

Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

October 28, 2010

U.S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, D.C. 20555-0001

> 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-268-01	0	Permanent Hydrogen Mitigation System	

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

Sincerely,

Masoud Bajestani Watts Bar Unit 2 Vice President



U.S. Nuclear Regulatory Commission Page 2 October 28, 2010

cc (Enclosure):

U. S. Nuclear Regulatory Commission Region II Marquis One Tower 245 Peachtree Center Ave., NE Suite 1200 Atlanta, Georgia 30303-1257

NRC Resident Inspector Unit 2 Watts Bar Nuclear Plant 1260 Nuclear Plant Road Spring City, Tennessee 37381

WA	ATTS BAR NUCLEAR PLANT
	UNIT 2 STARTUP
TITLE: <u>Per</u>	manent Hydrogen Mitigation System
Instruction No:	
Revision No: _	0000
PREPARED BY: Regina Ballard	Ballarel DATE 8/12/10
	PRINT NAME/SIGNATURE
REVIEWED BY: <u>A. Blake Lowe</u>	DATE DATE DATE
ν.	
JTG MEETING NO' 2-10-01	10
JTG CHAIRMAN	DATE DATE
APPROVED BY:	DATE 10) Also
PREOPERATIONAL	STARTUP MANAGER
TEST RESULTS APPROVAL	
JTG MEETING NO:	
JTG CHAIRMAN:	DATE
APPROVED BY:	DATE
PREOPERATIONAL	STARTUP MANAGER

SMP-8.0, R4, Administration of Preoperational Test Instructions, Appendix B

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Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0000	10/19/10	ALL	INITIAL ISSUE

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1.0 INTRODUCTION

1.1 Test Objectives

The purpose of this test instruction is to verify that the Hydrogen Igniters will provide ignition sources of a specified minimum surface temperature without exceeding a designated maximum input power requirement by energizing each igniter circuit and verifying the voltage, current, and igniter surface temperature.

1.2 Scope

- A. This test demonstrates the functionality of the Permanent Hydrogen Mitigation system by ensuring the igniters reach a minimum surface temperature of 1700°F and the power requirement for each Hydrogen Igniter circuit does not exceed 663 watts.
- B. The 68 igniters are equally divided into 2 redundant groups, each with independent and separate controls, power supplies and locations.
 - 1. 38 Train A and Train B igniters located in the lower compartment of containment.
 - 2. 30 Train A and Train B igniters located throughout the upper compartment of containment and the upper plenum of the ice condenser.

Date

2.0 REFERENCES

- 2.1 **Performance References**
 - A. SMP-9.0, Conduct of Test
 - B. SPP-10.11, Control of Ignition Sources (Hot Work)

2.2 Developmental References

- A. Final Safety Analysis Report (FSAR)
 - 1. FSAR-Amendment 100
 - a. FSAR Table 14.2-1, Sheet 40 of 89, Combustible Gas Control Systems Test Summary
 - b. FSAR Chapter 6, Section 6.2.5A, Hydrogen Mitigation System

B. Drawings

1. Flow Diagrams

None

- 2. Electrical Drawings
 - a. 45W2770-7, Rev 4, Wiring Diagrams 480V Cont & Aux Bldg Vent Bd 2A1-A Connection Diagrams, AD DRA 52348-031, Rev 0 DRA 52348-032, Rev 0
 - b. 45B2770-9E, Rev 5, Wiring Diagrams 480V C & A Bldg Vt Bd 2A1-A, Conn Diag - Compt 9E, AD DRA 53290-010, Rev 0
 - c. 45W2772-7, Rev 4, Wiring Diagrams 480V Cont & Aux Bldg Vent Bd 2B1-B Connection Diagrams, AD DRA 52348-033, Rev 0 DRA 52348-034, Rev 0
 - d. 45B2772-12C, Rev 4, Wiring Diagrams 480V C & A Bldg Vt Bd 2B1-B, Conn Diag.- Compt 12C, AD DRA 53290-037, Rev 0

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2.2 **Developmental References (continued)**

- e. 45W2649-2, Rev 10, Wiring Diagrams Unit Control Board, Panel 2-M-10 Connection Diagrams, Sheet 2, AD
- 2-45W2656-4, Rev 0, Wiring Diagrams Unit Control Board, Panel f. 2-M-21 Connection Diagrams, Sheet 4, CC DRA 52315-077, Rev 0
- 2-45W756-2, Rev 0, Wiring Diagrams 480V Cont & Aux Bldg Vt Bd g. 2A1-A Single Line, Sheet 2, CC
- h. 2-45W756-6, Rev 0, Wiring Diagrams 480V Cont & Aux Bldg Vt Bd 2B1-B Single Line, Sheet 2, CC
- 2-45W760-268-1, Rev 0, Wiring Diagram Permanent Hydrogen i. Mitigation Sys Schematic Diagrams, CC DRA 52348-028, Rev 0 DRA 52348-029, Rev 0 DRA 52348-030, Rev 0 DRA 53290-050, Rev 0 DRA 53290-069, Rev 0
- 2-45B655-5C, Rev 0, Main Control Room Annunciator Inputs Window j. Box, XA-55-5C, CC
- k. 2-45B655-E5C, Rev 0, Electrical Annunciator Window Box XA-55-5C Engraving (Contract Number 75554B), CC
- 3. Mechanical

None

4. Logic/Control

None

- Other 5.
 - 45W872-2, Rev 23, Conduit & Grounding Floor El. 716.0 Ceiling Plan, a. AD DRA 52348-002, Rev 0
 - 45W872-8, Rev 27, Conduit & Grounding El. 716.0 Details, Sheet 6, b. AD DRA 52348-003

Data Package: Page ____ of ____ Date 2.2 **Developmental References (continued)** 45W872-9, Rev 33, Conduit & Grounding Floor El. 716.0 Details. **C.** Sheet 7, AD DRA 52348-004 45W872-10, Rev 36, Conduit & Grounding Floor El. 716.0 Details, d. Sheet 8, AD DRA 52348-005 e. 45W872-11, Rev 28, Conduit & Grounding Floor El. 716.0 Details, Sheet 9, AD DRA 52348-006 45W872-16, Rev 17, Conduit & Grounding Floor El. 716.0 Details, f. Sheet 14. AD DRA 52348-007 45W872-18, Rev 25, Conduit & Grounding Floor El. 716.0 Details, g. Sheet 16, AD DRA 52348-008 45W872-19, Rev 23, Conduit & Grounding Floor El. 716.0 Details, h. Sheet 17, AD DRA 52348-009 i. 45W874-2, Rev 22, Conduit & Grounding Floor El. 744.5 Ceiling Plan, AD DRA 52348-010 45W874-9, Rev 9, Conduit & Grounding Floor El. 744.5 Details, i. Sheet 7. AD DRA 52348-011 45W876-2, Rev 23, Conduit & Grounding El. 756.63 Ceiling Plan, AD k. DRA 52348-012 1. 45W876-4, Rev 18, Conduit & Grounding El. 756.63 Details, Sheet 2, AD DRA 52348-013

- m. 45W876-7, Rev 19, Conduit & Grounding El. 756.63 Details, Sheet 5 DRA 52348-014
- n. 45W876-8, Rev 13, Conduit & Grounding El. 756.63 Details, Sheet 6, AD DRA 52348-015

Data Package: Page of Date 2.2 **Developmental References (continued)** 45W876-9, Rev 6, Conduit & Grounding El. 756.63 Details. AD Ο. DRA 52348-016 45W876-10, Rev 7, Conduit & Grounding El. 756.63 Details, AD p. DRA 52348-017 45W876-11, Rev 4, Conduit & Grounding El. 756.63 Details, AD q. DRA 52348-018 45W876-12, Rev 7, Conduit & Grounding El. 756.63 Details, AD ٢. DRA 52348-019 45W878-2, Rev 8, Conduit & Grounding Dome Plan, AD S. DRA 52348-020 6. Vendor Drawings 193-3442-4, Rev D, Igniter Assembly, Tayco Engineering Inc., а. Contract 829810 F9275200001S, Rev 4, 3 Phase Line Regulator 3RTF-480/120-208b. 30. Power Conversion Products Inc. Contract 830802. 7003-51051-53, Rev B, Electrical Schematic 120V Distribution C. Cabinet, Nutherm International Inc, Contract 830137. C. Vendor Manuals WBN-VTM-N431-0090, Rev 5, Vendor Technical Manual for Nuthern 1. International Power Distribution Panels, Contract Number 81-827910 2. WBN-VTM-P319-0010, Rev 0, Vendor Technical Manual for Power Conversion Products, Inc. Three-Phase Regulating Transformers, Contract Number 82K05-00830802 D. Documents 1. 2-TSD-268-01, Rev 0, Permanent Hydrogen Mitigation System Test Scoping Document

- 2. WBN2-83-4001, Rev 0, System Description for Combustible Gas Control System
- 3. L44850214800, Letter to NRC from TVA concerning surveillance requirements for demonstrating the functionality of hydrogen igniters

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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. Component tags and labels may differ slightly (abbreviations, punctuation, letter case, etc.) from the description given in this test. If this situation occurs, it shall NOT be considered a test deficiency or procedure deviation. It shall be documented in the CTL and reconciled by way of a plant labeling request or drawing discrepancy or single-line date typo change in the procedure as appropriate.
- 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 terminal points and connection are to be considered energized. Instrumentation must be used to determine if the circuits are de-energized.
- F. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- G. 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.
- H. Observe all Radiation Protection (RP) requirements when working in or near radiological areas.
- 1. Figures 1 through 5 provide locations of the 68 hydrogen igniters in the containment. The figures may be marked up during test conduct, as required. For example, as each igniter is located and the required temperature measurement is completed, place a check mark at the igniter location symbol.
- Ensure no adverse impact to the operation of Unit 1 structures, systems or J. components.

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4.0 PREREQUISITE ACTIONS

NOTE

Preliminary action steps may be performed in any order with Test Directors approval.

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 "Test Procedure and Instruction Reference Review", Appendix A, have been reviewed, and determined NOT to adversely affect the test performance.
- [4] **VERIFY** current revision 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.

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

ENSURE that they will NOT adversely affect the test performance.

- [6] **ENSURE** required Component Testing has been completed prior to start of test.
- [7] **ENSURE** outstanding Design Change Notices (DCN's), Engineering Document Construction Release (EDCR's) or Temporary Alterations (TA's) do NOT adversely impact testing.

Data Package: Page of Date 4.1 **Preliminary Actions (continued)** [8] **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. [9] 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 in SMP-9.0. Subsection 6.1 Α. Β. Subsection 6.2 C. Subsection 6.3 **VERIFY** Measuring and Test Equipment (M&TE) calibration [10] due dates will support the completion of this test performance. Subsection 6.1 Α. Subsection 6.2 Β. C. Subsection 6.3 VERIFY the following system is operational and have been [11] placed in service to the extent necessary to perform this test: System 214, 480V Control & Aux (C&A) Bldg Vent Boards Α. 2-MCC-214-A1-A (Board 2A1-A), 2-BKR-214-B1/9E-B В. System 214, 480V Control & Aux (C&A) Bldg Vent Boards 2-MCC-214-B1-B (Board 2B1-B), 2-BKR-214-B1/12C-B [12] **ENSURE** components contained within the boundaries of this test are under the jurisdictional control of Preoperational Startup Engineering (PSE) or Plant Operations.

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4.1 **Preliminary Actions (continued)**

[13] **VERIFY** System 55, Annunciator and Sequential Events Recording System, TBK switches and the Master switch associated with the following annunciator window inputs are in the ON position. AND

VERIFY the annunciator window, 2-XA-55-5C/102-C, software inputs are ENABLED.

NOTE

Inspect for combustibles within two feet of igniters during pretest walk down. Line of sight view of each igniter (profile or oblique) should be noted as required to facilitate thermography measurements as well as requirements for ladders and/or scaffolding.

- [14] **PERFORM** a pretest walkdown on equipment to be tested to ensure no conditions exist that will impact test performance.
 - Subsection 6.1 Α.
 - B. Subsection 6.2
 - C. Subsection 6.3
- **ENSURE** a Hot Work Permit which allows energization of the [15] Hydrogen Igniters in the Containment has been obtained. (See Control of Ignition Sources (Hot Work), SPP 10.11)
- [16] **CONDUCT** a pretest briefing with Test and Operations personnel in accordance with SMP-9.0.
- [17] **ENSURE** that communications are available for areas where testing is to be conducted.

Date _____

4.2 Special Tools, Measuring and Test Equipment (M&TE), Parts, and Supplies

- [1] **ENSURE** the following are available:
 - 2 Jumpers
- [2] **ENSURE** following M&TE or equivalent is available and within their calibration due dates, **AND**

RECORD the M&TE data on SMP-9.0, Measuring and Test Equipment (M&TE) Log.

- Voltmeter, Minimum Range 0 to 150 Vac, Required Accuracy ±0.5 Volts.
- Optical/Infrared Pyrometer, Mikron Model M90V or Equivalent, Minimum Range 1500° to 2000°F, Required Accuracy ±34°F.
- Optical/Infrared Pyrometer, Minimum Range 1420° to 2500°F, Required Accuracy ±34°F.
- Clamp-on Ammeter, Minimum Range 0 to 10 amperes, Required Accuracy ±0.25 amperes.

Date _____

4.3 Field Preparations

- [1] **ENSURE** the following Handswitches at MCR Panel 2-M-10 are in the OFF position:
 - A. Handswitch 2-HS-268-73, H2 IGNITERS GROUP A.
 - B. Handswitch 2-HS-268-74, H2 IGNITERS GROUP B.
- [2] **VERIFY** that required ladders and/or scaffolding are installed (if required) to facilitate thermography measurements.
 - A. Subsection 6.2
 - B. Subsection 6.3
- [3] **VERIFY** that each Hydrogen Igniters has been energized continuously for a period of at least 24 hours and allowed to cool to ambient temperature following installation to ensure that any protective factory coating has been burned off the igniters, **AND**

RECORD method of this verification in the Chronological Test Log. (Subsections 6.2 & 6.3)

Date _____

4.4 Approvals and Notifications

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

Preoperational Startup Manager	
Signature	

Date

[2] **OBTAIN** Shift Manager's (SM) authorization.

SM Signature

Date

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5.0 ACCEPTANCE CRITERIA

NOTE					
Acceptance criteria values of 1325 Watts and 1700°F as listed in the Permanent Hydrogen Mitigation System Test Scoping Document, 2-TSD-268-01, are adjusted to account for M&TE tolerances.					
[1]	Each igniter maintains a minimum surface temperature of 1734°F while not exceeding 1275 Watts, the maximum power requirement for two igniters.				
	A.	Train	A Igniters:	Steps 6.2[64] and 6.2[65]	
	В.	Train	B Igniters:	Steps 6.3[64] and 6.3[65]	
[2]	Rec	ord the	voltage and	current for each circuit at the	e Distribution Panels:
	A.	Train	A Distribution	Panel, 2-DPL-268-1-A:	Step 6.2[29]
· .	В.	Train	B Distribution	Panel, 2-DPL-268-2-B:	Step 6.3[29]
[3]	Eac	h train	can be energi	ized from the Main Control I	Room.
	A.	Train	A Igniters	6.1[165.2]	·
	В.	Train	B Igniters	6.1[169.2]	
[4]	Indi Con	cating itrol Ro	lights indicate	the correct status of each i	gniter train in the Main
	Α.	Train	A Igniters	Steps 6.1[164] and 6.1[165	5.1]
	В.	Train	B Igniters	Steps 6.1[168] and 6.1[169	9.1]
[5]	Ann	unciat	or "PHMS PW	R DIST. PNL. A/B UV/BKR	TRIP" alarms on:
[5.	1]	Han	dswitch in "ON	N" and undervoltage.	
		A.	Train A:	Steps 6.1[46.1] and 6.1[46	.2]
		B.	Train B:	Steps 6.1[48.1] and 6.1[48	.2]

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5.0 ACCEPTANCE CRITERIA (continued)

- [5.2] Distribution Panel supply circuit breaker open.
 - A. Train A Distribution panel, 2-DPL-268-1-A, supply breaker, 2-BRK-268-1/M1-A: Step 6.1[122]
 - B. Train B Distribution panel 2-DPL-268-2-B, supply breaker, 2-BKR-268-2/M1-B: Step 6.1[124]
- [5.3] Distribution Panel output circuit breaker 1 through 18 trip.

[5.3.1] Train A - Distribution panel, 2-DPL-268-1-A, output breakers:

Α.	2-BKR-268-1/1-A:	Step 6.1[50]
В.	2-BKR-268-1/2-A:	Step 6.1[52]
C.	2-BKR-268-1/3-A:	Step 6.1[54]
D.	2-BKR-268-1/4-A:	Step 6.1[56]
E.	2-BKR-268-1/5-A:	Step 6.1[58]
F.	2-BKR-268-1/6-A:	Step 6.1[60]
G.	2-BKR-268-1/7-A:	Step 6.1[62]
H.	2-BKR-268-1/8-A:	Step 6.1[64]
۱.	2-BKR-268-1/9-A:	Step 6.1[66]
l. J.	2-BKR-268-1/9-A: 2-BKR-268-1/10-A:	Step 6.1[66] Step 6.1[68]
ί. J. K.	2-BKR-268-1/9-A: 2-BKR-268-1/10-A: 2-BKR-268-1/11-A:	Step 6.1[66] Step 6.1[68] Step 6.1[70]
l. J. K. L.	2-BKR-268-1/9-A: 2-BKR-268-1/10-A: 2-BKR-268-1/11-A: 2-BKR-268-1/12-A:	Step 6.1[66] Step 6.1[68] Step 6.1[70] Step 6.1[72]
і. Ј. К. L. М.	2-BKR-268-1/9-A: 2-BKR-268-1/10-A: 2-BKR-268-1/11-A: 2-BKR-268-1/12-A: 2-BKR-268-1/13-A:	Step 6.1[66] Step 6.1[68] Step 6.1[70] Step 6.1[72] Step 6.1[74]
I. J. К. L. М.	2-BKR-268-1/9-A: 2-BKR-268-1/10-A: 2-BKR-268-1/11-A: 2-BKR-268-1/12-A: 2-BKR-268-1/13-A:	Step 6.1[66] Step 6.1[68] Step 6.1[70] Step 6.1[72] Step 6.1[74] Step 6.1[76]
Ι. J. K. L. Μ. Ν.	2-BKR-268-1/9-A: 2-BKR-268-1/10-A: 2-BKR-268-1/11-A: 2-BKR-268-1/12-A: 2-BKR-268-1/13-A: 2-BKR-268-1/14-A:	Step 6.1[66] Step 6.1[68] Step 6.1[70] Step 6.1[72] Step 6.1[74] Step 6.1[76] Step 6.1[78]

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5.0	ACCEPTA	NCE	CRIT	ERIA (continued)		
	_		Q.	2-BKR-268-1/17-A:	Step 6.1	[82]
			R.	2-BKR-268-1/18-A:	Step 6.1	[84]
	[5.3	3.2]	Trai	n B - Distribution panel	I, 2-DPL-2	268-2-B, output breakers:
			Ά.	2-BKR-268-2/1-B:	Step 6.1	[86]
			В.	2-BKR-268-2/2-B:	6.1[88]	
			C.	2-BKR-268-2/3-B:	6.1[90]	
			D.	2-BKR-268-2/4-B:	6.1[92]	
			Ε.	2-BKR-268-2/5-B:	6.1[94]	
			F.	2-BKR-268-2/6-B:	6.1[96]	
			G.	2-BKR-268-2/7-B:	6.1[98]	
			Н.	2-BKR-268-2/8-B:	6.1[100]	!
			١.	2-BKR-268-2/9-B:	6.1[102]	
			J.	2-BKR-268-2/10-B:	6.1[104]	
			К.	2-BKR-268-2/11-B:	6.1[106]	· ·
			L.	2-BKR-268-2/12-B:	6.1[108]	Ľ
			М.	2-BKR-268-2/13-B:	6.1[110]	
			N.	2-BKR-268-2/14-B:	6.1[112]	l
			0.	2-BKR-268-2/15-B:	6.1[114]	l .
			Ρ.	2-BKR-268-2/16-B:	6.1[116]	I
			Q.	2-BKR-268-2/17-B:	6.1[118]	1
			R.	2-BKR-268-2/18-B:	6.1[120]	1

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6.0	PERI	FORMANCE	
6.1	PHM	S Control and Alarm Function Tests	
-	[1]	ENSURE precautions and limitations in Section reviewed.	on 3.0 have been
	[2]	VERIFY prerequisites listed in Section 4.0 for have been completed.	Subsection 6.1
	[3]	ENSURE the following PHMS Supply Breake 2-BKR-268-1-A, PERMANENT HYDROGEN SYSTEMS 2-DXF-268-1-A, at Compt 9E of B the OFF position.	r, Breaker MITIGATION oard 2A1-A, is in
			CV
	[4]	ENSURE the following PHMS Supply Breake 2-BKR-268-2-B, PERMANENT HYDROGEN SYSTEM 2-DXF-268-2-B, at Compt 12C of B the OFF position.	r, Breaker MITIGATION oard 2B-B, is in
			CV

NOTE

Hydrogen Mitigation Distribution Panel 2-DPL-268-1-A is located at COL A12V, EL 782'.

[5] **ENSURE** Breaker 2-BKR-268-1/1-A, Breaker 1 at Hydrogen Mitigation Distribution Panel 2-DPL-268-1-A, is in the ON position.

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6.1	PHMS	Control and Alarm Function Tests (continue	ed)
	[6]	ENSURE Breaker 2-BKR-268-1/2-A, Breaker 2 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	e at Hydrogen in the ON
	[7]	ENSURE Breaker 2-BKR-268-1/3-A, Breaker 3 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	CV B at Hydrogen in the ON
	[8]	ENSURE Breaker 2-BKR-268-1/4-A, Breaker 4 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	CV at Hydrogen in the ON
	[9]	ENSURE Breaker 2-BKR-268-1/5-A, Breaker 5 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	CV 5 at Hydrogen s in the ON
	[10]	ENSURE Breaker 2-BKR-268-1/6-A, Breaker 6 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	CV 6 at Hydrogen s in the ON
÷	[11]	ENSURE Breaker 2-BKR-268-1/7-A, Breaker 7 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	CV 7 at Hydrogen s in the ON

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 21 of 123
	Data	Package: Page of	Date
6.1	PHMS	Control and Alarm Function Tests (continue	ed)
	[12]	ENSURE Breaker 2-BKR-268-1/8-A, Breaker 8 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	at Hydrogen in the ON
			CV
	[13]	ENSURE Breaker 2-BKR-268-1/9-A, Breaker 9 Mitigation Distribution Panel 2-DPL-268-1-A, is position.	at Hydrogen in the ON
			CV
	[14]	ENSURE Breaker 2-BKR-268-1/10-A, Breaker Mitigation Distribution Panel 2-DPL-268-1-A, is position.	10 at Hydrogen in the ON
			CV
	[15]	ENSURE Breaker 2-BKR-268-1/11-A, Breaker Mitigation Distribution Panel 2-DPL-268-1-A, is position.	11 at Hydrogen in the ON
	[16]	ENSURE Breaker 2-BKR-268-1/12-A, Breaker Mitigation Distribution Panel 2-DPL-268-1-A, is position.	12 at Hydrogen s in the ON
	[17]	ENSURE Breaker 2-BKR-268-1/13-A, Breaker Mitigation Distribution Panel 2-DPL-268-1-A, is position.	13 at Hydrogen s in the ON

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	WBN Unit 2	PER	MANENT	HYDROG SYSTEM	EN MITIGATIC	0N 2-PTI-268-0 Rev. 0000 Page 22 of 1	1	
	Data P	ackage:	Page	of	:		Date _	
6.1	PHMS	Control	and Alarr	n Functio	n Tests (conti	nued)		
	[18]	ENSURI Mitigatio position.	E Breaker : n Distributi	2-BKR-268 ion Panel 2	-1/14-A, Break 2-DPL-268-1-A	ker 14 at Hydrogo , is in the ON	en -	
				. •				CV
	[19]	ENSURI Mitigatio position.	E Breaker : n Distribut	2-BKR-268 ion Panel 2	-1/15-A, Break 2-DPL-268-1-A	ker 15 at Hydrogo , is in the ON	en _	
								CV
	[20]	ENSURI Mitigatio position.	E Breaker : n Distribut	2-BKR-268 ion Panel 2	9-1/16-A, Break 2-DPL-268-1-A	ker 16 at Hydrog , is in the ON	en	
							_	CV
	[21]	ENSUR Mitigatio position.	E Breaker n Distribut	2-BKR-268 ion Panel 2	8-1/17-A, Break 2-DPL-268-1-A	ker 17 at Hydrog , is in the ON	en	
							_	CV
	[22]	ENSUR Mitigatio position	E Breaker In Distribut	2-BKR-268 ion Panel 2	8-1/18-A, Break 2-DPL-268-1-A	ker 18 at Hydrog , is in the ON	en -	
							_	CV

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 23 of 123	
	Data	Package: Page of	Date _	
6.1	PHMS	S Control and Alarm Function Tests (continue	ed)	
	, <u>, , , , , , , , , , , , , , , , </u>	NOTE		
Hydro	ogen Mit	igation Distribution Panel 2-DPL-268-2-B is loca	ted at COL A12V, EL	782'.
	[23]	ENSURE Breaker 2-BKR-268-2/1-B, Breaker 1 Mitigation Distribution Panel 2-DPL-268-2-B, is position.	at Hydrogen in the ON 	
	[24]	ENSURE Breaker 2-BKR-268-2/2-B, Breaker 2 Mitigation Distribution Panel 2-DPL-268-2-B, is position.	at Hydrogen in the ON	CV
	[25]	ENSURE Breaker 2-BKR-268-2/3-B, Breaker 3 Mitigation Distribution Panel 2-DPL-268-2-B, is position.	at Hydrogen in the ON	CV
	[26]	ENSURE Breaker 2-BKR-268-2/4-B, Breaker 4 Mitigation Distribution Panel 2-DPL-268-2-B, is position.	at Hydrogen in the ON	CV
	[27]	ENSURE Breaker 2-BKR-268-2/5-B, Breaker 5 Mitigation Distribution Panel 2-DPL-268-2-B, is position.	at Hydrogen in the ON	CV
			_	CV

	WBN Unit 2		PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 24 of 12	23
	Data	Pacl	kage: Page of		Date
6.1	PHMS	6 Co	ntrol and Alarm Function Tests (continue	ed)	
	[28]	EN Miti pos	SURE Breaker 2-BKR-268-2/6-B, Breaker 6 igation Distribution Panel 2-DPL-268-2-B, is sition.	at Hydrogen in the ON	
					CV
	[29]	EN Miti pos	SURE Breaker 2-BKR-268-2/7-B, Breaker 7 igation Distribution Panel 2-DPL-268-2-B, is sition.	at Hydrogen in the ON	
					CV
	[30]	EN Miti pos	SURE Breaker 2-BKR-268-2/8-B, Breaker 8 igation Distribution Panel 2-DPL-268-2-B, is sition.	at Hydrogen in the ON	
	· .				CV
	[31]	EN Mit pos	SURE Breaker 2-BKR-268-2/9-B, Breaker 9 igation Distribution Panel 2-DPL-268-2-B, is sition.	at Hydrogen in the ON	
					CV
	[32]	EN Mit pos	SURE Breaker 2-BKR-268-2/10-B, Breaker igation Distribution Panel 2-DPL-268-2-B, is sition.	10 at Hydroge in the ON	n
					CV
	[33]	EN Mit po:	ISURE Breaker 2-BKR-268-2/11-B, Breaker ligation Distribution Panel 2-DPL-268-2-B, is sition.	11 at Hydroge in the ON	en

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION 2-PTI-2 SYSTEM Rev. 0 Page 2	268-01 000 25 of 123
	Data	Package: Page of	Date
6.1	PHM	S Control and Alarm Function Tests (continued)	
	[34]	ENSURE Breaker 2-BKR-268-2/12-B, Breaker 12 at H Mitigation Distribution Panel 2-DPL-268-2-B, is in the C position.	ydrogen DN
	[35]	ENSURE Breaker 2-BKR-268-2/13-B, Breaker 13 at H	vdrogen
		Mitigation Distribution Panel 2-DPL-268-2-B, is in the C position.	MC
			CV
	[36]	ENSURE Breaker 2-BKR-268-2/14-B, Breaker 14 at H Mitigation Distribution Panel 2-DPL-268-2-B, is in the 0 position.	lydrogen ON
			CV
	[37]	ENSURE Breaker 2-BKR-268-2/15-B, Breaker 15 at H Mitigation Distribution Panel 2-DPL-268-2-B, is in the 0 position.	lydrogen ON
			CV
	[38]	ENSURE Breaker 2-BKR-268-2/16-B, Breaker 16 at H Mitigation Distribution Panel 2-DPL-268-2-B, is in the 0 position.	lydrogen ON
			CV
	[39]	ENSURE Breaker 2-BKR-268-2/17-B, Breaker 17 at H Mitigation Distribution Panel 2-DPL-268-2-B, is in the position.	lydrogen ON

	WBN Unit 2		PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 26 of 12	3
	Data	Pac	kage: Page of		Date
6.1	PHM	S Co	entrol and Alarm Function Tests (continue	ed)	
	[40]	EN Mit pos	SURE Breaker 2-BKR-268-2/18-B, Breaker igation Distribution Panel 2-DPL-268-2-B, is sition.	18 at Hydroger in the ON	
					CV
	[41]	EN CIF 2-D	SURE AC POWER Breaker CB1, 2-BKR-26 RCUIT BREAKER PHMS GROUP A, at Pan DXF-268-1-A, is in the ON position.	8-1A-A, AC el	
			· · · · · · · · · · · · · · · · · · ·		CV
	[42]	EN CIF 2-D	SURE AC POWER Breaker CB1, 2-BKR-26 RCUIT BREAKER PHMS GROUP B, at Pan DXF-268-2-B, is in the ON position.	8-2A-B, AC el	
					CV
	[43]	EN Bre Pa	SURE Hydrogen Mitigation Distribution Pan eaker, 2-BKR-268-1/M1-A, GROUP A PHMS nel 2-DPL-268-1-A, is in the ON position.	el MAIN S ISOL BKR, at	
					CV
	[44]	EN Bre Pa	SURE Hydrogen Mitigation Distribution Pan eaker, 2-BKR-268-2/M1-B, GROUP B PHMS nel 2-DPL-268-2-B, is in the ON position.	el MAIN S ISOL BKR, at	
·					CV

NOTE

Annunciator Window, 2-XA-55-5C/102-C, PHMS PNL A/B UV/BKR TRIP is located in the Main Control Room on panel 2-M-5.

[45] **VERIFY** 2-XA-55-5C/102–C, PHMS PWR DIST PNL A/B UV/BKR TRIP, is CLEAR.

WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 27 of 123
Data Pac	kage: Page of	Date
6.1 PHMS Co	ontrol and Alarm Function Tests (continue	ed)
[46] PL the 9E	ACE and HOLD handheld jumper across po auxiliary contact at 480V C&A Bldg Vent Bo	oints 6 and 7 of d 2A1-A, Compt
		CV
[46.1]	VERIFY 2-XA-55-5C/102-C, PHMS PWF UV/BKR TRIP, ALARMS. (Acc Crit)	R DIST PNL A/B
[46.2]	VERIFY Unit 2 Event Display Monitor inc PHMS POWER DIST PNL A UV/BKR TF ALARM (Red). (Acc Crit)	licates 102-C RIPPED is in
[47] R E au	EMOVE handheld jumper across points 6 and xiliary contact at 480V C&A Bldg Vent Bd 2A	d 7 of the \1-A, Compt 9E.
		CV
[47.1]	VERIFY 2-XA-55-5C/102-C, PHMS PWF UV/BKR TRIP, CLEARS.	R DIST PNL A/B
[47.2]	VERIFY Unit 2 Event Display Monitor inc PHMS POWER DIST PNL A UV/BKR TF NORMAL (Blue).	dicates 102-C RIPPED is
[48] PL the 12	ACE and HOLD handheid jumper across po e auxiliary contact at 480V C&A Bldg Vent B C.	bints 6 and 7 of d 2B1-B, Compt
		CV
[48.1]	VERIFY 2-XA-55-5C/102-C, PHMS PWF UV/BKR TRIP, ALARMS. (Acc Crit)	R DIST PNL A/B
[48.2]	VERIFY Unit 2 Event Display Monitor ind PHMS POWER DIST PNL B UV/BKR TI ALARM (Red). (Acc Crit)	dicates 102-C RIPPED is in

	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 28 of 123	
Data Pac	kage: Page of	Date	9
6.1 PHMS Co	entrol and Alarm Function Tests (continue	ed)	
[49] RE au 120	MOVE handheld jumper across points 6 and ciliary contact at 480V C&A Bldg Vent Bd 2B C, Breaker 2-BKR-268-2-B.	d 7 of the 1-B, Compt	
			CV
[49.1]	VERIFY 2-XA-55-5C/102-C, PHMS PWR W/BKR TRIP, CLEARS.	R DIST PNL A/B	a r-114-14 11
[49.2]	VERIFY Unit 2 Event Display Monitor ind PHMS POWER DIST PNL B UV/BKR TF NORMAL (Blue).	licates 102-C RIPPED is	
	NOTES		
1) Section 6.1[8 RESET.	0] to 6.1[85] verifies the breakers at Panel 2	P-DPL-268-1-A TRI	^o and
2) Each of the f breaker whe	ollowing breakers is equipped with a Red TF n turned clockwise.	RIP Button which tri	ps the
[50] TR			
2-L	IP Breaker 2-BKR-268-1/1-A, (Breaker 1), a DPL-268-1-A, by way of Red TRIP Button.(t Panel Acc Crit)	
2-1	IP Breaker 2-BKR-268-1/1-A, (Breaker 1), a DPL-268-1-A, by way of Red TRIP Button. (<i>i</i>	t Panel Acc Crit)	CV
[50.1]	IP Breaker 2-BKR-268-1/1-A, (Breaker 1), a DPL-268-1-A, by way of Red TRIP Button. (<i>A</i> VERIFY the following:	t Panel Acc Crit)	CV
2-i [50.1]	 IP Breaker 2-BKR-268-1/1-A, (Breaker 1), a DPL-268-1-A, by way of Red TRIP Button. (A VERIFY the following: A. 2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, ALARMS. 	t Panel Acc Crit) ST PNL A/B	CV
2-i [50.1]	 IP Breaker 2-BKR-268-1/1-A, (Breaker 1), a DPL-268-1-A, by way of Red TRIP Button. (A VERIFY the following: A. 2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, ALARMS. B. Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIP ALARM (Red). 	t Panel Acc Crit) ST PNL A/B es 102-C PHMS PED is in	CV
[50.1] [51] RE 2-I	 IP Breaker 2-BKR-268-1/1-A, (Breaker 1), a DPL-268-1-A, by way of Red TRIP Button. (A VERIFY the following: A. 2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, ALARMS. B. Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIP ALARM (Red). ESET Breaker 2-BKR-268-1/1-A, (Breaker 1) DPL-268-1-A. 	t Panel Acc Crit) ST PNL A/B es 102-C PHMS PED is in	CV

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	Data Pac	kage: Page of D	ate
6.1	PHMS Co	ontrol and Alarm Function Tests (continued)	
	[51.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS.	
		 B. Unit 2 Event Display Monitor indicates 102-C PHMS POWER DIST PNL A UV/BKR TRIPPED is in NORMAL (Blue). 	
	[52] TR 2-[IP Breaker 2-BKR-268-1/2-A, (Breaker 2), at Panel DPL-268-1-A, by way of Red TRIP Button. (Acc Crit)	<u> </u>
	[52,1]	VERIFY the following:	01
	[02.1]	A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, ALARMS.	
		 B. Unit 2 Event Display Monitor indicates 102-C PHMS POWER DIST PNL A UV/BKR TRIPPED is in ALARM (Red). 	
	[53] RE 2-I	SET Breaker 2-BKR-268-1/2-A, (Breaker 2), at Panel DPL-268-1-A.	
			CV
	[53.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS.	
		 B. Unit 2 Event Display Monitor indicates 102-C PHMS POWER DIST PNL A UV/BKR TRIPPED is in NORMAL (Blue). 	
	[54] TF 2-1	RIP Breaker 2-BKR-268-1/3-A, (Breaker 3), at Panel DPL-268-1-A, by way of Red TRIP Button. (Acc Crit)	
			CV

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	Data Pacl	cage: Page of	Date
.1	PHMS Co	ntrol and Alarm Function Tests (continued)	
	[54.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A UV/BKR TRIP, ALARMS.	VB
		 B. Unit 2 Event Display Monitor indicates 102-C POWER DIST PNL A UV/BKR TRIPPED is in ALARM (Red). 	: PHMS n
	[55] RE 2-D	SET Breaker 2-BKR-268-1/3-A, (Breaker 3), at Pane PL-268-1-A.	l
			CV
	. [55.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A UV/BKR TRIP, CLEARS.	VB
		 B. Unit 2 Event Display Monitor indicates 102-C POWER DIST PNL A UV/BKR TRIPPED is in NORMAL (Blue). 	: PHMS n
	[56] TR 2-[IP Breaker 2-BKR-268-1/4-A, (Breaker 4), at Panel DPL-268-1-A, by way of Red TRIP Button. (Acc Crit)
		· · · ·	CV
	[56.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL AUV/BKR TRIP, ALARMS.	4/В
		 B. Unit 2 Event Display Monitor indicates 102-0 POWER DIST PNL A UV/BKR TRIPPED is i ALARM (Red). 	PHMS n

	WBN Unit 2	PERMANE	NT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 31 of 123				
	Data Pac	Data Package: Page of D						
	6.1 PHMS Co	ed)						
	[57] RE 2-D	SET Breaker DPL-268-1-A.	2-BKR-268-1/4-A, (Breaker 4)	, at Panel				
				-	CV			
	[57.1]	VERIFY t	he following:					
		a. 2-xa UV/B	-55-5C/102-C, PHMS PWR DI; KR TRIP, CLEARS.	ST PNL A/B				
		B. Unit POW NOR	2 Event Display Monitor indicat /ER DIST PNL A UV/BKR TRIF MAL (Blue).	es 102-C PHMS PED is in				
	[58] TR 2-[IP Breaker 2 DPL-268-1-A,	-BKR-268-1/5-A, (Breaker 5), a by way of Red TRIP Button.(t Panel Acc Crit)				
				·	CV			
	[58.1]	VERIFY t	he following:					
•		A. 2-XA UV/E	-55-5C/102-C, PHMS PWR DI BKR TRIP, ALARMS.	ST PNL A/B				
		B. Unit POW ALAI	2 Event Display Monitor indicat /ER DIST PNL A UV/BKR TRIF RM (Red).	tes 102-C PHMS PPED is in				
	[59] RE 2-I), at Panel						
					CV			
	[59.1]	VERIFY t	he following:					
		A. 2-XA UV/E	A-55-5C/102-C, PHMS PWR DI BKR TRIP, CLEARS.	ST PNL A/B				
		B. Unit POV NOR	2 Event Display Monitor indica VER DIST PNL A UV/BKR TRII RMAL (Blue).	tes 102-C PHMS PPED is in				

	WBN Unit 2	PERN	MANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 32 of 123		
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.1	PHMS Co	ontrol a	and Alarm Function Tests (continue	ed)		
	[60] TR 2-1	RIP Brea DPL-26	aker 2-BKR-268-1/6-A, (Breaker 6), a 8-1-A, by way of Red TRIP Button.(/	t Panel Acc Crit)		
					CV	
	[60.1]	VE	RIFY the following:			
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B		
		В.	Unit 2 Event Display Monitor indicate POWER DIST PNL A UV/BKR TRIF ALARM (Red).	es 102-C PHMS PED is in		
	[61] RI 2-I	E SET B DPL-26	reaker 2-BKR-268-1/6-A, (Breaker 6) 8-1-A.	, at Panel		
			·		CV	
	[61.1]	VE	RIFY the following:			
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B		
	·	B.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PED is in		
	[62] TRIP Breaker 2-BKR-268-1/7-A, (Breaker 7), at Panel 2-DPL-268-1-A, by way of Red TRIP Button. (Acc Crit)					
				:	CV	
	[62.1]	VE	RIFY the following:			
		Α.	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, ALARMS.	ST PNL A/B		
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF ALARM (Red).	es 102-C PHMS PPED is in		

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	WBN Unit 2	PERM	ANENT HYDROGEN MITIGATIO SYSTEM	N 2-PTI-268-01 Rev. 0000 Page 33 of 123	
	Data Package: Page of Da				
.1	PHMS C	ontrol ar	d Alarm Function Tests (contin	nued)	
	[63] Ri 2-	E SET Bre DPL-268	eaker 2-BKR-268-1/7-A, (Breaker -1-A.	7), at Panel	
				· · · · ·	CV
	[63.1]	VER	FY the following:		
		A .	2-XA-55-5C/102-C, PHMS PWR I UV/BKR TRIP, CLEARS.	DIST PNL A/B	<u> </u>
		В.	Unit 2 Event Display Monitor indic POWER DIST PNL A UV/BKR TF NORMAL (Blue).	ates 102-C PHMS RIPPED is in	
	[64] TF 2-	RIP Breal DPL-268	ker 2-BKR-268-1/8-A, (Breaker 8) -1-A, by way of Red TRIP Button.	, at Panel (Acc Crit)	
					CV
	[64.1]	VER	IFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR I UV/BKR TRIP, ALARMS.	DIST PNL A/B	
		В.	Unit 2 Event Display Monitor indic POWER DIST PNL A UV/BKR TF ALARM (Red).	cates 102-C PHMS RIPPED is in	
	[65] R 2-	E SET Bro DPL-268	eaker 2-BKR-268-1/8-A, (Breaker -1-A.	8), at Panel	
					CV
	[65.1]	VER	IFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR UV/BKR TRIP, CLEARS.	DIST PNL A/B	
		B.	Unit 2 Event Display Monitor indic POWER DIST PNL A UV/BKR TI NORMAL (Blue).	cates 102-C PHMS RIPPED is in	

	WBN Unit 2	PERM	MANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 34 of 123	
	Data Pa	ckage:	Page of	Date	
6.1	PHMS C	ontrol a	and Alarm Function Tests (continue	ed)	·
	[66] TI 2-	RIP Brea DPL-26	aker 2-BKR-268-1/9-A, (Breaker 9), a 8-1-A, by way of Red TRIP Button.(/	t Panel Acc Crit)	
					CV
	[66.1]	VEI	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicate POWER DIST PNL A UV/BKR TRIF ALARM (Red).	es 102-C PHMS PED is in	
	[67] R 2-	eset B DPL-26	reaker 2-BKR-268-1/9-A, (Breaker 9) 8-1-A.	, at Panel	
					C\
	[67.1]] VE	RIFY the following:		
		A.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PED is in	
	[68] T 2	RIP Bre DPL-26	aker 2-BKR-268-1/10-A, (Breaker 10) 8-1-A, by way of Red TRIP Button.(, at Panel Acc Crit)	
					- C\
	[68.1] VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, ALARMS.	ST PNL A/B	

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WBN Unit 2	PERMA	ANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 35 of 123
Data Pao	kage: P	age of	Date
6.1 PHMS C	ontrol an	d Alarm Function Tests (continu	ed)
[69] R i 2-	E SE T Bre DPL-268-	aker 2-BKR-268-1/10-A, (Breaker 1-A.	10), at Panel
			CV
[69.1]	VERI	FY the following:	
	A. 2 l	2-XA-55-5C/102-C, PHMS PWR DI JV/BKR TRIP, CLEARS.	ST PNL A/B
	B. (F	Jnit 2 Event Display Monitor indica POWER DIST PNL A UV/BKR TRII NORMAL (Blue).	tes 102-C PHMS PPED is in
[70] TI 2-	RIP Break DPL-268-	er 2-BKR-268-1/11-A, (Breaker 11 1-A, by way of Red TRIP Button.(), at Panel (Acc Crit)
			CV
[70.1]	VERI	FY the following:	
	A. 2	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, ALARMS.	ST PNL A/B
	B. I I	Unit 2 Event Display Monitor indica POWER DIST PNL A UV/BKR TRI ALARM (Red).	tes 102-C PHMS PPED is in
[71] R 2-	ESET Bre DPL-268	eaker 2-BKR-268-1/11-A, (Breaker -1-A.	11), at Panel
			CV
[71.1	VERI	IFY the following:	
	A. 2	2-XA-55-5C/102-C, PHMS PWR D UV/BKR TRIP, CLEARS.	ST PNL A/B
	B.	Unit 2 Event Display Monitor indica POWER DIST PNL A UV/BKR TRI NORMAL (Blue).	tes 102-C PHMS PPED is in

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION2-PTI-268-01SYSTEMRev. 0000Page 36 of 12	23
	Data Pacl	kage: Page of	Date
6.1	PHMS Co	ntrol and Alarm Function Tests (continued)	
	[72] TR 2-D	IP Breaker 2-BKR-268-1/12-A, (Breaker 12), at Panel PL-268-1-A, by way of Red TRIP Button. (Acc Crit)	
			CV
	[72.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, ALARMS.	
		 B. Unit 2 Event Display Monitor indicates 102-C PHM POWER DIST PNL A UV/BKR TRIPPED is in ALARM (Red). 	S
	[73] RE 2-D	SET Breaker 2-BKR-268-1/12-A, (Breaker 12), at Panel PL-268-1-A.	
			CV
	[73.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS.	<u> </u>
		 B. Unit 2 Event Display Monitor indicates 102-C PHM POWER DIST PNL A UV/BKR TRIPPED is in NORMAL (Blue). 	S
	[74] TR 2-[IP Breaker 2-BKR-268-1/13-A, (Breaker 13), at Panel DPL-268-1-A, by way of Red TRIP Button. (Acc Crit)	
			CV
	[74.1]	VERIFY the following:	
		A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, ALARMS.	
		 B. Unit 2 Event Display Monitor indicates 102-C PHM POWER DIST PNL A UV/BKR TRIPPED is in ALARM (Red). 	S

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6.1	PHMS Co	ntrol an	d Alarm Function Tests (continue	ed)	
	[75] RE 2-D	SET Bre PL-268	eaker 2-BKR-268-1/13-A, (Breaker 1 -1-A.	3), at Panel	
					CV
	[75.1]	VER	FY the following:		
		A . 2	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PED is in 	
	[76] TR 2-D	I P Breal)PL-268	ker 2-BKR-268-1/14-A, (Breaker 14) -1-A, by way of Red TRIP Button.(, at Panel Acc Crit)	
				_	CV
	[76.1]	VER	IFY the following:		
		A.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B	
·		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF ALARM (Red).	es 102-C PHMS PPED is in 	
	[77] RE 2-D	SET Bre PL-268	eaker 2-BKR-268-1/14-A, (Breaker 1 -1-A.	I4), at Panel	
				· · · ·	CV
	[77.1]	VER	IFY the following:		
		А.	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PPED is in 	<u>.</u>

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6.1	PHMS Co	ontrol a	nd Alarm Function Tests (continue	ed)	
	[78] TR 2-C	IP Brea DPL-268	ker 2-BKR-268-1/15-A, (Breaker 15) 3-1-A, by way of Red TRIP Button.(, at Panel Acc Crit)	
				· · · · · ·	CV
	[78.1]	VER	IFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF ALARM (Red).	es 102-C PHMS PPED is in	
	[79] RE 2-[SET Bi DPL-268	eaker 2-BKR-268-1/15-A, (Breaker ´ 3-1-A.	15), at Panel	
					CV
	[79.1]	VEF	RIFY the following:		
		A.	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indica POWER DIST PNL A UV/BKR TRI NORMAL (Blue).	tes 102-C PHMS PPED is in	
	[80] TF 2-1	RIP Brea DPL-26	aker 2-BKR-268-1/16-A, (Breaker 16 8-1-A, by way of Red TRIP Button.), at Panel (Acc Crit)	·
		·			CV
	[80.1]	VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR D UV/BKR TRIP, ALARMS.	IST PNL A/B	
		В.	Unit 2 Event Display Monitor indica POWER DIST PNL A UV/BKR TRI ALARM (Red).	tes 102-C PHMS PPED is in	

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6.1	PHMS Co	ontrol a	and Alarm Function Tests (continue	ed)	
	[81] RE 2-I	SET B DPL-26	reaker 2-BKR-268-1/16-A, (Breaker 1 8-1-A.	6), at Panel	
					C/
	[81.1]	VEI	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicate POWER DIST PNL A UV/BKR TRIP NORMAL (Blue).	es 102-C PHMS PED is in	
	[82] TF 2-1	RIP Brea DPL-26	aker 2-BKR-268-1/17-A, (Breaker 17) 8-1-A, by way of Red TRIP Button.(/	, at Panel Acc Crit)	
					C
	[82.1]	VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL A UV/BKR TRIF ALARM (Red).	es 102-C PHMS PED is in	
	[83] R I 2-	E SET B DPL-26	reaker 2-BKR-268-1/17-A, (Breaker 1 8-1-A.	17), at Panel	
					C
	[83.1]	VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat	es 102-C PHMS PPFD is in	

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1	PHMS Co	ntrol a	nd Alarm Function Tests (continue	ed)	
	[84] TR 2-D	P Brea PL-26	aker 2-BKR-268-1/18-A, (Breaker 18), 8-1-A, by way of Red TRIP Button.(/	, at Panel Acc Crit)	
				· · · · ·	CV
	[84.1]	VEF	RIFY the following:		
		A.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B	
		B.	Unit 2 Event Display Monitor indicate POWER DIST PNL A UV/BKR TRIP ALARM (Red).	es 102-C PHMS PED is in	
	[85] RE 2-D	SET 2- PL-26	BKR-268-1/18-A, (Breaker 18), at Pa 8-1-A.	nel	
					CV
	[85.1]	VE	RIFY the following:		,
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	
	· ·	В.	Unit 2 Event Display Monitor indicate POWER DIST PNL A UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PED is	•
			NOTES	·	
1)	Section 6.1[8 RESET.	86] to 6	.1[121] verifies the breakers at Panel	2-DPL-268-2-B TRI	^o and

2) Each of the following breakers is equipped with a Red TRIP Button which trips the breaker when turned clockwise.

[86] **TRIP** Breaker 2-BKR-268-2/1-B, (Breaker 1), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit)

CV

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6.1	PHMS C	control a	and Alarm	Function Tests (continue	ed)	
	[86.1] V E	RIFY the f	ollowing:		
		Α.	2-XA-55 UV/BKR	-5C/102-C, PHMS PWR DIS TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 Ev POWER ALARM	vent Display Monitor indicate DIST PNL B UV/BKR TRIP (Red).	es 102-C PHM PED is in	S
-	[87] R 2	ESET 2 -DPL-26	-BKR-268 8-2-B.	-2/1-B, (Breaker 1), at Pane	5]	
						CV
	[87.1] VE	RIFY the f	ollowing:		
		Α.	2-XA-55 UV/BKR	-5C/102-C, PHMS PWR DIS TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 E [.] POWER NORMA	vent Display Monitor indicat DIST PNL B UV/BKR TRIF L (Blue).	es 102-C PHM PED is	s
	[88] T 2	RIP Bre -DPL-26	aker 2-BK 8-2-B, by	R-268-2/2-B, (Breaker 2), a way of Red TRIP Button. (t Panel Acc Crit)	
						CV
	[88.1] VE	RIFY the f	following:		
		Α.	2-XA-55 UV/BKR	-5C/102-C, PHMS PWR DI TRIP, ALARMS.	st PNL A/B	
		Β.	Unit 2 E POWER ALARM	vent Display Monitor indicat CDIST PNL B UV/BKR TRIF (Red).	es 102-C PHM PED is in	S
	[89] F 2	RESET 2 2-DPL-26	2-BKR-268 38-2-B.	3-2/2-B, (Breaker 2), at Pane	el	
						CV

 Data Package: Page of 6.1 PHMS Control and Alarm Function Tests (continued) [89.1] VERIFY the following: A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS. B. Unit 2 Event Display Monitor indicates 102-C PH POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue). [90] TRIP Breaker at 2-BKR-268-2/3-B, (Breaker 3), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit) 	Date
 6.1 PHMS Control and Alarm Function Tests (continued) [89.1] VERIFY the following: A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS. B. Unit 2 Event Display Monitor indicates 102-C PH POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue). [90] TRIP Breaker at 2-BKR-268-2/3-B, (Breaker 3), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit) 	IMS
 [89.1] VERIFY the following: A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS. B. Unit 2 Event Display Monitor indicates 102-C PH POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue). [90] TRIP Breaker at 2-BKR-268-2/3-B, (Breaker 3), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit) 	IMS
 A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS. B. Unit 2 Event Display Monitor indicates 102-C PH POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue). [90] TRIP Breaker at 2-BKR-268-2/3-B, (Breaker 3), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit) 	IMS
 B. Unit 2 Event Display Monitor indicates 102-C PH POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue). [90] TRIP Breaker at 2-BKR-268-2/3-B, (Breaker 3), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit) 	IMS
 [90] TRIP Breaker at 2-BKR-268-2/3-B, (Breaker 3), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit) 	
	CV
[90.1] VERIFY the following:	
A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, ALARMS.	
 B. Unit 2 Event Display Monitor indicates 102-C PH POWER DIST PNL B UV/BKR TRIPPED is in ALARM (Red). 	IMS
[91] RESET 2-BKR-268-2/3-B, (Breaker 3), at Panel 2-DPL-268-2-B.	
, ,	CV
[91.1] VERIFY the following:	
A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS.	<u> </u>
B. Unit 2 Event Display Monitor indicates 102-C PH POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue).	IMS
[92] TRIP Breaker 2-BKR-268-2/4-B, (Breaker 4), at Panel 2-DPL-268-2-B, by way of Red TRIP Button. (Acc Crit)	
L	CV

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5.1	PHMS Co	ntrol a	and Alarr	m Function Tests (continue	ed)	
	[92.1]	VE	RIFY the	following:		
		A.	2-XA-55 UV/BKF	5-5C/102-C, PHMS PWR DIS R TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 E POWEF ALARM	event Display Monitor indicate R DIST PNL B UV/BKR TRIP (Red).	es 102-C PHMS PED is in	
	[93] RE 2-D	SET 2)PL-26	-BKR-268 8-2-B.	8-2/4-B, (Breaker 4), at Pane	<mark>el</mark> .	
						CV
	[93.1]	VE	RIFY the	following:		
		А.	2-XA-5 UV/BKF	5-5C/102-C, PHMS PWR DIS R TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 E POWEF NORM	Event Display Monitor indicat R DIST PNL B UV/BKR TRIF AL (Blue).	es 102-C PHMS PED is	
	[94] TR 2-E	IP Brea DPL-26	aker 2-Bl 8-2-B, by	KR-268-2/5-B, (Breaker 5), a / way of Red TRIP Button.(/	t Panel Acc Crit)	
						CV
	[94.1]	VE	RIFY the	following:		
		Α.	2-XA-5: UV/BKF	5-5C/102-C, PHMS PWR DIS R TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 E Powei Alarn	Event Display Monitor indicat R DIST PNL B UV/BKR TRIF 1 (Red).	es 102-C PHMS PPED is in	
	[95] RE 2-[SET 2 DPL-26	-BKR-26 8-2-B.	8-2/5-B, (Breaker 5), at Pane	əl	
						<u>.</u>

CV

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PHMS Co	entrol and Alarm Function Tests (continued)	
[95.1]	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS.	
.	 B. Unit 2 Event Display Monitor indicates 102-C PHMS POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue). 	
[96] TR 2-[IP Breaker at 2-BKR-268-2/6-B, (Breaker 6), at Panel DPL-268-2-B, by way of Red TRIP Button. (Acc Crit)	
		CV
[96.1]	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, ALARMS.	
	 B. Unit 2 Event Display Monitor indicates 102-C PHMS POWER DIST PNL B UV/BKR TRIPPED is in ALARM (Red). 	
[97] RE 2-I	SET 2-BKR-268-2/6-B, (Breaker 6), at Panel DPL-268-2-B.	
		CV
[97.1]	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PWR DIST PNL A/B UV/BKR TRIP, CLEARS.	<u> </u>
	 B. Unit 2 Event Display Monitor indicates 102-C PHMS POWER DIST PNL B UV/BKR TRIPPED is NORMAL (Blue). 	
[98] TF 2-1	RIP Breaker 2-BKR-268-2/7-B, (Breaker 7), at Panel DPL-268-2-B, by way of Red TRIP Button. (Acc Crit)	

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6.1 PHMS Co	ntrol and Alarm Function Tests (cor	ntinued)
[98.1]	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PW UV/BKR TRIP, ALARMS.	R DIST PNL A/B
	B. Unit 2 Event Display Monitor in POWER DIST PNL B UV/BKR ALARM (Red).	dicates 102-C PHMS TRIPPED is in
[99] RE : 2-D	SET 2-BKR-268-2/7-B, (Breaker 7), at PL-268-2-B.	Panel
		CV
[99.1]	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PW UV/BKR TRIP, CLEARS.	R DIST PNL A/B
	B. Unit 2 Event Display Monitor in POWER DIST PNL B UV/BKR NORMAL (Blue).	dicates 102-C PHMS TRIPPED is
[100] TRI 2-D	P Breaker 2-BKR-268-2/8-B, (Breaker PL-268-2-B, by way of Red TRIP Butt	[.] 8), at Panel on. (Acc Crit)
		CV
[100.1]	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PW UV/BKR TRIP, ALARMS.	R DIST PNL A/B
	 B. Unit 2 Event Display Monitor in POWER DIST PNL B UV/BKR ALARM (Red). 	dicates 102-C PHMS TRIPPED is in
[101] RE 2-D	SET 2-BKR-268-2/8-B, (Breaker 8), at PL-268-2-B.	Panel
		CV

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6.1	PHMS Co	ntrol	and Alarm Function Tests (continue	ed)	
	[101.1]	VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	
	• •	В.	Unit 2 Event Display Monitor indicate POWER DIST PNL B UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PED is	
	[102] TRI 2-D	P Bre PL-26	eaker 2-BKR-268-2/9-B, (Breaker 9), a 58-2-B, by way of Red TRIP Button.(t Panel Acc Crit)	
			· · ·		<u> </u>
	[102.1]	VE	RIFY the following:		-
		A.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B	
		B.	Unit 2 Event Display Monitor indicat POWER DIST PNL B UV/BKR TRIF ALARM (Red).	es 102-C PHMS PED is in	
	[103] RE 2-D	SET 2 PL-20	2-BKR-268-2/9-B, (Breaker 9), at Pane 58-2-B.	əl	
					C\
	[103.1]	VE	RIFY the following:		
		A.	2-XA-55-5C/102-C, PHMS PWR DI UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL B UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PPED is	
	[104] TRI 2-D	P Bre PL-20	eaker 2-BKR-268-2/10-B, (Breaker 10) 68-2-B, by way of Red TRIP Button.(, at Panel Acc Crit)	
					C

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6.1	PHMS Co	ontrol a	nd Alarn	n Function Tests (con	tinued)		
	[104.1] VER	IFY the 1	following:			
		Α.	2-XA-55 UV/BKR	5-5C/102-C, PHMS PWF R TRIP, ALARMS.	R DIST PNL A/B		
		В.	Unit 2 E POWEF ALARM	vent Display Monitor inc R DIST PNL B UV/BKR (Red).	licates 102-C Pl TRIPPED is in	-IMS 	
	[105] RE 2-[SET 2-1 DPL-268	BKR-268 3-2-B.	3-2/10-B, (Breaker 10), a	at Panel		
					· .		
						. · · · ·	CV
	[105.1] VER	IFY the	following:			
		Α.	2-XA-55 UV/BKF	5-5C/102-C, PHMS PWI R TRIP, CLEARS.	R DIST PNL A/B		
		В.	Unit 2 E POWEF NORMA	vent Display Monitor in R DIST PNL B UV/BKR AL (Blue).	dicates 102-C Pl TRIPPED is	HMS	
	[106] TR 2-[CIP Brea DPL-268	ker 2-Bk 3-2-B, by	KR-268-2/11-B, (Breake way of Red TRIP Butto	r 11), at Panel n. (Acc Crit)		
				·			CV
	[106.1] VER	IFY the	following:			
		Α.	2-XA-55 UV/BKF	5-5C/102-C, PHMS PWI R TRIP, ALARMS.	R DIST PNL A/B		
		В.	Unit 2 E POWEF ALARM	vent Display Monitor in R DIST PNL B UV/BKR (Red).	dicates 102-C Pl TRIPPED is in	HMS	
	[107] RE 2-I	SET 2- DPL-268	BKR-268 3-2-B.	8-2/11-B, (Breaker 11),	at Panel		
				·		_	CV
							~

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6.1 PHMS Co	entrol and Alarm Function Tests (continu	(beu
[107.1	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PWR D UV/BKR TRIP, CLEARS.	IST PNL A/B
	 B. Unit 2 Event Display Monitor indica POWER DIST PNL B UV/BKR TRI NORMAL (Blue). 	ites 102-C PHMS PPED is
[108] TR 2-E	IP Breaker 2-BKR-268-2/12-B, (Breaker 12 DPL-268-2-B, by way of Red TRIP Button.	2), at Panel (Acc Crit)
	· · · · · ·	CV
[108.1]	VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PWR D UV/BKR TRIP, ALARMS.	IST PNL A/B
	 B. Unit 2 Event Display Monitor indica POWER DIST PNL B UV/BKR TRI ALARM (Red). 	ates 102-C PHMS PPED is in
[109] RE 2-[SET 2-BKR-268-2/12-B, (Breaker 12), at F DPL-268-2-B.	Panel
		CV
[109.1] VERIFY the following:	
	A. 2-XA-55-5C/102-C, PHMS PWR D UV/BKR TRIP, CLEARS.	IST PNL A/B
	 B. Unit 2 Event Display Monitor indica POWER DIST PNL B UV/BKR TRI NORMAL (Blue). 	ates 102-C PHMS IPPED is
[110] TR 2-[IP Breaker 2-BKR-268-2/13-B, (Breaker 13 DPL-268-2-B, by way of Red TRIP Button.	B), at Panel (Acc Crit)
		CV
	· ·	

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6.1	PHMS Co	ntrol	and Alarm Function Tests (continue	ed)	
	[110.1]	VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicate POWER DIST PNL B UV/BKR TRIP ALARM (Red).	es 102-C PHMS PED is in	
	[111] RE 2-D	SET 2 PL-26	2-BKR-268-2/13-B, (Breaker 13), at Pa 58-2-B.	anel	
					CV
	[111.1]	VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	;
		B.	Unit 2 Event Display Monitor indicat POWER DIST PNL B UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PED is	
	[112] TR 2-D	P Bre PL-20	eaker 2-BKR-268-2/14-B, (Breaker 14) 58-2-B, by way of Red TRIP Button. (A	, at Panel Acc Crit)	
					CV
	[112.1]	VE	RIFY the following:		
		Α.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL B UV/BKR TRIF ALARM (Red).	es 102-C PHMS PED is in	
	[113] RE 2-D	SET 2 PL-20	2-BKR-268-2/14-B, (Breaker 14), at Pa 68-2-B.	anel	
-			· · ·		CV
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	Data Pack	age:	Page of	Date	
6.1	PHMS Co	ntrol	and Alarm Function Tests (continue	ed)	
	[113.1]	VE	RIFY the following:	.	
		A.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicate POWER DIST PNL B UV/BKR TRIP NORMAL (Blue).	es 102-C PHMS PED is	
	[114] TRI 2-D	P Bre PL-26	aker 2-BKR-268-2/15-B, (Breaker 15) 68-2-B, by way of Red TRIP Button.(/	, at Panel Acc Crit)	
	. · ·				
	[11 <i>1</i>]	VE	DIEV the following:		Cv
	[[]]4.1]	VC			
		А.	UV/BKR TRIP, ALARMS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicate POWER DIST PNL B UV/BKR TRIF ALARM (Red).	es 102-C PHMS PED is in	
	[115] RE 2-D	SET 2 PL-26	2-BKR-268-2/15-B, (Breaker 15), at Pa 68-2-B.	nel	
,					CV
	[115.1]	VE	RIFY the following:		
	· · ·	A.	2-XA-55-5C/102-C, PHMS PWR DIS UV/BKR TRIP, CLEARS.	ST PNL A/B	
		В.	Unit 2 Event Display Monitor indicat POWER DIST PNL B UV/BKR TRIF NORMAL (Blue).	es 102-C PHMS PED is	
	[116] TRI 2-D	P Bre PL-26	eaker 2-BKR-268-2/16-B, (Breaker 16) 58-2-B, by way of Red TRIP Button. (A	, at Panel Acc Crit)	
					CV

	Unit 2	PER	WANCNI	SYSTEM	Rev. 0000 Page 51 of 123	
	Data Pac	kage:	Page	of	Date)
6.1	PHMS Co	ntroi	and Alarn	n Function Tests (conti	nued)	
	[116.1	VE	RIFY the f	ollowing:		
		A.	2-XA-55 UV/BKR	-5C/102-C, PHMS PWR TRIP, ALARMS.	DIST PNL A/B	·
·	· ·	B.	Unit 2 Ev POWER ALARM	vent Display Monitor indi DIST PNL B UV/BKR T (Red).	cates 102-C PHMS RIPPED is in	·
	[117] RE 2-[SET 2 0PL-26	2-BKR-268 38-2-B.	8-2/16-B, (Breaker 16), at	t Panel	
						CV
	[117.1] VE	RIFY the f	following:		
		А.	2-XA-55 UV/BKR	-5C/102-C, PHMS PWR TRIP, CLEARS.	DIST PNL A/B	
		В.	Unit 2 E POWER NORMA	vent Display Monitor indi R DIST PNL B UV/BKR T L (Blue).	icates 102-C PHMS RIPPED is	
	[118] TR 2-[IP Bre)PL-26	aker 2-BK 58-2-B, by	R-268-2/17-B, (Breaker way of Red TRIP Buttor	17), at Panel n. (Acc Crit)	
						CV
	[118.1] V E	RIFY the f	following:		
		Α.	2-XA-55 UV/BKR	5-5C/102-C, PHMS PWR R TRIP, ALARMS.	DIST PNL A/B	
		В.	Unit 2 E POWER ALARM	vent Display Monitor ind R DIST PNL B UV/BKR T (Red).	icates 102-C PHMS RIPPED is in	
	[119] RE 2-I	SET 2 DPL-20	2-BKR-268 68-2-B.	3-2/17-B, (Breaker 17), a	t Panel	
		i		· · ·	· · ·	CV

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Da	ta Packag	ge: Page	of	Dat	le
6.1 PH	IMS Conti	rol and Alarm	Function Tests (continue	ed)	
	[119.1]	VERIFY the f	ollowing:		
		A. 2-XA-55 UV/BKR	-5C/102-C, PHMS PWR DIS TRIP, CLEARS.	ST PNL A/B	
		B. Unit 2 Ev POWER NORMA	/ent Display Monitor indicat DIST PNL B UV/BKR TRIF L (Blue).	es 102-C PHMS PED is	
[12	20] TRIP 2-DPL	Breaker 2-BK 268-2-B; by	R-268-2/18-B, (Breaker 18) way of Red TRIP Button.(, at Panel Acc Crit)	
					CV
	[120.1]	VERIFY the f	ollowing:		
		A. 2-XA-55 UV/BKR	-5C/102-C, PHMS PWR DI TRIP, ALARMS.	ST PNL A/B	
		B. Unit 2 Ev POWER ALARM	vent Display Monitor indicat DIST PNL B UV/BKR TRIF (Red).	es 102-C PHMS PED is in	
[12	21] RESE 2-DPL	T 2-BKR-268 268-2-B.	-2/18-B, (Breaker 18), at Pa	anel	<u></u>
					CV
	[121.1]	VERIFY the f	ollowing:		
		A. 2-XA-55 UV/BKR	-5C/102-C, PHMS PWR DI TRIP, CLEARS.	ST PNL A/B	
		B. Unit 2 E POWER NORMA	vent Display Monitor indicat DIST PNL B UV/BKR TRI L (Blue).	es 102-C PHMS PPED is	

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	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 53 of 123
	Data Pacl	kage: Page of	Date
6.1	PHMS Co	ntrol and Alarm Function Tests (continue	ed)
	[122] PL 2-D	ACE MAIN Breaker 2-BKR-268-1/M1-A at P PL-268-1-A in the OFF position. (Acc Crit)	
			CV
	[122.1]	VERIFY 2-XA-55-5C/102-C, PHMS PWR UV/BKR TRIP, ALARMS.	DIST PNL A/B
	[123] PL 2-D	ACE MAIN Breaker 2-BKR-268-1/M1-A at P PL-268-1-A in the ON position.	anel
			CV
	[123.1]	VERIFY 2-XA-55-5C/102-C, PHMS PWR UV/BKR TRIP, is CLEAR.	R DIST PNL A/B
	[124] PL 2-D	ACE MAIN Breaker 2-BKR-268-2/M1-B at P DPL-268-2-B in the OFF position. (Acc Crit)	anel
			CV
	[124. 1]] VERIFY 2-XA-55-5C/102-C, PHMS PWF UV/BKR TRIP, ALARMS.	R DIST PNL A/B
	[125] PL 2-D	ACE MAIN Breaker 2-BKR-268-2/M1-B at P DPL-268-2-B in the ON position.	anel
			CV
	[125.1]	VERIFY 2-XA-55-5C/102-C, PHMS PWF UV/BKR TRIP, is CLEAR.	R DIST PNL A/B
	[126] PL Mit pos	ACE Breaker 2-BKR-268-1/1-A, Breaker 1, i igation Distribution Panel 2-DPL-268-1-A, in sition.	at Hydrogen the OFF

CV

		WBN Unit 2	PERMANENT	IYDROGEN MITIC SYSTEM	GATION 2-PTI-268 Rev. 0000 Page 54 c	-01) of 123
		Data Pac	kage: Page	_ of		Date
	6.1	PHMS Co	ontrol and Alarm	Function Tests (continued)	
		[127] PL Mi po	ACE Breaker 2-E tigation Distributionsition.	KR-268-1/2-A, Broom Nanel 2-DPL-26	eaker 2, at Hydroge 8-1-A, in the OFF	n
						CV
	-	[128] PL Mi po	ACE Breaker 2-E tigation Distributionsition.	8KR-268-1/3-A, Broom Panel 2-DPL-26	eaker 3, at Hydroge 8-1-A, in the OFF	n
						CV
		[129] PL Mi po	ACE Breaker 2-E tigation Distributionsition.	8KR-268-1/4-A, Br on Panel 2-DPL-26	eaker 4, at Hydroge 8-1-A, in the OFF	n
						CV
		[130] PL Mi po	ACE Breaker 2-E itigation Distributionsition.	3KR-268-1/5-A, Br on Panel 2-DPL-26	eaker 5, at Hydroge 88-1-A, in the OFF	n
×		,				CV
,		[131] PL Mi po	ACE Breaker 2-E bitigation Distribution	3KR-268-1/6-A, Br on Panel 2-DPL-26	eaker 6, at Hydroge 88-1-A, in the OFF	n
		[132] Pl Mi po	ACE Breaker 2-E Breaker 2-E Breaker 2-E	3KR-268-1/7-A, Br on Panel 2-DPL-26	eaker 7, at Hydroge 58-1-A, in the OFF	n
						<u> </u>

WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 55 of 123	
Data F	Package: Page of	Date _	
6.1 PHMS	Control and Alarm Function Tests (continue	ed)	
[133]	PLACE Breaker 2-BKR-268-1/8-A, Breaker 8, a Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen the OFF -	
	·		CV
[134]	PLACE Breaker 2-BKR-268-1/9-A, Breaker 9, a Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen a the OFF	
	- · · ·	-	CV
[135]	PLACE Breaker 2-BKR-268-1/10-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	0, at Hydrogen 1 the OFF 	
		-	CV
[136]	PLACE Breaker 2-BKR-268-1/11-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	1, at Hydrogen o the OFF -	
		-	CV
[137]	PLACE Breaker 2-BKR-268-1/12-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	2, at Hydrogen n the OFF -	
		-	CV
[138]	PLACE Breaker 2-BKR-268-1/13-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in	3, at Hydrogen n the OFF	

(WBN Jnit 2	SYSTEM	N 2-P11-268-01 Rev. 0000 Page 56 of 123
	Data Pac	ckage: Page of	Date
6.1	PHMS C	ontrol and Alarm Function Tests (contin	nued)
	[139] PI M po	LACE Breaker 2-BKR-268-1/14-A, Breaker itigation Distribution Panel 2-DPL-268-1-A psition.	r 14, at Hydrogen , in the OFF
			CV
	[140] P I M po	LACE Breaker 2-BKR-268-1/15-A, Breake itigation Distribution Panel 2-DPL-268-1-A osition.	r 15, at Hydrogen , in the OFF
			CV
	[141] P) M po	LACE Breaker 2-BKR-268-1/16-A, Breake itigation Distribution Panel 2-DPL-268-1-A osition.	r 16, at Hydrogen , in the OFF
			CV
	[142] P I M po	LACE Breaker 2-BKR-268-1/17-A, Breake itigation Distribution Panel 2-DPL-268-1-A psition.	r 17, at Hydrogen , in the OFF
			CV
	[143] P M po	LACE Breaker 2-BKR-268-1/18-A, Breake litigation Distribution Panel 2-DPL-268-1-A osition.	r 18, at Hydrogen , in the OFF
			CV
	[144] P M	LACE Breaker 2-BKR-268-2/1-B, Breaker litigation Distribution Panel 2-DPL-268-2-B osition.	1, at Hydrogen , in the OFF
			CV

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W Ur	BN hit 2	PERMANENT	HYDROGEN MITIGATION SYSTEM	N 2-PTI-268-01 Rev. 0000 Page 57 of 123	3
	Data Pa	nckage: Page	of	I	Date
6.1	PHMS (Control and Alar	m Function Tests (contin	ued)	
	[145] P N P	PLACE Breaker 2 Aitigation Distribut position.	-BKR-268-2/2-B, Breaker 2 tion Panel 2-DPL-268-2-B,	, at Hydrogen in the OFF	
					CV
	[146] F N P	PLACE Breaker 2 Mitigation Distribut position.	-BKR-268-2/3-B, Breaker 3 tion Panel 2-DPL-268-2-B,	, at Hydrogen in the OFF	
	[147] F N P	PLACE Breaker 2 Aitigation Distribut	-BKR-268-2/4-B, Breaker 4 tion Panel 2-DPL-268-2-B,	, at Hydrogen in the OFF	
			• •		
	[148] F N P	PLACE Breaker 2 Mitigation Distributionsition.	-BKR-268-2/5-B, Breaker 5 tion Panel 2-DPL-268-2-B,	, at Hydrogen in the OFF	
					CV
	[149] F N	PLACE Breaker 2 Mitigation Distribu position.	-BKR-268-2/6-B, Breaker 6 tion Panel 2-DPL-268-2-B,	, at Hydrogen in the OFF	
					CV
	[150] F N	PLACE Breaker 2 Mitigation Distribu position.	-BKR-268-2/7-B, Breaker 7 tion Panel 2-DPL-268-2-B,	, at Hydrogen in the OFF	
					CV

WBN Unit 2	PERMANENT HY	DROGEN MITIGATION	2-PTI-268-01 Rev. 0000 Page 58 of 123	
Data	Package: Page	of	Date	
1 PHM	S Control and Alarm F	unction Tests (continue	ed)	
[151]	PLACE Breaker 2-BK Mitigation Distribution position.	R-268-2/8-B, Breaker 8, a Panel 2-DPL-268-2-B, in	at Hydrogen the OFF	
			-	CV
[152]	PLACE Breaker 2-BK Mitigation Distribution position.	R-268-2/9-B, Breaker 9, a Panel 2-DPL-268-2-B, in	at Hydrogen the OFF	
[153]	PLACE Breaker 2-BK Mitigation Distribution position.	R-268-2/10-B, Breaker 10 Panel 2-DPL-268-2-B, in	0, at Hydrogen the OFF	
[154]	PLACE Breaker 2-BK Mitigation Distribution position.	R-268-2/11-B, Breaker 1 Panel 2-DPL-268-2-B, in	1, at Hydrogen the OFF	
		-		,
[155]	PLACE Breaker 2-BK Mitigation Distribution position.	R-268-2/12-B, Breaker 1 Panel 2-DPL-268-2-B, in	2, at Hydrogen the OFF	CV
	·			
[156]	PLACE Breaker 2-BK Mitigation Distribution position.	(R-268-2/13-B, Breaker 1 Panel 2-DPL-268-2-B, in	3, at Hydrogen i the OFF	CV
				CV

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	WBN Unit 2	PERMANENT	HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 59 of 123	
	Data Pa	ackage: Page	of	Dat	e
6.1	PHMS	Control and Alar	m Function Tests (continu	ed)	
	[157] F N	PLACE Breaker 2 Mitigation Distribu position.	-BKR-268-2/14-B, Breaker 1 tion Panel 2-DPL-268-2-B, ir	4, at Hydrogen n the OFF	
					C\
	[158] F N	PLACE Breaker 2 Mitigation Distribu position.	-BKR-268-2/15-B, Breaker 1 tion Panel 2-DPL-268-2-B, ir	5, at Hydrogen n the OFF	
	[159] N	PLACE Breaker 2 Mitigation Distribu position.	2-BKR-268-2/16-B, Breaker 1 tion Panel 2-DPL-268-2-B, ir	6, at Hydrogen n the OFF	
					C\
	[160] 	PLACE Breaker 2 Mitigation Distribu position.	2-BKR-268-2/17-B, Breaker 1 Ition Panel 2-DPL-268-2-B, ir	7, at Hydrogen n the OFF	
					C\
	[161] 	PLACE Breaker 2 Mitigation Distribu position.	2-BKR-268-2/18-B, Breaker 1 ition Panel 2-DPL-268-2-B, ii	l8, at Hydrogen n the OFF	
					C
	[162] 	PLACE the 480V Breaker 2-BKR-20	C&A Bldg Vent Board 2A1-A 68-1-A, in the ON position.	A, Compt 9E	
					C/
	[163]	VERIFY Red, PO	WER ON, Light on Hydroger	n Mitigation	

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 60 of 123						
•	Data Pac	kage: Page of	Date						
5.1	PHMS C	PHMS Control and Alarm Function Tests (continued)							
	[164] VI Ha (A	RIFY the following light indications at Panel ndswitch 2-HS-268-73, H2 IGNITERS GRO c c Crit)	2-M-10, UP A:						
	A.	Green Light ON.	-						
	B.	Red Light OFF.							
	[165] Pi th	ACE Handswitch 2-HS-268-73, H2 IGNITER ON position.	RS GROUP A, in						
	[165.	VERIFY the following light indications at Handswitch 2-HS-268-73, H2 IGNITER ((Acc Crit)	Panel 2-M-10, GROUP A.						
		A. Green Light OFF.							
		B. Red Light ON.							
	[165.:	J VERIFY Red, POWER ON, Light is ON a Bldg Vent Board 2A1-A, Compt 9E, Brea 2-BKR-268-1-A. (Acc Crit)	at 480V C&A Iker						
	[166] P I Bi	ACE 480V C&A Bidg Vent Board 2B1-B, Co eaker 2-BKR-268-2-B in the ON position.	ompt 12C,						
			CV						
	[167] [×] V Tı	RIFY Red, POWER ON, Light on Hydrogen ansformer Panel, 2-DXF-268-2-B, is OFF.	Mitigation						
	[168] V H (A	RIFY the following light indications at Panel indswitch 2-HS-268-74, H2 IGNITERS GRO cc Crit)	2-M-10, UP B:						
	А	Green Light ON.							
	В	Red Light OFF.							

	WBN Unit 2		PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 61 of 123				
	Data F	Packa	age: Page of	Date				
6.1	PHMS Control and Alarm Function Tests (continued)							
	[169]	PLA the (CE Handswitch 2-HS-268-74, H2 IGNITER ON position.	RS GROUP B, in				
	[16	69.1]	VERIFY the following light indications at Handswitch 2-HS-268-74, H2 IGNITERS (Acc Crit)	Panel 2-M-10, GROUP B.				
		В.	Green Light OFF.		<u>, </u>			
		C.	Red Light ON.					
·	[16	39.2]	VERIFY Red, POWER ON, Light is ON a Bldg Vent Board 2B1-B, Compt 12C, Bre 2-BKR-268-2-B. (Acc Crit)	aker				
	[170]	VER UV/E	IFY 2-XA-55-5C/102-C, PHMS PWR DIST 3KR TRIP, in MCR is CLEAR.	PNL A/B				
	[171]	PLA Hydi OFF	CE AC POWER Breaker CB1, 2-BKR-268 rogen Mitigation Transformer Panel, 2-DXF position.	-1A-A, at -268-1-A, in the				
			·		CV			
	[172]	VER UV/I	RIFY 2-XA-55-5C/102-C, PHMS PWR DIST BKR TRIP, ALARMS.	PNL A/B				
	[173]	PLA Hydr ON	CE AC POWER Breaker CB1, 2-BKR-268 rogen Mitigation Transformer Panel, 2-DXF position.	-1A-A, at 268-1-A, in the				
					CV			
	[174]	VER UV/I	RIFY 2-XA-55-5C/102-C, PHMS PWR DIST BKR TRIP, CLEARS.	PNL A/B				

	WBN Unit 2	PERMANENT HYDROGEN MITIGATIO SYSTEM	N 2-PTI-268-01 Rev. 0000 Page 62 of 123
	Data I	Package: Page of	Date
i.1	PHMS	Control and Alarm Function Tests (contin	ued)
	[175]	PLACE AC POWER Breaker CB1, 2-BKR-26 Hydrogen Mitigation Transformer Panel, 2-D2 OFF position.	68-2A-B, at XF-268-2-B, in the
			C
	[176]	VERIFY Window 102-C, PHMS PWR DIST F TRIP, ALARMS.	PNL A/B UV/BKR
۰.	[177]	PLACE AC POWER Breaker CB1, 2-BKR-26 Hydrogen Mitigation Transformer Panel, 2-D ON position.	58-2A-B, at XF-268-2-B, in the
			C
	[178]	VERIFY 2-XA-55-5C/102-C, PHMS PWR DISUV/BKR TRIP, CLEARS.	ST PNL A/B
	[179]	PLACE the following Handswitches at MCR the OFF position:	Panel 2-M-10 in.
		A. Handswitch 2-HS-268-73, H2 IGNITERS	S GROUP A
		B. Handswitch 2-HS-268-74, H2 IGNITERS	S GROUP B.

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6.2 Hydrogen Igniter Functional Tests - Train A

 NOTE

 Subsections 6.2 and 6.3 may be performed concurrently.

 [1]
 VERIFY prerequisites listed in Section 4.0 for Subsection 6.2 have been completed.

 [2]
 ENSURE the following PHMS Supply Breaker, Breaker 2-BKR-268-1-A, PERMANENT HYDROGEN MITIGATION SYSTEM 2-DXF-268-1-A, at Compt 9E of Board 2A1-A, is in the ON position.

CV

NOTE Hydrogen Mitigation Distribution Panel 2-DPL-268-1-A is located at COL A12V EL782. PLACE Breaker 2-BKR-268-1/1-A, Breaker 1, at Hydrogen [3] Mitigation Distribution Panel 2-DPL-268-1-A, in the ON position. CV [4] PLACE Breaker 2-BKR-268-1/2-A, Breaker 2, at Hydrogen Mitigation Distribution Panel 2-DPL-268-1-A, in the ON position. CV

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	Data	Package: Page of	Date
6.2	Hydro	ogen Igniter Functional Tests - Train A (contin	nued)
	[5]	PLACE Breaker 2-BKR-268-1/3-A, Breaker 3, a Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen the ON
			CV
	[6]	PLACE Breaker 2-BKR-268-1/4-A, Breaker 4, a Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen the ON
			CV
	[7]	PLACE Breaker 2-BKR-268-1/5-A, Breaker 5, a Mitigation Distribution Panel 2-DPL-268-1-A, in position	at Hydrogen the ON
			CV
	[8]	PLACE Breaker 2-BKR-268-1/6-A, Breaker 6, a Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen the ON
	[9]	PLACE Breaker 2-BKR-268-1/7-A, Breaker 7, a Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen the ON
			C\
	[10]	PLACE Breaker 2-BKR-268-1/8-A, Breaker 8, a Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen the ON

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WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 65 of 123	
Data	Package: Page of	Date	
6.2 Hydro	ogen Igniter Functional Tests - Train A (conti	nued)	
[11]	PLACE Breaker 2-BKR-268-1/9-A, Breaker 9, Mitigation Distribution Panel 2-DPL-268-1-A, in position.	at Hydrogen I the ON	
			CV
[12]	PLACE Breaker 2-BKR-268-1/10-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	0, at Hydrogen i the ON	
[13]	PLACE Breaker 2-BKR-268-1/11-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in	1, at Hydrogen a the ON	CV
			CV
[14]	PLACE Breaker 2-BKR-268-1/12-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	2, at Hydrogen n the ON	
			CV
[15]	PLACE Breaker 2-BKR-268-1/13-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	3, at Hydrogen i the ON	
	· · · ·		
[16]	PLACE Breaker 2-BKR-268-1/14-A, Breaker 1 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	4, at Hydrogen n the ON	

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	Data	Package: Page of	Date	
6.2	Hydro	ogen Igniter Functional Tests - Train A (contin	nued)	
	[17]	PLACE Breaker 2-BKR-268-1/15-A, Breaker 15 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	5, at Hydrogen the ON	
				CV
	[18]	PLACE Breaker 2-BKR-268-1/16-A, Breaker 16 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	6, at Hydrogen the ON	
	[19]	PLACE Breaker 2-BKR-268-1/17-A, Breaker 17 Mitigation Distribution Panel 2-DPL-268-1-A, in position.	7, at Hydrogen the ON	
				CV

NOTE

Breaker 18, 2-BKR-268-1/18-A, is a spare breaker.

CAUTION

The following steps energize the hydrogen igniters creating fire and safety hazard.

- Before the following steps, inspect each igniter to ensure no flammable material is within 2 feet of the igniters.
- All entrances to the Unit 2 reactor building must be posted with personnel to brief those entering the building after operations announce that the igniters will be energized.
 - [20] **NOTIFY** operations to announce that Hydrogen Igniter Heaters will be energized in the Containment, **AND**

RECEIVE concurrence to proceed.

U	/BN nit 2	PERMANENT HYD	ROGEN MITIGATION STEM	2-PTI-268-01 Rev. 0000 Page 67 of 123
· ·	Data P	ackage: Page of		Date
6.2	Hydro	gen Igniter Functional	Tests - Train A (conti	nued)
	[21]	PLACE Handswitch 2-H the ON position at MCR	IS-268-73, H2 IGNITEF Panel 2-M-10, AND	RS GROUP A, in
		RECORD time.		
		Time		
•	[22]	RECORD Phase-to-Pha Panel 2-DPL-268-1-A, A	ise bus voltage measur ND	rements at
		VERIFY voltage is betwee	een 230.36 V _{AC} and 23	3.82 V _{AC} .
		Α.		
		M&TE		Cal Due Date
				N
			A-B	VAC
			А-в	(230.36-233.82
			А-в	V _{AC} (230.36-233.82
		В.	А-В	V _{AC} (230.36-233.82
		B. M&TE _	А-В	V _{AC} (230.36-233.82 Cal Due Date
		B. M&TE _	А-В	V _{AC} (230.36-233.82 Cal Due Date V _{AC}
		B. M&TE _	А-В	V _{AC} (230.36-233.82 Cal Due Date V _{AC} (230.36-233.82
		B. M&TE _	А-В	VAC (230.36-233.82 Cal Due Date VAC (230.36-233.82
•		B. M&TE _	А-В	V _{AC} (230.36-233.82 Cal Due Date V _{AC} (230.36-233.82
• •		B. M&TE _ C. M&TE _	А-В	V _{AC} (230.36-233.82 Cal Due Date (230.36-233.82 (230.36-233.82
		B. M&TE _ C. M&TE _	А-В	V _{AC} (230.36-233.82 Cal Due Date (230.36-233.82 Cal Due Date V _{AC}

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Date

6.2 Hydrogen Igniter Functional Tests - Train A (continued)

[23] IF any voltage measurement in 6.2[22] is NOT 230.26 to 233.82 V_{AC} , THEN

ADJUST potentiometer R13 in 2-DXF-268-268-1-A on control board A1A for Phase A, A1B for Phase B, and A1C for Phase C so that each phase is 230.26 to 233.82 V_{AC}, **AND**

RECORD as-left voltages for each phase below:

A. Phase A to Phase B:

		V _{AC}
B.	Phase B to Phase C:	
		V _{AC}
C.	Phase C to Phase A:	
		V _{AC}

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Date ____

6.2 Hydrogen Igniter Functional Tests - Train A (continued)

NOTE Voltage measurements in the following steps are to be taken to circuit neutral and not to common ground.

[24] **RECORD** Phase-to-Neutral bus voltage measurements at Panel 2-DPL-268-1-A, **AND**

VERIFY voltage is between 132 and 135 V_{AC}.

	M&TE	Cal Due Date
	A-NEUTRAL	V _{AC} (132 - 135 V _{AC})
В.		· · · · · · · · · · · · · · · · · · ·
·	M&TE	Cal Due Date
	B-NEUTRAL	V _{AC} (132 - 135 V _{AC})
C.	·	
	M&TE	_ Cal Due Date
	C-NEUTRAL	V _{AC} (132 - 135 V _{AC})

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Cal Due Date

6.2 Hydrogen Igniter Functional Tests - Train A (continued)

M&TE

NOTES

- 1) Breaker #18 is a spare breaker.
- 2) The following step verifies both igniters are energized by measuring a current greater than 7.4 amperes at the breaker.
- 3) If the current reading is between 3.7 and 4.4 amperes one igniter is considered to be operable.
- 4) Current readings between 4.4 and 7.4 indicate a fault of an indeterminable nature and will require further troubleshooting to resolve.
 - [25] **VERIFY** 7.4 amperes or greater measured at each breaker (#1 through #17 in any order) at Panel 2-DPL-268-1-A after a minimum of 5 minutes from time recorded in Step 6.2[21].

		· · ·	-
BREAKER NUMBER	AMPERES	BREAKER NUMBER	AMPERES
1		10	
2		11	
3		12	
4		13	
5		14	
6		15	
7		16	
8		17	
9			

[26] **PLACE** Handswitch 2-HS-268-73, H2 IGNITERS GROUP A, in the OFF position, **AND**

RECORD time:

Time _____
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Date ____

6.2 Hydrogen Igniter Functional Tests - Train A (continued)

[27] WHEN the hydrogen igniters have been allowed to cool for at least 30 minutes, THEN

PLACE Handswitch 2-HS-268-73, H2 IGNITERS GROUP A, in the ON position, **AND**

RECORD time.

Time _____

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6.2 Hydrogen Igniter Functional Tests - Train A (continued)

	NOTES
1)	Measurements of igniter temperatures are by line-of-sight view (profile or oblique) using optical thermography and should indicate a stabilized temperature. Directly head-on (end) views of the hydrogen igniter may measure lower than actual temperature and should be avoided. See Appendix C, Temperature Conversion Chart, for conversion from °C to °F, if required.
2)	Steps 6.2[28] and 6.2[29] are performed concurrently by breaker number.

3) Igniter Component ID numbers are typical of the following example: (#1 is 2-HTR-268-0001 and #66 is 2-HTR-268-0066).

MEASURE and **RECORD** each of the following hydrogen igniter heater temperatures (in any order by breaker number) using an optical infrared thermometer or a contact thermometer: (See Figures 1 thru 5 for igniter locations)

HYDROGEN IGNITER HEATER	TEMPERATURE	HYDROGEN IGNITER HEATER	TEMPERATURE	BREAKER NUMBER
#1	۰F	#32	°F	BKR #1
#2	°F	#23	°F	BKR #2
#5	۰F	#6	°F	BKR #3
#7	۰F	#8	°F	BKR #4
#13	- °F	#14	°F	- BKR #5
#15	°F	#16	°F	BKR #6
#21	۰F	#22	°F	BKR #7
#25	۴	#53	۴	BKR #8
#24	°F	#29	٩°	BKR #9
#30	۴	#31	٩°	BKR #10
#35	°F	#36	۰F	BKR #11
#26	°F	#33	°F	BKR #12
#34	٩F	#42	۰F	BKR #13
#49	٩F	#50	۰F	BKR #14
#54	۴	#55	°F	BKR #15
#27	۴	#28	٩	BKR #16
#65	°F	#66	٩c	BKR #17

M&TE

Cal Due Date

^[28] WHEN the hydrogen igniters have warmed up 5 minutes to allow the current to the igniters to stabilize, THEN

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6.2	Hydrog	gen Igniter Functional Tests - Train A (conti	nued)

1)

2)

	NOTES	
The following s measurements measured by in	tep is performed concurrently with Step 6.2 as close as possible to the time when ignit indicated breaker number.	[28] in a manner to obtain er temperatures are
Power Factor of	of 1.0 is assumed for calculation.	
[29] CAL (2-DP	CULATE total load wattage for each Panel L-268-1-A Breaker as follows: (Acc Crit)	· · · · · · · · · · · · · · · · · · ·
VOLTI		Cal Due Date
AMN	METER M&TE	Cal Due Date
[29.1]	RECORD Volts and Amps measurements 2-BKR-268-1/1-A, (Breaker 1).	for
	VOLTS AN	IPS
[29.2]	MULTIPLY Volts and Amps measurement previous step, AND RECORD total load wattage for 2-BKR-26 (Breaker 1). Watts Calculatio	ts recorded in 8-1/1-A, ns Performed by:
	Calculatio	ns Verified by:
[29.3]	RECORD Volts and Amps measurements 2-BKR-268-1/2-A. (Breaker 2).	for

VOLTS

AMPS

Data Package: Page ____ of ____ Date 6.2 Hydrogen Igniter Functional Tests - Train A (continued) [29.4] **MULTIPLY** Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/2-A, (Breaker 2). Watts Calculations Performed by: Calculations Verified by: [29.5] **RECORD** Volts and Amps measurements for 2-BKR-268-1/3-A, (Breaker 3). AMPS VOLTS [29.6] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/3-A, (Breaker 3). Watts Calculations Performed by: Calculations Verified by: [29.7] **RECORD** Volts and Amps measurements for 2-BKR-268-1/4-A, (Breaker 4). AMPS VOLTS

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6.2	Hydrogen	Igniter Functional Tests -	Train A (conti	nued)
	[29.8]	MULTIPLY Volts and Amp previous step, AND	os measuremei	nts recorded in
		RECORD total load watta (Breaker 4).	ge for 2-BKR-2	68-1/4-A,
		Watts		
			Calculati	ons Performed by:
			Calculati	ons Verified by:
	[29.9]	RECORD Volts and Amps 2-BKR-268-1/5-A, (Breake	measurement er 5).	s for
	·	VOLTS	А	MPS
	[29.10]	MULTIPLY Volts and Amp previous step, AND	os measureme	nts recorded in
		RECORD total load watta (Breaker 5).	ge for 2-BKR-2	68-1/5 - A,
		Watts	,	
			Calculati	ons Performed by:
			Calculati	ons Verified by:
	[29.11]	RECORD Volts and Amps 2-BKR-268-1/6-A, (Breake	s measurement er 6).	s for
		VOLTS	A	MPS
				-
				,

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6.2	Hydrogen	Igniter Funct	ional Tests - Tra	in A (conti	nued)
	[29.12]	MULTIPLY	Volts and Amps p, AND	measuremei	nts recorded in
		RECORD to (Breaker 6).	tal load wattage	for 2-BKR-2	68-1/6-A,
			Watts		
				Calculati	ons Performed by:
				Calculati	ons Verified by:
	[29.13]	RECORD V 2-BKR-268-	olts and Amps m 1/7-A, (Breaker 7	easurement	s for
			VOLTS	A	MPS
	[29.14]	MULTIPLY previous ste	Volts and Amps p, AND	measureme	- nts recorded in
		RECORD to (Breaker 7).	tal load wattage	for 2-BKR-2	268-1/7-A,
			Watts		
				Calculati	ions Performed by:
				Calculati	ions Verified by:
	[29.15]	RECORD V 2-BKR-268-	olts and Amps m 1/8-A, (Breaker &	easurement 3).	ts for
			VOLTS	Δ	MPS
					-

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6.2 Hydrogen	gniter Functional Tests - Tr	ain A (continued)
[29.16]	MULTIPLY Volts and Amps previous step, AND	measurements recorded in
	RECORD total load wattage (Breaker 8).	for 2-BKR-268-1/8-A,
	Watts	
		Calculations Performed by:
		Calculations Verified by:
[29.17]	RECORD Volts and Amps n 2-BKR-268-1/9-A, (Breaker	neasurements for 9).
	VOLTS	AMPS
[29.18]	MULTIPLY Volts and Amps previous step, AND	measurements recorded in
	RECORD total load wattage (Breaker 9).	for 2-BKR-268-1/9-A,
	Watts	
		Calculations Performed by:
		Calculations Verified by:
[29.19]	RECORD Volts and Amps r 2-BKR-268-1/10-A, (Breake	neasurements for r 10).
	VOLTS	AMPS

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6.2 Hydrogen	Igniter Functional Tests - Train A (conti	nued)
[29.20]	MULTIPLY Volts and Amps measurement previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 10).	68-1/10-A,
	Watts	
	Calculati	ons Performed by:
	Calculati	ons Verified by:
[29.21]	RECORD Volts and Amps measurement 2-BKR-268-1/11-A, (Breaker 11).	ts for
	VOLTS A	MPS
[29.22]	MULTIPLY Volts and Amps measureme previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 11).	268-1/11-A,
	Watts	
	Calculat	ions Performed by:
	Calculat	ions Verified by:
[29.23]	RECORD Volts and Amps measuremen 2-BKR-268-1/12-A, (Breaker 12).	ts for
	VOLTS A	MPS

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Hydrogen Igniter Functional Tests - Train A (continued) [29.24] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/12-A, (Breaker 12). Watts Calculations Performed by: Calculations Verified by: [29.25] RECORD Volts and Amps measurements for 2-BKR-268-1/13-A, (Breaker 13). VOLTSAMPS [29.26] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/13-A, (Breaker 13). Watts [29.26] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/13-A, (Breaker 13). Watts Calculations Performed by: Calculations Verified by: Calculations Verified by: Calculations Verified by: VOLTSAMPS [29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/14-A, (Breaker 14). VOLTSAMPS		Data Pack	age: Page of	Date
[29.24] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/12-A, (Breaker 12).	.2	Hydrogen	Igniter Functional Tests - Train A (co	ontinued)
RECORD total load wattage for 2-BKR-268-1/12-A, (Breaker 12). Watts Calculations Performed by: Calculations Verified by: [29.25] RECORD Volts and Amps measurements for 2-BKR-268-1/13-A, (Breaker 13). VOLTS AMPS [29.26] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/13-A, (Breaker 13). Watts Calculations Performed by: Watts Calculations Verified by: [29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/13-A, (Breaker 13). Watts Calculations Verified by:	÷.	[29.24]	MULTIPLY Volts and Amps measure previous step, AND	ments recorded in
Watts Calculations Performed by: Calculations Verified by: [29.25] RECORD Volts and Amps measurements for 2-BKR-268-1/13-A, (Breaker 13). VOLTSAMPS [29.26] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/13-A, (Breaker 13). Watts Calculations Verified by: [29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/14-A, (Breaker 14). VOLTS			RECORD total load wattage for 2-BK (Breaker 12).	R-268-1/12-A,
Calculations Performed by: Calculations Verified by: [29.25] RECORD Volts and Amps measurements for 2-BKR-268-1/13-A, (Breaker 13). VOLTS AMPS			Watts	
Calculations Verified by: [29.25] RECORD Volts and Amps measurements for 2-BKR-268-1/13-A, (Breaker 13). VOLTS AMPS			Calcu	ulations Performed by:
[29.25] RECORD Volts and Amps measurements for 2-BKR-268-1/13-A, (Breaker 13).			Calcu	ulations Verified by:
VOLTS AMPS		[29.25]	RECORD Volts and Amps measurem 2-BKR-268-1/13-A, (Breaker 13).	nents for
[29.26] MULTIPLY Volts and Amps measurements recorded in previous step, AND RECORD total load wattage for 2-BKR-268-1/13-A, (Breaker 13). Watts Calculations Performed by: Calculations Verified by: [29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/14-A, (Breaker 14). VOLTS AMPS			VOLTS	AMPS
Watts Calculations Performed by: Calculations Verified by: [29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/14-A, (Breaker 14). VOLTS AMPS		[29.26]	MULTIPLY Volts and Amps measure previous step, AND RECORD total load wattage for 2-BK (Breaker 13).	ements recorded in R-268-1/13-A,
Calculations Performed by: Calculations Verified by: [29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/14-A, (Breaker 14). VOLTS AMPS			Watts	· · · · ·
Calculations Verified by: [29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/14-A, (Breaker 14). VOLTS AMPS			Calc	ulations Performed by:
[29.27] RECORD Volts and Amps measurements for 2-BKR-268-1/14-A, (Breaker 14). VOLTS AMPS			Calc	ulations Verified by:
VOLTS AMPS		[29.27]	RECORD Volts and Amps measuren 2-BKR-268-1/14-A, (Breaker 14).	nents for
			VOLTS	AMPS
			· · · · · · · · · · · · · · · · · · ·	

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2 Hydrogen	Igniter Functional Tests - Train A (co	ntinued)
[29.28]	MULTIPLY Volts and Amps measured previous step, AND	ments recorded in
	RECORD total load wattage for 2-BKI (Breaker 14).	R-268-1/14-A,
	Watts	
	Calcu	lations Performed by:
	Calcu	lations Verified by:
[29.29]	RECORD Volts and Amps measurem 2-BKR-268-1/15-A, (Breaker 15).	ents for
	VOLTS	AMPS
[29.30]	MULTIPLY Volts and Amps measure previous step, AND RECORD total load wattage for 2-BKI (Breaker 15).	ments recorded in R-268-1/15-A,
	Watts	
	Calcu	lations Performed by:
	Calcu	lations Verified by:
[29.31]	RECORD Volts and Amps measurem 2-BKR-268-1/16-A, (Breaker 16).	ents for
	VOLTS	AMPS

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.2	Hydrogen	Igniter Functional Tests - Trai	n A (continued)
	[29.32]	MULTIPLY Volts and Amps m previous step, AND	easurements recorded in
		RECORD total load wattage fo (Breaker 16).	or 2-BKR-268-1/16-A,
		Watts	١
·	· .		Calculations Performed by:
			Calculations Verified by:
	[29.33]	RECORD Volts and Amps me 2-BKR-268-1/17-A, (Breaker 1	asurements for 7).
		VOLTS	AMPS
	[29.34]	MULTIPLY Volts and Amps m previous step, AND	easurements recorded in
		RECORD total load wattage for (Breaker 17).	or 2-BKR-268-1/17-A,
	`	Watts	
	• •		Calculations Performed by:
			Calculations Verified by:

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WBN Unit 2		PERMANENT HYDROGEN MITIGATION SYSTEM	N 2-PTI-268-01 Rev. 0000 Page 82 of 123
D	ata Pac	kage: Page of	Date
6.2 H	lydroge	n Igniter Functional Tests - Train A (con	ntinued)
		NOTE	. <u> </u>
Each igni igniter cir	iter is ve cuit.	rified to be OFF by observing a current les	ss than 3.7 amperes across the
[3	30] O F	PEN 2-BKR-268-1/1-A (Breaker 1).	
			CV
	A.	VERIFY Igniter #1 is observed to be OF	F
	B.	VERIFY Igniter #32 is observed to be O	FF
[3	31] CL	-OSE 2-BKR-268-1/1-A (Breaker 1).	
			CV
E	32] O I	2EN 2-BKR-268-1/2-A (Breaker 2).	
			CV
	A.	VERIFY Igniter #2 is observed to be OF	·F
	, В.	VERIFY Igniter #23 is observed to be O)FF
[:	33] C I	-OSE 2-BKR-268-1/2-A (Breaker 2).	<u> </u>
Ľ,	34] 이	PEN 2-BKR-268-1/3-4 (Breaker 3)	
Ľ			
			CV
	A.	VERIFY Igniter #5 is observed to be OF	=F
	В.	VERIFY Igniter #6 is observed to be OF	F

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION 2-PT SYSTEM Rev. Page	I-268-01 0000 ∌ 83 of 123
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6.2	Hydro	ogen Igniter Functional Tests - Train A (continued)	
	[35]	CLOSE 2-BKR-268-1/3-A (Breaker 3).	
	[36]	OPEN 2-BKR-268-1/4-4 (Breaker 4)	CV
	[00]		
			CV
		A. VERIFY Igniter #7 is observed to be OFF.	
		B. VERIFY Igniter #8 is observed to be OFF.	
	[37]	CLOSE 2-BKR-268-1/4-A (Breaker 4).	
	[38]	OPEN 2 RKD 268 1/5 A (Procker 5)	CV
	[90]		
			CV
		A. VERIFY Igniter #13 is observed to be OFF.	
		B. VERIFY Igniter #14 is observed to be OFF.	
	[39]	CLOSE 2-BKR-268-1/5-A (Breaker 5).	
	[40]	OPEN 2 RKP 269 1/6 A (Brooker 6)	00
	[40]	OPEN 2-DRR-200-1/0-A (Dieakei 0).	
			CV
		A. VERIFY Igniter #15 is observed to be OFF.	,
		B. VERIFY Igniter #16 is observed to be OFF.	

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	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 84 of 123	
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6.2	Hydro	ogen Igniter Functional Tests - Train A (contin	nued)	
	[41]	CLOSE 2-BKR-268-1/6-A (Breaker 6).	<i>.</i>	
				CV
	[42]	OPEN 2-BKR-268-1/7-A (Breaker 7).	,	
• •				CV
		A. VERIFY Igniter #21 is observed to be OFF	:	
		B. VERIFY Igniter #22 is observed to be OFF	:,	
	[43]	CLOSE 2-BKR-268-1/7-A (Breaker 7).		
				CV
	[44]	OPEN 2-BKR-268-1/8-A (Breaker 8).		. <u></u>
		. · ·		CV
		A. VERIFY Igniter #25 is observed to be OFF	·. ·	
		B. VERIFY Igniter #53 is observed to be OFF	·.	
	[45]	CLOSE 2-BKR-268-1/8-A (Breaker 8).	N	·
				CV
	[46]	OPEN 2-BKR-268-1/9-A (Breaker 9).		<u> </u>
				CV
		A. VERIFY Igniter #24 is observed to be OFF	- .	
		B. VERIFY Igniter #29 is observed to be OFF	. .	

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	WBN Unit 2		PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 85 of 123	
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6.2	Hydro	oger	Igniter Functional Tests - Train A (contin	nued)	
	[47]	CL	OSE 2-BKR-268-1/9-A (Breaker 9).		
					CV
	[48]	OP	EN 2-BKR-268-1/10-A (Breaker 10).		
					CV
		Α.	VERIFY Igniter #30 is observed to be OFF	:	
		В.	VERIFY Igniter #31 is observed to be OFF	·.	
	[49]	CL	OSE 2-BKR-268-1/10-A (Breaker 10).		
					CV
	[50]	OP	EN 2-BKR-268-1/11-A (Breaker 11).		
		·			CV
		A.	VERIFY Igniter #35 is observed to be OFF	-	
		В.	VERIFY Igniter #36 is observed to be OFF	- .	
	[51]	CL	OSE 2-BKR-268-1/11-A (Breaker 11).		
					CV
	[52]	OP	EN 2-BKR-268-1/12-A (Breaker 12).		
		A.	VERIFY Igniter #26 is observed to be OFF		. <u></u>
		В.	VERIFY Igniter #33 is observed to be OFF		

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Da	a Pac	kage: Page of	Date _	
6.2 Hy	droge	n Igniter Functional Tests - Train A (con	tinued)	·
[53] C L	-OSE 2-BKR-268-1/12-A (Breaker 12).		
			· _	
54	1 O F	2EN 2-BKR-268-1/13-A (Breaker 13).		
	,		-	
			-	CV
	Α.	VERIFY Igniter #34 is observed to be OI	FF	,
	В.	VERIFY Igniter #42 is observed to be O	FF	
[55] CL	-OSE 2-BKR-268-1/13-A (Breaker 13).	-	
			-	CV
[56] O F	PEN 2-BKR-268-1/14-A (Breaker 14).	·	
			_	
				CV
	А.	VERIFY Igniter #49 is observed to be O		
167	В. 1 О			
[07		- USE 2-DRR-200-1/14-A (bleakel 14).	-	
•			· _	CV
[58] 0	PEN 2-BKR-268-1/15-A (Breaker 15).	. –	,
			-	
	Δ	VERIEV laniter $#54$ is observed to be Ω	FF	UV
	Л.		· · ·	

	WBN Unit 2		PERMANENT HYDROGEN MITIGA SYSTEM	TION	2-PTI-268-01 Rev. 0000 Page 87 of 123	
	Data	Pacl	age: Page of		Date	
6.2	Hydr	oger	Igniter Functional Tests - Train A (conti	nued)	
	[59]	CL	OSE 2-BKR-268-1/15-A (Breaker 15).			
						CV
	[60]	OP	EN 2-BKR-268-1/16-A (Breaker 16).			
						CV
		Α.	VERIFY Igniter #27 is observed to be	e OFF		
		В.	VERIFY Igniter #28 is observed to be	e OFF	:	
	[61]	CL	OSE 2-BKR-268-1/16-A (Breaker 16).			
			• •			CV
	[62]	OP	EN 2-BKR-268-1/17-A (Breaker 17).			
						CV
		Α.	VERIFY Igniter #65 is observed to b	e OFF		<u></u>
		в.	VERIFY Igniter #66 is observed to b	e OFF	.	
	[63]	CL	OSE 2-BKR-268-1/17-A (Breaker 17).			
						CV
					•	

	^	_	_
N	[]		-
	~		_

Breaker 18, 2-BKR-268-1/18-A, is a spare breaker.

- [64] **VERIFY** each igniter temperature recorded in step6.2[28] is 1741.2°F or greater. (Acc Crit)
- [65] **VERIFY** wattages recorded in Step 6.2[29] do not individually exceed 1335.3 watts. (Acc Crit)

ļ	WBN Unit 2		PERMA	NENT HYDE SYS	ROGEN MITIGATION	2-PTI-268-0 Rev. 0000 Page 88 of 1	123
	Data	Pacl	kage: Pa	ige of			Date
.2	Hydro	oger	Igniter	Functional 1	lests - Train A (cont	inued)	
	[66]	RE Pai	CORD Pl nel 2-DPl	hase-to-Pha: 268-1-A, A	se bus voltage measu ND	rements at	
		VE	RIFY volt	age is betwe	en 230.36 V _{AC} and 2	33.82 V _{AC} .	
		Α.					
				M&TE _		Cal Due I	Date
					А-В	V _{AC}	
							(230.36-233.82 V _A
		B.					
				M&TE _		Cal Due I	Date
					В-С	V _{AC}	
					·		(230.36-233.82 V _A
						•	
		C.					,
				M&TE _		Cal Due	Date
					C-A	V _{AC}	
						·	(230.36-233.82 V _A

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Date __

VAC

 V_{AC}

VAC

6.2 Hydrogen Igniter Functional Tests - Train A (continued)

[67] IF any voltage measurement in 6.2[66] is NOT 230.26 to 233.82 V_{AC} , THEN

ADJUST potentiometer R13 in 2-DXF-268-268-1-A on control board A1A for Phase A, A1B for Phase B, and A1C for Phase C so that each phase is 230.26 to 233.82 V_{AC}, **AND**

RECORD as-left voltages for each phase below:

A. Phase A to Phase B:

B. Phase B to Phase C:

C. Phase C to Phase A:

	WBN Unit 2	PERMANENT HYD	DROGEN MITIGATION	2-PTI-268-01 Rev. 0000 Page 90 of 12	3
	Data F	Package: Page o	f		Date
6.2	Hydro	ogen Igniter Functional	Tests - Train A (conti	nued)	
	[68]	RECORD Phase-to-Ne Panel 2-DPL-268-1-A, A	utral bus voltage measu AND	irements at	
•	,	VERIFY voltage is betw	veen 132 and 135 V_{AC} .		
		Α.			
		M&TE		Cal Due Da	ate
			A-NEUTRAL	V _{AC}	(132 - 135 V _{AC})
		В.	,		<u> </u>
		M&TE		Cal Due Da	ate
			B-NEUTRAL	V _{AC}	(132 - 135 V _{AC})
		С.			
		M&TE		Cal Due Da	ate
			C-NEUTRAL	V _{AC}	(132 - 135 V _{AC})
	[69]	PLACE Handswitch 2- the OFF position.	HS-268-73, H2 IGNITEI	rs group a, i	in

WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 91 of 123
Data Pa	ackage: Page of	Date
.3 Hydrog	jen Igniter Functional Tests - Train B	
	NOTE	· · ·
Subsections 6.	2 and 6.3 may be performed concurrently	· · · · · · · · · · · · · · · · · · ·
[1] 	VERIFY prerequisites listed in Section 4.0 for S nave been completed.	Subsection 6.3
[2]	ENSURE the following PHMS Supply Breaker, 2-BKR-268-2-B, PERMANENT HYDROGEN M SYSTEM 2-DXF-268-2-B, at Compt 12C of Boa he ON position.	Breaker IITIGATION ard 2B1-B, is in
		CV

NOTE

Hydrogen Mitigation Distribution Panel 2-DPL-268-2-B is located at COL A12V, EL 782'.

[3] **PLACE** Breaker 2-BKR-268-2/1-B, Breaker 1, at Hydrogen Mitigation Distribution Panel 2-DPL-268-2-B, in the ON position.

[4] **PLACE** Breaker 2-BKR-268-2/2-B, Breaker 2, at Hydrogen Mitigation Distribution Panel 2-DPL-268-2-B, in the ON position. CV

CV

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 92 of 12	23
	Data	Package: Page of		Date
6.3	Hydro	ogen Igniter Functional Tests - Train B (conti	nued)	
	[5]	PLACE Breaker 2-BKR-268-2/3-B, Breaker 3, a Mitigation Distribution Panel 2-DPL-268-2-B, in position.	at Hydrogen the ON	<u></u>
				CV
	[6]	PLACE Breaker 2-BKR-268-2/4-B, Breaker 4, a Mitigation Distribution Panel 2-DPL-268-2-B, in position.	at Hydrogen the ON	
				CV
	[7]	PLACE Breaker 2-BKR-268-2/5-B, Breaker 5, a Mitigation Distribution Panel 2-DPL-268-2-B, in position.	at Hydrogen the ON	
,				CV
	[8]	PLACE Breaker 2-BKR-268-2/6-B, Breaker 6, a Mitigation Distribution Panel 2-DPL-268-2-B, in position.	at Hydrogen i the ON	
				CV
	[9]	PLACE Breaker 2-BKR-268-2/7-B, Breaker 7, Mitigation Distribution Panel 2-DPL-268-2-B, in position.	at Hydrogen i the ON	·
				CV
	[10]	PLACE Breaker 2-BKR-268-2/8-B, Breaker 8, Mitigation Distribution Panel 2-DPL-268-2-B, in position.	at Hydrogen n the ON	
				CV

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WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 93 of 123	
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6.3 Hydr	ogen Igniter Functional Tests - Train B (conti	nued)	
[11]	PLACE Breaker 2-BKR-268-2/9-B, Breaker 9, Mitigation Distribution Panel 2-DPL-268-2-B, in position.	at Hydrogen the ON	
		-	CV
[12]	PLACE Breaker 2-BKR-268-2/10-B, Breaker 1 Mitigation Distribution Panel 2-DPL-268-2-B, in position.	0, at Hydrogen a the ON	
			CV
[13]	PLACE Breaker 2-BKR-268-2/11-B, Breaker 1 Mitigation Distribution Panel 2-DPL-268-2-B, in position.	1, at Hydrogen i the ON	
	· · ·		CV
[14]	PLACE Breaker 2-BKR-268-2/12-B, Breaker 1 Mitigation Distribution Panel 2-DPL-268-2-B, ir position.	2, at Hydrogen i the ON	
	•		CV
[15]	PLACE Breaker 2-BKR-268-2/13-B, Breaker 1 Mitigation Distribution Panel 2-DPL-268-2-B, ir position.	3, at Hydrogen a the ON	
			CV
[16]	PLACE Breaker 2-BKR-268-2/14-B, Breaker 1 Mitigation Distribution Panel 2-DPL-268-2-B, ir	4, at Hydrogen i the ON	

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	N 2-PTI-268-01 Rev. 0000 Page 94 of 123	
	Data	Package: Page of	Date	Ð
6.3	Hydro	ogen Igniter Functional Tests - Train B (con	tinued)	
	[17]	PLACE Breaker 2-BKR-268-2/15-B, Breaker Mitigation Distribution Panel 2-DPL-268-2-B, position.	15, at Hydrogen in the ON	
				CV
	[18]	PLACE Breaker 2-BKR-268-2/16-B, Breaker Mitigation Distribution Panel 2-DPL-268-2-B, position.	16, at Hydrogen in the ON	
				CV
	[19]	PLACE Breaker 2-BKR-268-2/17-B, Breaker Mitigation Distribution Panel 2-DPL-268-2-B, position.	17, at Hydrogen in the ON	
				CV

NOTE

Breaker 18, 2-BKR-268-1/18-A, is a spare breaker.

CAUTION

The following steps energize the hydrogen igniters creating fire and safety hazard.

- Before the following steps, inspect each igniter to ensure no flammable material is within 2 feet of the igniters.
- All entrances to the Unit 2 reactor building must be posted with personnel to brief those entering the building after operations announce that the igniters will be energized.
 - [20] **NOTIFY** operations to announce that Hydrogen Igniter Heaters will be energized in the Containment, **AND**

RECEIVE concurrence to proceed.

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	Data F	Package: Page of _			Date
6.3	Hydro	gen Igniter Functional 1	ests - Train B (contir	nued)	
	[21]	PLACE Handswitch 2-HS at MRC Panel 2-M-10, in	S-268-74, H2 IGNITER the ON position, AND	RS GROUP B,	
<i>،</i>		RECORD time.			
		Time			·
	[22]	RECORD Phase-to-Phase Panel 2-DPL-268-2-B, A	se bus voltage measur ND	ements at	
		VERIFY voltage is betwe	en 230.36 V _{AC} and 23	3.82 V _{AC} .	
		M&TE _		Cal Due D	ate
			A-B	V _{AC}	
					(230.36-233.82 V _{AC}
		В.		•	
		M&TE _		Cal Due D	ate
Ň			B-C	V _{AC}	
					(230.36-233.82 V _{AC}
					<u> </u>
		С.			
		M&TE _		Cal Due D	ate
			C-A	V _{AC}	
					(230.36-233.82 V _{AC}

VAC

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Date _____

Hydrogen Igniter Functional Tests - Train B (continued) 6.3

IF any voltage measurement in 6.3[22] is NOT 230.26 to [23] 233.82 V_{AC}, THEN

> ADJUST potentiometer R13 in 2-DXF-268-268-2-B on control board A1A for Phase A, A1B for Phase B, and A1C for Phase C so that each phase is 230.26 to 233.82 $V_{AC},\,\text{AND}$

RECORD as-left voltages for each phase below:

A. Phase A to Phase B:

		V _{AC}
B.	Phase B to Phase C:	
		V _{AC}
C.	Phase C to Phase A:	

	WBN Unit 2	PERMANE	NT HY S	DROGEN MITIGATION YSTEM	2-PTI-268-0 Rev. 0000 Page 97 of)1 123
	Data P	ackage: Page	0	of		Date
6.3	Hydrog	gen Igniter Fu	nctiona	I Tests - Train B (conti	nued)	
	[24]	RECORD Phas Panel 2-DPL-20	e-to-Ne 68-2-B,	eutral bus voltage measu and	rements at	
	,	VERIFY voltage	e is betv	ween 132 and 135 V_{AC} .		
		A.	s.			
			M&TE		Cal Due	Date
				A-NEUTRAL	V _{AC}	(132 - 135 V _{AC})
		В.				
			M&TE		Cal Due	Date
				B-NEUTRAL	V _{AC}	(132 - 135 V _{AC})
		С.				<u></u>
			M&TE		Cal Due	Date
				C-NEUTRAL	V _{AC}	(132 - 135 V _{AC})
						+ * -

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Date ____

6.3 Hydrogen Igniter Functional Tests - Train B (continued)

NOTE

- 1) The following step verifies both igniters are energized by measuring a current greater than 7.4 amperes at the breaker.
- 2) If the current reading is between 3.7 and 4.4 amperes one igniter is considered to be operable.
- 3) Current readings between 4.4 and 7.4 indicate a fault of an indeterminable nature and will require further troubleshooting to resolve.
- 4) Breaker #18 is a spare breaker.
 - [25] **VERIFY** 7.4 amperes or greater measured at each breaker (#1 through #17 in any order) at Panel 2-DPL-268-2-B after a minimum of 5 minutes from time recorded in Step 6.3[21].

	M&IE	Cal Du	e Date
BREAKER NUMBER	AMPERES	BREAKER NUMBER	AMPERES
1	-	. 10	
2		11	
3		12	
4		13	
5		14	
6		15	
7		16	
8		17	
9			

[26] **PLACE** Handswitch 2-HS-268-74, H2 IGNITERS GROUP B, in the OFF position, **AND**

RECORD time:

Time _____

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6.3 Hydrogen Igniter Functional Tests - Train B (continued)

WHEN the hydrogen igniters have been allowed to cool for at [27] least 30 minutes, THEN

PLACE Handswitch 2-HS-268-74, H2 IGNITERS GROUP B, in the ON position, AND

RECORD time.

Time _____

WBN Unit 2

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Date

6.3 Hydrogen Igniter Functional Tests - Train B (continued)

NOTES
 Measurements of igniter temperatures are by line-of-sight view (profile or oblique) using optical thermography and should indicate a stabilized temperature. Directly head-on (end) views of the hydrogen igniter may measure lower than actual temperature and should be avoided. See Appendix C, Temperature Conversion Chart, for conversion from °C to °F if required.

- 2) Steps 6.3[28] and 6.3[29] are performed concurrently by breaker number.
- 3) Igniter Component ID numbers are typical of the following example: (#3 is 2-HTR-268-0003 and #68 is 2-HTR-268-0068).

[28] WHEN the hydrogen igniters have warmed up 5 minutes to allow the current to the igniters to stabilize, THEN

MEASURE and **RECORD** each of the following hydrogen igniter heater temperatures (in any order by breaker number) using an optical infrared thermometer or a contact thermometer: (See Figures 1 thru 5 for igniter locations)

HYDROGEN IGNITER HEATER	TEMPERATURE	HYDROGEN IGNITER HEATER	TEMPERATURE	BREAKER NUMBER
#3	°F	#48	۴	BKR #1
#4	°F	#37	°F	BKR #2
#9	۰F	#10	°F	BKR #3
#11	°F	#12	°F	BKR #4
#17	۰F	#18	°F	BKR #5
#19	°F	#20	۰F	BKR #6
#38	۰F	#39	۰F	BKR #7
#43	٩٢	#44	۰F	BKR #8
#41	°F	#59	۰F	BKR #9
#45	٦°	#46	°F	BKR #10
#40	۴	#47	°F	BKR #11
#51	۰F	#52	۰F	BKR #12
#56	۰F	" #57	°F	BKR #13
#58	۰F	#60	۰F	BKR #14
#61	۴	#62	٩F	BKR #15
#63	٩	#64	°F	BKR #16
#67	۴	#68	°F	BKR #17

M&TE

Cal Due Date

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 101 of 123
	Data Pac	kage: Page of	Date
5.3	Hydroge	n Igniter Functional Tests - Train B (conti	nued)
	<u> </u>	NOTES	· · · · · · · · · · · · · · · · · · ·
1)	The following measuremer measured by	g step is performed concurrently with Step 6. Its as close as possible to the time when ign / indicated breaker number.	3[28] in a manner to obtain iter temperatures are
2)	Power Facto	r of 1.0 is assumed for calculation.	
	[29] CA 2-I	ALCULATE total load wattage for each Pane DPL-268-2-B Breaker as follows: (Acc Crit)	I
	VOL	TMETER M&TE	Cal Due Date
	A	MMETER M&TE	Cal Due Date
	[29.1]	RECORD Volts and Amps measurement 2-BKR-268-2/1-B, (Breaker 1).	s for
		VOLTS A	MPS
		· ·	
	[29.2]	MULTIPLY Volts and Amps measureme previous step, AND	nts recorded in
		RECORD total load wattage for 2-BKR-2 (Breaker 1).	68-2/1-B,
		Watts	
		Calculat	ons Performed by:
• _		Calculat	ons Verified by:
	[29.3]	RECORD Volts and Amps measuremen 2-BKR-268-2/2-B, (Breaker 2).	ts for

VOLTS AMPS

WBN Unit 2	PERMANENT HYDROGEN N SYSTEM	IITIGATION 2-P Rev Pag	PTI-268-01 v. 0000 ge 102 of 123			
Data Pack	age: Page of		Date			
Hydrogen	Igniter Functional Tests - Tr	ain B (continued	d)			
[29.4]	MULTIPLY Volts and Amps measurements recorded in previous step, AND					
	RECORD total load wattage (Breaker 2).	for 2-BKR-268-2	2/2-B,			
	Watts					
	· · · · · · · · · · · · · · · · · · ·	Calculations	Performed by:			
		Calculations	Verified by:			
[29.5]	RECORD Volts and Amps n 2-BKR-268-2/3-B, (Breaker	neasurements for 3).	r ,			
	VOLTS		5			
[29.6]	[29.6] MULTIPLY Volts and Amps measurements recorded previous step, AND		ecorded in			
	RECORD total load wattage (Breaker 3).	for 2-BKR-268-2	2/3-В,			
	Watts					
		Calculations	Performed by:			
		Calculations	Verified by:			
[29.7]	RECORD Volts and Amps r 2-BKR-268-2/4-B, (Breaker	neasurements fo 4).	r			
	VOLTS	AMP	S			
	·					

nit 2	PERMANENT HYDROGEN MITIGATI SYSTEM	ON 2-PTI-268-01 Rev. 0000 Page 103 of 123			
Data Packa	age: Page of	Date			
Hydrogen	Igniter Functional Tests - Train B (co	ontinued)			
[29.8]	MULTIPLY Volts and Amps measurements recorded in previous step, AND				
	RECORD total load wattage for 2-BK (Breaker 4).	R-268-2/4-B,			
	Watts				
	Calc	ulations Performed by:			
	Calc	ulations Verified by:			
[29.9]	RECORD Volts and Amps measuren 2-BKR-268-2/5-B, (Breaker 5).	nents for			
	VOLTS	AMPS			
[29.10]	MULTIPLY Volts and Amps measure previous step, AND	ements recorded in			
	RECORD total load wattage for 2-Bk (Breaker 5).	(R-268-2/5-B,			
	Watts				
	Calc	ulations Performed by:			
	Calc	ulations Verified by:			
[29.11]	RECORD Volts and Amps measurer 2-BKR-268-2/6-B, (Breaker 6).	nents for			

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Unit 2	SYSTEM	2-P11-268-01 Rev. 0000 Page 104 of 123
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6.3 Hydrogen	Igniter Functional Tests - Train B (conti	nued)
[29.12]	MULTIPLY Volts and Amps measurement previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 6).	268-2/6-B,
v	Watts	
	Calculati	ons Performed by:
	Calculati	ions Verified by:
[29.13]	RECORD Volts and Amps measurement 2-BKR-268-2/7-B, (Breaker 7).	ts for
	VOLTS A	MPS
[29.14]	MULTIPLY Volts and Amps measureme previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 7).	268-2/7-В,
	Watts	
	Calculat	ions Performed by:
	Calculat	ions Verified by:
[29.15]	RECORD Volts and Amps measuremen 2-BKR-268-2/8-B, (Breaker 8).	ts for
	VOLTS A	MPS

WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 105 of 123
Data Pacl	kage: Page of	Date
3.3 Hydrogen	Igniter Functional Tests - Train B (conti	nued)
[29.16]	MULTIPLY Volts and Amps measurement previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 8).	68-2/8-B,
	Watts	
	Calculati	ons Performed by:
	Calculati	ons Verified by:
[29.17]	RECORD Volts and Amps measurement 2-BKR-268-2/9-B, (Breaker 9).	s for
	VOLTS A	MPS
[29.18]	MULTIPLY Volts and Amps measureme previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 9).	68-2/9-B,
	Watts	
	Calculat	ions Performed by:
	Calculat	ons Verified by:
[29.19]	RECORD Volts and Amps measuremen 2-BKR-268-2/10-B, (Breaker 10).	is for
	VOLTS A	MPS

	·	Page 106 of 123	
Data Pac	kage: Page of	Date	
6.3 Hydroge	n Igniter Functional Tests - Train B (co	ontinued)	
[29.20	MULTIPLY Volts and Amps measure previous step, AND	ments recorded in	
	RECORD total load wattage for 2-BK (Breaker 10).	R-268-2/10-B,	
	Watts		
	Calcu	ulations Performed by:	
	Calcu	ulations Verified by:	
[29.21	 RECORD Volts and Amps measurem 2-BKR-268-2/11-B, (Breaker 11). 	nents for	
	VOLTS	AMPS	
[29.22	2] MULTIPLY Volts and Amps measure previous step, AND	ements recorded in	
	RECORD total load wattage for 2-BK (Breaker 11).	R-268-2/11-B,	
	Watts		
	Calc	ulations Performed by:	
	Calc	ulations Verified by:	
[29.23	 RECORD Volts and Amps measurem 2-BKR-268-2/12-B, (Breaker 12). 	nents for	
	VOLTS	AMPS	
	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 107 of 123
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	Data Pacl	age: Page of	Date
6.3	Hydroger	Igniter Functional Tests - Train B (conti	nued)
	[29.24]	MULTIPLY Volts and Amps measureme previous step, AND	nts recorded in
		RECORD total load wattage for 2-BKR-2 (Breaker 12).	68-2/12-В,
		Watts	
		Calculati	ions Performed by:
		Calculati	ons Verified by:
	[29.25]	RECORD Volts and Amps measurement 2-BKR-268-2/13-B, (Breaker 13).	ts for
		VOLTS A	MPS
	[29.26	MULTIPLY Volts and Amps measureme previous step, AND	nts recorded in
		RECORD total load wattage for 2-BKR-2 (Breaker 13).	268-2/13-B,
		Watts	
	,	Calculat	ions Performed by:
		Calculat	ions Verified by:
	[29.27	RECORD Volts and Amps measuremen 2-BKR-268-2/14-B, (Breaker 14).	ts for
		VOLTS A	MPS

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Data Packa	age: Page of	Date
Hydrogen	Igniter Functional Tests - Train B (conti	nued)
[29.28]	MULTIPLY Volts and Amps measurement previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 14).	68-2/14-B,
	Watts	
	Calculati	ons Performed by:
	Calculati	ons Verified by:
[29.29]	RECORD Volts and Amps measurement 2-BKR-268-2/15-B, (Breaker 15).	s for
	VOLTS A	MPS
[29.30]	MULTIPLY Volts and Amps measurement previous step, AND	nts recorded in
	RECORD total load wattage for 2-BKR-2 (Breaker 15).	68-2/15-B,
	Watts	
	Calculati	ons Performed by:
	Calculati	ons Verified by:
[29.31]	RECORD Volts and Amps measurement 2-BKR-268-2/16-B, (Breaker 16).	s for
	VOLTS A	MPS

WBN I Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 109 of 123	
Data Packa	nge: Page of	Date _	
6.3 Hydrogen I	gniter Functional Tests - Train B (contin	nued)	
[29.32]	MULTIPLY Volts and Amps measurement previous step, AND	nts recorded in	
	RECORD total load wattage for 2-BKR-2 (Breaker 16).	68-2/16-B,	
	Watts		
	Calculati	ons Performed by:	
	Calculati	ons Verified by:	
[29.33]	RECORD Volts and Amps measurement 2-BKR-268-2/17-B, (Breaker 17).	s for	
	VOLTS A	MPS	
[29.34]	MULTIPLY Volts and Amps measurement previous step, AND		
	RECORD total load wattage for 2-BKR-2 (Breaker 17).	68-2/17-B,	
	Watts		
	Calculati	ons Performed by:	
	Calculati	ons Verified by:	

WBN Unit 2	PERMANENT HYDROGEN MITIGAT SYSTEM	FION 2-PTI-268-01 Rev. 0000 Page 110 of 123
Data	Package: Page of	Date
.3 Hydro	ogen Igniter Functional Tests - Train B (o	continued)
· ·	NOTE	
Each igniter i igniter circuit.	s verified to be OFF by observing a current	less than 3.7 amperes across the
[30]	OPEN 2-BKR-268-2/1-B (Breaker 1).	
		CV
	A. VERIFY Igniter #3 is observed to be	OFF
	B. VERIFY Igniter #48 is observed to be	e OFF
[31]	CLOSE 2-BKR-268-2/1-B (Breaker 1).	
		CV
[32]	OPEN 2-BKR-268-2/2-B (Breaker 2).	
	A. VERIFY Igniter #4 is observed to be	OFF
	B. VERIFY Igniter #37 is observed to be	e OFF.
[33]	CLOSE 2-BKR-268-2/2-B (Breaker 2).	
		CV
[34]	OPEN 2-BKR-268-2/3-B (Breaker 3).	
		CV
	A. VERIFY Igniter #9 is observed to be	OFF.

.

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 111 of 123
	Data	Package: Page of	Date
5	Hydro	ogen Igniter Functional Tests - Train B (contin	nued)
	[35]	CLOSE 2-BKR-268-2/3-B (Breaker 3).	
	[36]	OPEN 2-BKD-268-2/4-B (Brooker 4)	
	[50]	$\mathbf{OPEN } 2 \cdot \mathbf{DRR} \cdot 200 \cdot 2/4 \cdot \mathbf{D} (\mathbf{Dreaker} + \mathbf{f}).$	
			C
		A. VERIFY Igniter #11 is observed to be OFF	- <u></u>
		B. VERIFY Igniter #12 is observed to be OFF	· · ·
	[37]	CLOSE 2-BKR-268-2/4-B (Breaker 4).	
:			C
	[38]	OPEN 2-BKR-268-2/5-B (Breaker 5).	
			C
		A. VERIFY igniter #17 is observed to be OFF	·
	[20]	CLOSE 2 BKB 268 2/5 B (Brooker 5)	·
	[39]	CLUSE 2-BRR-200-2/J-B (Bleaker 5).	
			C
,	[40]	OPEN 2-BKR-268-2/6-B (Breaker 6).	
		A. VERIFY laniter #19 is observed to be OFF	=
		B. VERIFY Igniter #20 is observed to be OFF	·
		· · · · · · · · · · · · · · · · · · ·	

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	Data	Package: Page of Date	
6.3	Hydro	ogen Igniter Functional Tests - Train B (continued)	•
	[41]	CLOSE 2-BKR-268-2/6-B (Breaker 6).	
×	[42]	OPEN 2-BKR-268-2/7-B (Breaker 7).	CV
	T.—3		
			CV
		A. VERIFY Igniter #38 is observed to be OFF.	. <u> </u>
		B. VERIFY Igniter #39 is observed to be OFF.	
	[43]	CLOSE 2-BKR-268-2/7-B (Breaker 7).	<u></u>
			CV
	[44]	OPEN 2-BKR-268-2/8-B (Breaker 8).	
	,		
	,		CV
		A. VERIFY Igniter #43 is observed to be OFF.	
		B. VERIFY Igniter #44 is observed to be OFF.	
	[45]	CLOSE 2-BKR-268-2/8-B (Breaker 8).	
	[46]	OPEN 2-BKR-268-2/9-B (Breaker 9).	•••
			CV
		A. VERIFY Igniter #41 is observed to be OFF.	
		B. VERIFY Igniter #59 is observed to be OFF.	

WBN Unit 2		VBN PERMANENT HYDROGEN MITIGATION 2-PTI-268-01 nit 2 SYSTEM Rev. 0000 Page 113 of 123				
	Data	Package: Page of	Date			
.3	Hydrogen Igniter Functional Tests - Train B (continued)					
	[47]	CLOSE 2-BKR-268-2/9-B (Breaker 9).	· · ·			
			CV			
	[48]	OPEN 2-BKR-268-2/10-B (Breaker 10).				
		A. VERIFY Igniter #45 is observed to be OFF				

B. **VERIFY** Igniter #46 is observed to be OFF.

[49] **CLOSE** 2-BKR-268-2/10-B (Breaker 10).

[50] **OPEN** 2-BKR-268-2/11-B (Breaker 11).

A. **VERIFY** Igniter #40 is observed to be OFF.

B. **VERIFY** Igniter #47 is observed to be OFF.

[51] **CLOSE** 2-BKR-268-2/11-B (Breaker 11).

[52] **OPEN** 2-BKR-268-2/12-B (Breaker 12).

A. VERIFY Igniter #51 is observed to be OFF.B. VERIFY Igniter #52 is observed to be OFF.

[53] **CLOSE** 2-BKR-268-2/12-B (Breaker 12).

CV

CV

CV

CV

CV

	WBN Unit 2		PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 114 of 123	
	Data	Pacl	age: Page of	Date _	
6.3	Hydro	ogen	Igniter Functional Tests - Train B (contin	nued)	
	[54]	OP	EN 2-BKR-268-2/13-B (Breaker 13).	· -	
				-	CV
		A.	VERIFY Igniter #56 is observed to be OFF		
		В.	VERIFY Igniter #57 is observed to be OFF	·	
	[55]	CL	OSE 2-BKR-268-2/13-B (Breaker 13).	-	
				-	CV
	[56]	OP	EN 2-BKR-268-2/14-B (Breaker 14).	-	
					CV
		Α.	VERIFY Igniter #58 is observed to be OFF	·	
		В.	VERIFY Igniter #60 is observed to be OFF	·	<u>x</u>
	[57]	CL	OSE 2-BKR-268-2/14-B (Breaker 14).	-	
			· · · · · · · · · · · · · · · · · · ·		CV
	[58]	OP	EN 2-BKR-268-2/15-B (Breaker 15).		
					CV
		A.	VERIFY Igniter #61 is observed to be OFF	-	
		В.	VERIFY Igniter #62 is observed to be OFF	:. · · .	
	[59]	CL	OSE 2-BKR-268-2/15-B (Breaker 15).	-	

CV

	WBN Unit 2	PERMANENT HYDROGEN MITIGATION SYSTEM	2-PTI-268-01 Rev. 0000 Page 115 of 123					
	Data	Package: Page of	Date					
6.3	Hydrogen Igniter Functional Tests - Train B (continued)							
	[60]	OPEN 2-BKR-268-2/16-B (Breaker 16).						
				CV				
		A. VERIFY Igniter #63 is observed to be OFF						
		B. VERIFY Igniter #64 is observed to be OFF						
	[61]	CLOSE 2-BKR-268-2/16-B (Breaker 16).						
				CV				
	[62]	OPEN 2-BKR-268-2/17-B (Breaker 17).						
		· ·		CV				
		A. VERIFY Igniter #67 is observed to be OFF						
		B. VERIFY Igniter #68 is observed to be OFF						
	[63]	CLOSE 2-BKR-268-2/17-B (Breaker 17).						
			х	CV				

	NOTE					
Breaker 18, 2-BKR-268-2/18-B, is a spare breaker.						
[64]	VERIFY each igniter temperature recorded in Step 6.3[28] is 1741.2°F or greater. (Acc Crit)					
[65]	VERIFY wattages recorded in Step 6.3[29] do not individually exceed 1335.3 watts. (Acc Crit)					

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	Data	Packa	ge: Page of		Date
6.3	Hydr	ogen l	gniter Functional	Tests - Train B (conti	nued)
	[66]	RECO Pane	ORD Phase-to-Pha I 2-DPL-268-2-B, A	se bus voltage measur ND	rements at
		VERI	FY voltage is betwe	een 230.36 V_{AC} and 23	3.82 V _{AC} .
		<u>A</u> .			
			M&TE _		Cal Due Date
				А-В	V _{AC}
					(230.36-233.82 V _A
		В.			
			M&TE _		Cal Due Date
				В-С	V _{AC}
					(230.36-233.82 V _{A0}
		C.			
			M&TE _		Cal Due Date
				C-A	
					(230.36-233.82 V _A
	-				

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Date _____

6.3 Hydrogen Igniter Functional Tests - Train B (continued)

[67] IF any voltage measurement in 6.3[66] is NOT 230.26 to 233.82 V_{AC} , THEN

ADJUST potentiometer R13 in 2-DXF-268-268-2-B on control board A1A for Phase A, A1B for Phase B, and A1C for Phase C so that each phase is 230.26 to 233.82 V_{AC}, **AND**

RECORD as-left voltages for each phase below:

A. Phase A to Phase B:

V_{AC}

 V_{AC}

V_{AC}

B. Phase B to Phase C:

C. Phase C to Phase A:

WBN PERMANENT HY Unit 2 S		DROGEN MITIGATION	2-PTI-268-01 Rev. 0000 Page 118 of 123				
	Data	Packa	age: Page o	f		Date	
6.3	Hydr	ogen Igniter Functional Tests - Train B (continued)					
	[68]	REC Pane	CORD Phase-to-Ne el 2-DPL-268-2-B,	utral bus voltage measu AND	rements at		
		VER	IFY voltage is betw	veen 132 and 135 V_{AC} .			
		A.					
			M&TE	· · · · · · · · · · · · · · · · · · ·	Cal Due	Date	
				A-NEUTRAL	V _{AC}	(132 - 135 V _{AC})	
		В.					
			M&TE		Cal Due	Date	
				B-NEUTRAL	V _{AC}	(132 - 135 V _{AC})	
		C.					
			M&TE		Cal Due	Date	
		,		C-NEUTRAL	V _{AC}	(132 - 135 V _{AC})	
	[69]	PLA the (CE Handswitch 2-I	HS-268-74, H2 IGNITEF	RS GROUP I	B, in	

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Date ____

CV

7.0 POST PERFORMANCE ACTIVITIES

- [1] **NOTIFY** the Shift Manager (SM) 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.

8.0 RECORDS

A. QA Records

Completed Test Package

B. Non QA Records

None

Appendix A (Page 1 of 1)

TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

Data Package: Page _____ of _____

Date _

NOTES

1) Additional copies of this table may be made as necessary.

2) Initial and date indicates review has been completed for impact.

PROCEDURE/ INSTRUCTION	REVISION/CHANGES	INITIAL AND DATE. (N/A for no change)
WBN2-83-4001		
FSAR Section 6.2.5A Table 14 2-1 Sht 40 of 89		
2-TSD-268-01		· · · · · · · · · · · · · · · · · · ·
WBN-VTM-N431-0090		
WBN-VTM-P319-0010		
	· · · · · ·	
·		
	-	
	,	

-

-

Appendix B (Page 1 of 1)

TEMPORARY CONDITION LOG

Data Package: Page ____ of ____

Date _____

NOTE

These steps will be N/A'd if no temporary condition existed. Additional copies of this table may be made as necessary.

	TEMPORARY	PEF	RFORMED	RETURNED TO NORMAL	
ITEM NUMBER	CONDITION DESCRIPTION	Step Number	Perf. By/Date CV By/Date	Step Number	Returned By/Date CV By/Date
			-		
i					
				-	
<u></u>					
				•	
			· · · · · · · · · · · · · · · · · · ·		
				•	

Table 1 (Page 1 of 2)

TEMPERATURE CONVERSION CHART

Data Package: Page _____ of _____

Date ____

NOTE

The relation between degrees Fahrenheit and degrees Centigrade (Celsius) is expressed by the following formula: $^{\circ}C = 5/9$ ($^{\circ}F - 32$) or $^{\circ}F = 9/5$ ($^{\circ}C$) + 32

DEGREES	DEGREES	DEGREES	DEGREES	DEGREES	DEGREES	
(°C)	(°F)	(°C)	(°F)	(°C)	(°F)	
862 °C =	1583.6 °F	887 °C = 1628.6 °F		912 °C = 1673.6 °F		
863 °C =	1585.4 °F	888 °C = 1630.4 °F		913 °C = 1675.4 °F		
864 °C =	1587.2 °F	889 °C = 1632.2 °F		914 °C = 1677.2 °F		
865 °C =	1589.0 °F	890 °C = 1634.0 °F		915 °C = 1679.0 °F		
= 3° 866 °C =	1590.8 °F	891 °C =	1635.8 °F	916 °C = 1680.8 °F		
867 °C =	1592.6 °F	892 °C = 1637.6 °F		917 °C = 1682.6 °F		
868 °C =	1594.4 °F	893 °C =	1639.4 °F	918 °C = 1684.4 °F		
869 °C =	1596.2 °F	894 °C =	1641.2 °F	919 °C =	1686.2 °F	
870 °C =	1598.0 °F	895 °C =	1643.0 °F	920 °C = 1688.0 °F		
871 °C =	1599.8 °F	896 °C = 1644.8 °F		921 °C = 1689.8 °F		
872 °C =	1601.6 °F	897 °C = 1646.6 °F		922 °C = 1691.6 °F		
873 °C =	1603.4 °F	898 °C = 1648.4 °F		923 °C = 1693.4 °F		
874 °C =	1605.2 °F	899 °C = 1650.2 °F		924 °C = 1695.2 °F		
875 °C =	1607.0 °F	900 °C = 1652.0 °F		925 °C = 1697.0 °F		
876 °C =	1608.8 °F	901 °C = 1653.8 °F		926 °C = 1698.8 °F		
877 °C = 1610.6 °F		902 °C = 1655.6 °F		927 °C = 1700.6 °F		
878 °C = 1612.4 °F		903 °C = 1657.4 °F		928 °C = 1702.4 °F		
879 °C = 1614.2 °F		904 °C = 1659.2 °F		929 °C = 1704.2 °F		
880 °C = 1616.0 °F		905 °C = 1661.0 °F		930 °C = 1706.0 °F		
881 °C = 1617.8 °F		906 °C = 1662.8 °F		931 °C = 1707.8 °F		
882 °C = 1619.6 °F		907 °C = 1664.6 °F		932 °C = 1709.6 °F		
883 °C = 1621.4 °F		908 °C = 1666.4 °F		933 °C = 1711.4 °F		
884 °C = 1623.2 °F		909 °C = 1668.2 °F		934 °C = 1713.2 °F		
885 °C = 1625.0 °F		910 °C =	1670.0 °F	935 °C = 1715.0 °F		
886 °C = 1626.8 °F		911 °C =	1671.8 °F	936 °C = 1716.8 °F		

Table 1 (Page 2 of 2)

TEMPERATURE CONVERSION CHART

Data Package: Page ____ of ____

Date	

NOTE						
The relation between degrees Fahrenheit and degrees Centigrade (Celsius) is expressed						
by the following formula: $^{\circ}C = 5/9$ ($^{\circ}F - 32$) or $^{\circ}F = 9/5$ ($^{\circ}C$) + 32						
DEGREES	DEGREES DEGREES DEGREES DEGREES			DEGREES	DEGREES	
(°C)	(°F)	(°C)	(°F)	(°C)	(°F)	
937 °C =	937 °C = 1718.6 °F 962 °C = 1763.6 °F 987 °C = 1808.6 °F					
938 °C =	1720.4 °F	963 °C = 1765.4 °F		988 °C = 1810.4 °F		
939 °C =	1722.2 °F	964 °C =	1767.2 °F	989 °C = 1812.2 °F		
940 °C =	1724.0 °F	965 °C =	1769.0 °F	990 °C = 1814.0 °F		
941 °C =	1725.8 °F	966 °C =	1770.8 °F	991 °C = 1815.8 °F		
942 °C =	1727.6 °F	967 °C =	1772.6 °F	992 °C = 1817.6 °F		
943 °C =	1729.4 °F	968 °C =	1774.4 °F	993 °C = 1819.4 °F		
944 °C =	1731.2 °F	969 °C =	1776.2 °F	994 °C = 1821.2 °F		
945 °C = 1733.0 °F		970 °C = 1778.0 °F		995 °C = 1823.0 °F		
946 °C = 1734.8 °F		971 °C = 1779.8 °F		996 °C = 1824.8 °F		
947 °C = 1736.6 °F		972 °C =	1781.6 °F	997 °C =	1826.6 °F	
948 °C = 1738.4 °F		973 °C =	1783.4 °F	= 0° 899	1828.4 °F	
949 °C =	1740.2 °F	974 °C = 1785.2 °F		999 °C = 1830.2 °F		
950 °C = 1742.0 °F		975 °C =	1787.0 °F	1000 °C =	1832.0 °F	
951 °C = 1743.8 °F		976 °C =	1788.8 °F	1001 °C = 1833.8 °F		
952 °C = 1745.6 °F		977 °C =	1790.6 °F	1002 °C = 1835.6 °F		
953 °C = 1747.4 °F		978 °C = 1792.4 °F		1003 °C = 1837.4 °F		
954 °C =	<u>1749.2 °F</u>	979 °C =	1794.2 °F	1004 °C =	1839.2 °F	
955 °C =	1751.0 °F	= 3° 089	1796.0 °F	1005 °C =	1841.0 °F	
956 °C =	<u>1752.8 °F</u>	981 °C =	1797.8 °F	1006 °C =	1842.8 °F	
957 °C = 1754.6 °F		982 °C = 1799.6 °F		1007 °C = 1844.6 °F		
958 °C =	1756.4 °F	983 °C = 1801.4 °F		1008 °C = 1846.4 °F		
959 °C =	1758.2 °F	984 °C =	984 °C = 1803.2 °F		1009 °C = 1848.2 °F	
960 °C =	1760.0 °F	985 °C =	1805.0 °F	1010 °C =	1850.0 °F	
961 °C =	1761.8 °F	986 °C =	1806.8 °F	1011 °C =	1851.8 °F	