTH MAIN STEAM VAULT BACKUP EXHAUST FAN below, **AND**

**VERIFY** it meets acceptance criteria.

\_\_\_\_\_ CFM

**Acc Crit:** 14,250 - 16,500 CFM

- [6] **RECORD** the air flow measurement for Fan 2-FAN-30-26, SOUTH MAIN STEAM VAULT EXHAUST FAN 2B, below, **AND**

**VERIFY** it meets acceptance criteria.

\_\_\_\_\_ CFM

**Acc Crit:** 14,250 - 16,500 CFM

- [7] **RECORD** the air flow measurement for Fan 2-FAN-30-302, SOUTH MAIN STEAM VAULT BACKUP EXHAUST FAN below, **AND**

**VERIFY** it meets acceptance criteria.

\_\_\_\_\_ CFM

**Acc Crit:** 14,250 - 16,500 CFM

|                       |  |  |
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**7.0 POST PERFORMANCE ACTIVITY**

- [1] **ENSURE** Sections 6.1 through 6.5 have been completed. \_\_\_\_\_
- [2] **ENSURE** any temporary conditions recorded in Appendix B, Temporary Condition Log, are addressed for necessary restoration as applicable (N/A if no conditions recorded). \_\_\_\_\_
- [3] **NOTIFY** the Unit 2 US/SRO/SM of the test completion and system alignment. \_\_\_\_\_

**8.0 RECORDS**

- A. QA Records
  - Completed Test Package
- B. Non-QA Records
  - None

|                       |  |  |
|-----------------------|--|--|
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**Appendix A  
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**TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW**

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|  |
|--|
| <b>NOTE</b>  |
| 1) Additional copies of this table may be made as necessary        |
| 2) Initial and date indicates review has been completed for impact |

| PROCEDURE/<br>INSTRUCTION  | REVISION/CHANGES | IMPACT<br>Yes/No | INITIAL AND DATE.<br>(N/A for no change) |
|--|------------------|------------------|--|
| GTM-05   |                  |                  |  |
| WBN2-30AB-4001   |                  |                  |  |
| 2-TSD-30C-1  |                  |                  |  |
| G-37   |                  |                  |  |
| FSAR<br>Section 9.4.3.2.7<br>Table 9.4-10<br>Table 14.2-1 Sh 36 & 37 |                  |                  |  |
| SSD-2-TS-30-25<br>(Review against SSD-1-TS-30-25)                    |                  |                  |  |
| SSD-2-TS-30-26<br>(Review against SSD-1-TS-30-26)                    |                  |                  |  |
| SSD-2-TS-30-301<br>(Review against SSD-1-TS-30-301)                  |                  |                  |  |
| SSD-2-TS-30-302<br>(Review against SSD-1-TS-30-302)                  |                  |                  |  |
| SSD-2-LPT-30-312<br>(Review against SSD-1-LPT-30-312)                |                  |                  |  |
| SSD-2-LPT-30-313<br>(Review against SSD-1-LPT-30-313)                |                  |                  |  |
| SSD-2-LPT-30-314<br>(Review against SSD-1-LPT-30-314)                |                  |                  |  |
| SSD-2-LPT-30-315<br>(Review against SSD-1-LPT-30-315)                |                  |                  |  |



|               |                                 |   |
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Appendix C  
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PERMANENT PLANT INSTRUMENTATION LOG

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| INSTRUMENT<br>OR<br>INSTRUMENT<br>LOOP # | CAL DUE<br>DATE | FILLED AND<br>VENTED <sup>1</sup> |           | PLACED IN<br>SERVICE <sup>1</sup> | USED FOR<br>QUANTITATIVE<br>ACC CRIT |    | POST-TEST<br>CAL DATE <sup>2</sup> | POST-TEST<br>CALIBRATION<br>ACCEPTABLE <sup>2</sup><br>INITIAL/DATE |
|--|-----------------|-----------------------------------|-----------|-----------------------------------|--------------------------------------|----|------------------------------------|---|
|  |                 | INIT/DATE                         | INIT/DATE |                                   | YES                                  | NO |                                    |   |
| 2-TS-30-25                               |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |
| 2-TS-30-301                              |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |
| 2-TS-30-26                               |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |
| 2-TS-30-302                              |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |
| 2-LPT-30-312                             |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |
| 2-LPT-30-313                             |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |
| 2-LPT-30-314                             |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |
| 2-LPT-30-315                             |                 | N/A                               |           |                                   |                                      | NO | N/A                                | N/A   |

<sup>1</sup> These items may be initiated 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.

|                       |  |  |
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**Appendix D  
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**ELECTRICAL LINEUP**

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Date \_\_\_\_\_

| <b>IDENTIFICATION</b>              | <b>LOCATION</b>                        | <b>NOMENCLATURE</b>                          | <b>POSITION</b> | <b>VERIFIED BY:<br/>INITIAL</b> |
|------------------------------------|--|--|-----------------|---------------------------------|
| <b>North Valve Vault</b>           |  |  |                 |                                 |
| 2-HS-30-25                         | 2-JB-292-4552<br>[A13X/729 (NVVR)]     | NORTH MAIN STEAM VAULT<br>EXHAUST FAN 2A     | STOP            |                                 |
| 2-HS-30-301                        | 2-JB-292-4552<br>[A13X/729 (NVVR)]     | NORTH MAIN STEAM VAULT<br>BACKUP EXHAUST FAN | STOP            |                                 |
| <b>South Valve Vault</b>           |  |  |                 |                                 |
| 2-HS-30-26                         | 2-JB-292-4554<br>[A14U/729 (SVVR)]     | SOUTH MAIN STEAM VAULT<br>EXHAUST FAN 2B     | STOP            |                                 |
| 2-HS-30-302                        | 2-JB-292-4554<br>[A14U/729 (SVVR)]     | SOUTH MAIN STEAM VAULT<br>BACKUP EXHAUST FAN | STOP            |                                 |
| <b>480V Shutdown Board Room 2A</b> |  |  |                 |                                 |
| 2-BKR-30-25                        | C&A BUILDING VENT BD 2A2-A<br>Compt 3A | NORTH MS VAULT EXH FAN 2A                    | ON              |                                 |
| 2-BKR-30-301                       | C&A BUILDING VENT BD 2A2-A<br>Compt 5A | NORTH MS VAULT<br>BACKUP EXH FAN             | ON              |                                 |
| <b>480V Shutdown Board Room 2B</b> |  |  |                 |                                 |
| 2-BKR-30-26                        | C&A BUILDING VENT BD 2B2-B<br>Compt 6B | SOUTH MS VAULT EXH FAN 2B                    | ON              |                                 |
| 2-BKR-30-302                       | C&A BUILDING VENT BD 2B2-B<br>Compt 4B | SOUTH MS VAULT<br>BACKUP EXH FAN             | ON              |                                 |