

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

March 7, 2011

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 Instructions

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The following approved WBN Unit 2 Pre-op Test Instructions (PTIs) are enclosed:

PTI NUMBER	Rev.	TITLE
2-PTI-030E-01	0	Containment Air Return Fans
2-PTI-061-01	0	Ice Condenser System
2-PTI-077-02	0	Gaseous Waste Disposal System

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

Respectfully,

David Stinson Watts Bar Unit 2 Vice President



U.S. Nuclear Regulatory Commission Page 2 March 7, 2011

cc (Enclosures):

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

WATTS BAR NUCLEAR PLAN UNIT 2 PREOPERATIONAL TES	
TITLE: Containment Air Return Fans	
Instruction No: <u>2-PTI-030E-01</u> Revision No: <u>0000</u>	
PREPARED BY: <u>Keith Jones Kr.H. Jano</u> PRINT NAME / SIGNATURE	DATE: <u>/2-8-10</u>
	<u>с</u> DATE: <u>12-10-10</u>
JTG MEETING NO: 2-11-006	
JTG CHAIRMAN: LEVEL	DATE: $\frac{5}{3}$
APPROVED BY : PREOPERATIONAL STARTUP MANAGER	DATE: 313)
TEST RESULTS APPROVAL	
JTG MEETING No:	
JTG CHAIRMAN:	DATE:
APPROVED BY :	DATE:
PREOPERATIONAL STARTUP MANAGER	

SMP-8.0 R7 Administration of Preoperational Test instructions, Appendix B

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 2 of 108
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Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0000	3/3/11	ALL	This procedure is written using the Unit 1 PTI-030L-01 Rev 0 as a guide. The Air Return Fans' flow instrumentation has been disabled and is not in the scope of this test.

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1.0 INTRODUCTION

1.1 Test Objectives

Demonstrate the proper operation of the Containment Air Return Fans, including associated dampers and hydrogen collection headers.

1.2 Scope

This test demonstrates the operability of the Unit 2 Containment Air Return System to ensure the following:

- A. The Air Return Fans operate correctly from their respective handswitches in the Main Control Room and on the 480V Shutdown Boards, and their indicating lights indicate correct status.
- B. The Air Return Fans can recirculate air through the Ice Condenser at or above the design air flow, including that from the hydrogen collection headers.
- C. The Air Return Fans' backdraft dampers remain closed unless their respective fan is running.
- D. The Air Return Fans start approximately 9 minutes after a Phase B Containment Isolation Signal and remain running after reset of that signal.
- E. The Air Return Fans will operate correctly during accident conditions.

2.0 **REFERENCES**

2.1 **Performance References**

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

2.2 Developmental References

- A. Final Safety Analysis Report, Amendment 101
 - 1. Section 6.8, Air Return Fans
 - 2. Table 14.2-1, Sheets 38 & 39, Containment Ventilation System Test Summary
- B. Drawings
 - 1. Flow Diagrams
 - a. 2-47W866-1, Rev 2, HEATING AND VENTILATION AIR FLOW DRA 53788-020, Rev 0
 - 2. Electrical
 - a. 2-45W760-30-13, Rev 0, VENTILATING SYSTEM SCHEMATIC DIAGRAMS
 - b. 2-47W760-30-8, Rev 1, VENTILATING SYSTEM SCHEMATIC DIAGRAMS
 - c. 1-45W760-30-21, Rev 10, VENTILATING SYSTEM SCHEMATIC DIAGRAMS
 - d. 2-45W600-30-7, Rev 1, VENTILATING SYSTEM SCHEMATIC DIAGRAM DRA 54172-185, Rev 0
 - e. 1-45W760-55-1A, Rev 13, ANNUNCIATOR SYSTEM SCHEMATIC DIAGRAMS

Data Package: Page ____ of ____ Date ____

2.2 Developmental References (continued)

- f. 2-45W600-57-20, Rev 0, SEPARATION MISC AUX RELAYS SCHEMATIC DIAGRAMS
- g. 2-45W600-57-21, Rev 0, SEPARATION & MISC AUX RELAYS SCHEMATIC DIAGRAMS
- h. 2-45W749-1, Rev 1, 480V SHUTDOWN BD 2A1-A SINGLE LINE DRA 54172-252, Rev 0
- i. 2-45W749-4, Rev 2, 480V SHUTDOWN BD 2B2-B SINGLE LINE DRA 54172-253, Rev 0
- j. 45N2676-4, REV 16, SOLID STATE PROTECTION SYS TRAIN A CONNECTION DIAGRAM
- k. 45N2677-4, REV 18, SOLID STATE PROTECTION SYS TRAIN B CONNECTION DIAGRAM
- I. 6947D02 (AC), Rev G, LVME 'DS' SWGR 480V 3 PH 60 HZ SUBSTATION INTERNALS
- m. 6947D61, Rev 906, LVME 'DS' SWGR 480V SHUTDOWN BD 2A1-A 480V 3 PH 60 HZ SUBSTATION CONN DIAG UNIT 10
- n. 618F938, Rev 913, LVME 'DS' SWGR 480V SHUTDOWN BD 2A1-A 480V 3 PH 60 HZ SUBSTATION CONN DIAG UNIT 6 DRA 53066-030, Rev 0
- o. 6947D87, Rev 912, LVME 'DS' SWGR 480V SHUTDOWN BD 2B2-B 480V 3∅ 60 HZ SUBSTATION CONN DIAG UNIT 8 & 9
- p. 6947D85, Rev 915, LVME 'DS' SWGR 480V SHUTDOWN BD 2B2-B 480V 3Ø 60 HZ SUBSTATION CONN DIAG UNIT 6 DRA 53069-014, Rev 0 DRA 53069-018, Rev 0

Date _____

2.2 Developmental References (continued)

- 3. Logic/Control
 - a. 2-47W610-30-1, Rev 1, ELECTRICAL CONTROL DIAGRAM VENTILATION SYSTEM DRA 53788-018, Rev 0 DRA 54172-295, Rev 0
 - b. 2-47W611-30-3, Rev 0, ELECTRICAL LOGIC DIAGRAM VENTILATION SYSTEM DRA 53788-019, Rev 0 DRA 54172-297, Rev 0
- 4. Other
 - a. 2-47B601-55-1, ELECTRICAL INSTRUMENT TABULATION, [Later] DRA 52453-04, Rev 0
 - b. 2-47B601-55-2, ELECTRICAL INSTRUMENT TABULATION, [Later] DRA 52453-05, Rev 0
 - c. 2-47B601-55-3, ELECTRICAL INSTRUMENT TABULATION, [Later] DRA 52453-06, Rev 0
 - d. 2-47B601-55-4, ELECTRICAL INSTRUMENT TABULATION, [Later] DRA 52453-07, Rev 0
 - e. 2-45B655-6E, Rev 0, MAIN CONTROL ROOM ANNUNCIATOR INPUTS WINDOW BOX XA-55-6E DCA 52630-091, Rev 0
 - f. 2-45B655-E6E, Rev 0, ANNUNCIATOR WINDOW BOX XA-55-6E ENGRAVING
 - g. 2-47A615-0, Rev 1, INTEGRATED COMPUTER SYSTEM TERMINATIONS AND I/O LIST (Pages 9 & 26 of 30)

Date _____

2.2 Developmental References (continued)

- C. Documents
 - 1. GTM-05, HVAC Air Balance (Draft)
 - 2. WBN2-30RB-4002, Rev 1, Reactor Building Ventilation System
 - 3. 2-TSD-30E-1, Rev 1, Containment Air Return Fans
 - 4. G-37, Rev 4, Testing and Balancing of HVAC Systems During Installation, Modification, and Maintenance
 - 5. Unit 2 Technical Specifications (Draft)
 - a. Section 3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation
 - b. Section 3.6.10, Air Return System (ARS)
 - 6. Unit 2 Technical Requirements Manual (Draft)
 - a. Section 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation
 - 7. 2-SI-99-200, Response Time Scheduling And Verification of Reactor Trip And Engineered Safety Features Systems (Draft)
 - 8. MI-57.002, Rev 39, Westinghouse DS Circuit Breaker Routine Maintenance, Inspection and Testing

Date _____

3.0 PRECAUTIONS AND LIMITATIONS

- A. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Procedure 1021.
- B. Steps may be repeated if all components cannot be tested in a step. However, if the test has been exited, prerequisite steps must be re-verified and a Chronological Test Log (CTL) entry made.
- C. Discrepancies between component ID tags and the description in a procedure/instruction if the UNIDs match, exclusive of place keeping zeros and train designators (e.g.; 2-HS-31-468 vs. 2-HS-031-0468) and the noun description is sufficient to identify the component. This condition does not require a TDN in accordance SMP-14.0. If the component label needs to be changed, a Tag Request Form (TR Card) should be processed in accordance with TI-12.14. Make an entry in the CTL and continue testing.
- D. IF/THEN steps may be marked N/A if stated condition does not exist.
- E. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.
- F. All terminal points and connections are to be considered energized. Instrumentation must be used to determine if the circuits are de-energized.
- G. Retermination of lifted leads requires that their restored bend radius is equal to or greater than the as-found condition.
- H. 480V breaker secondary contact covers removed to support jumper installation/removal must be reinstalled with a torque value of 25-35 in-lbs in accordance with MI-57.002.
- I. Air Return Fan Circuit Breakers have Overload Trip Switch (OTS) reset coils. Placing the Handswitch to STOP will energize the OTS Reset Coil and reset the OTS. The OTS Reset Coil should only be energized momentarily; the OTS contact in series with the coil should open to de-energize the coil. To avoid overheating the coil, do not hold Handswitch in STOP if the coil does not deenergize.
- J. When installing fuses with actuators, ensure that the actuating rod is oriented correctly to provide for proper alarm initiation and visual indication.

Data Package: Page ____ of ____ Date ____

3.0 **PRECAUTIONS AND LIMITATIONS (continued)**

- K. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- L. Problems identified during the test shall be annotated on the 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.
- M. Observe all Radiation Protection requirements when working in or near contaminated areas.
- N. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.
- O. Vibration testing of this system is performed during the GTM-05, HVAC Air Balance for this system.
- P. During the performance of this instruction, visual observation of fans and ductwork is required. This includes steady-state and transient operations (fan starts and stops) with visual confirmation that vibration is not excessive.
- Q. To verify that transient conditions are not causing excessive vibration, observe components (duct, dampers, fans, etc) during the transient, to the extent practical. If not practical to observe during the transient, verify after the transient that no damage has occurred.
- R. If the vibration is determined to be excessive the Test Engineer shall initiate a Test Deficiency Notice.
- S. Access to Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A BACKDRAFT DAMPER, may require entry into a confined space. Refer to TVA Safety Procedure 801.
- T. Maintain the force gauge as close as possible to a perpendicular position to the axis of rotation to assure the most accurate results.
- U. Operation of Containment Air Return Fans could create a local personnel hazard due to high noise levels, high air velocity, and the possibility of flying debris. Ensure personnel and loose equipment are clear of fan suction and discharge, and that personnel in the area are cognizant of expected fan start prior to starting an Air Return Fan.

Date _

4.0 PREREQUISITE ACTIONS

NOTE

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

4.1 **Preliminary Actions**

- [1] **VERIFY** the test/performance copy of this Preoperational Test Instruction (PTI) is the current revision, including any change notices, and as needed, each test person assisting in this test has the current revision.
- [2] **OBTAIN** copies of the applicable forms from the latest revision of SMP-9.0, **AND**

ATTACH to this PTI for use during the performance of this PTI.

- [3] **ENSURE** changes to the references listed on Appendix A have been reviewed and determined NOT to adversely affect the test performance.
- [4] **VERIFY** current revisions and change paper for referenced drawings have been reviewed and determined NOT to adversely affect the test performance, **AND**

ATTACH documentation of current drawing revision numbers and change paper that were reviewed to the data package.

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 13 of 108
	Data	Pacl	kage: Page of	Date
4.1	Preli	imina	ry Actions (continued)	
	[5]		ALUATE open items in Watts Bar Integra uipment List (WITEL), AND	ted Task
			SURE that they will NOT adversely affect formance.	the test
		Α.	SubSection 6.1	
		В.	SubSection 6.2	
		C.	SubSection 6.3	· · ·
		D.	SubSection 6.4	
		E.	SubSection 6.5	

- F. SubSection 6.6
- G. SubSection 6.7
- H. SubSection 6.8

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	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 14 of 108
	Data P	ack	age: Page of	Date
4.1	Prelim	ina	ry Actions (continued)	
		Eng	SURE outstanding Design Change Notices ineering Document Construction Release nporary Alterations (TAs) do NOT adverse D	s (EDCRs) or
			FACH documentation of DCNs, EDCRs, a ewed to the data package.	nd TAs that were
		A.	SubSection 6.1	
		B.	SubSection 6.2	
	I	C.	SubSection 6.3	
		D.	SubSection 6.4	
		E.	SubSection 6.5	
		F.	SubSection 6.6	
		G.	SubSection 6.7	
		H.	SubSection 6.8	
			SURE required Component Testing has be r to start of test.	een completed
		A.	SubSection 6.1	
	i	В.	SubSection 6.2	
		C.	SubSection 6.3	
		D.	SubSection 6.4	
	I	E.	SubSection 6.5	
	1	F.	SubSection 6.6	
	(G.	SubSection 6.7	
		Н.	SubSection 6.8	

	WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 15 of 108	
	Data	Package: Page of	Date	
4.1	Prelir	ninary Actions (continued)		
	[8]	ENSURE Work Order that center-punches on the first damper blade arm of Backdraft 2-BKD-30-550 and 2-BKD-30-543 is comple RECORD the distance measured in the Wo center-punch dimple to the center line of the Data Sheets 1 & 2. WO No:	Dampers ete, AND ork Order from the	
	[9]	ENSURE GTM-05, HVAC Air Balance, has the JTG for concurrence that it adequately requirements of this instruction. JTG Meeting No:		
	[10]	ATTACH completed GTM-05 HVAC Air Ba system 30E to this instruction.	lance package for	
	[11]	ENSURE a review of outstanding Clearance coordinated with U2 Operations for impact performance, AND		
		RECORD in Appendix B, Temporary Cond	ition Log if required.	
	[12]	ENSURE components contained within the test are under the jurisdictional control of P Startup Engineering (PSE) and/or Plant Op	reoperational	
	[13]	REVIEW preventive maintenance records the scope of this test, AND	for components with	

VERIFY no conditions exist that will impact test performance.

WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 16 of 108
Dat	ta Pacl	cage: Page of	Date
4.1 Pre	elimina	ry Actions (continued)	
[14]		RFORM a pretest walkdown on equipment sure no conditions exist that will impact test	
	Α.	SubSection 6.1	
	В.	SubSection 6.2	
	C.	SubSection 6.3	·
	D.	SubSection 6.4	
	E.	SubSection 6.5	
	F.	SubSection 6.6	
	G.	SubSection 6.7	
	Α.	SubSection 6.8	
[15	-	NDUCT a pretest briefing with Test and Opsonnel in accordance with SMP-9.0.	perations
	Α.	SubSection 6.1	
	В.	SubSection 6.2	
	C.	SubSection 6.3	
	D.	SubSection 6.4	
	Ε.	SubSection 6.5	
	F.	SubSection 6.6	
	G.	SubSection 6.7	
	Н.	SubSection 6.8	
[16	3	SURE communications are available for an ting is to be conducted.	reas where

Date _____

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

[1] **OBTAIN** the following M&TE or equivalent, **AND**

DESCRIPTION	MINIMUM RANGE	REQUIRED ACCURACY	M&TE ID NUMBER	CALIBRATION DUE DATE
Force Gauge	0-50 lbs	±1% of range		
Digital Stopwatch	N/A	±0.1 sec/hr		N/A*
Ammeter (Clamp-on)	600V AC 200A	±2.4% of reading + 1 digit		
Current Probe (Clamp-on)	600V AC 200A	±2.4% of reading		
Chart Recorder	20mm/sec chart speed	$\pm 5\%$ of chart speed setting		
Torque Wrench	0-35 in-lbs	$\pm 5\%$ of scale		

COMPLETE the following table:

* Digital stopwatches are calibrated one time only and do not require recalibration.

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

- A. Non-switched jumpers [2] (for secondary contacts on 480V switchgear)
- B. Switched jumpers [2]
- C. Handheld jumper [1]
- D. Wood wedges (Figure 1)
- E. 7' × 7' Tarp
- F. Duct Tape

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 18 of 108	
	Data	Pacl	kage: Page of	Date	
4.2			ools, Measuring and Test Equipment, I (continued)	Parts, and	
	[3]		SURE Chart Recorder is calibrated for an 0-200 Amps AC.	input	
		Α.	SubSection 6.7		
		В.	SubSection 6.8		
	[4]		RIFY M&TE calibration due dates will sup npletion of this test performance.	port the	
		Α.	SubSection 6.1		
		В.	SubSection 6.2		
		C.	SubSection 6.3	·	
		D.	SubSection 6.4	<u></u>	
		Е.	SubSection 6.5		
		F.	SubSection 6.6		
		G.	SubSection 6.7		
			SubSection 6.8		

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Date _____

4.3 Field Preparations

- [1] **ENSURE** the following systems are operable and have been placed in service to the extent necessary to support this test:
 - A. System 55, Annunciator and Sequential Events Recording System
 - B. System 30H, Lower Compartment CoolersC. System 30I, Control Rod Drive Mechanism Coolers
 - D. System 99, Reactor Protection System
 - E. System 212, 480V Shutdown Power
 - F. System 238, 120V AC Preferred Power
 - G. System 261, Integrated Computer System (ICS)

NOTES

- 1) Any Annunciator points associated with 2-MUX-55-12 and 2-MUX-55-13 ONLY have master switches at the bottom of each terminal strip.
- 2) All points associated with 2-TBK-55-25, 2-TBK-55-26, 2-TBK-55-27, and 2-TBK-55-28 will not have individual switches or a master switch.
 - [2] **ENSURE** System 55, Annunciator and Sequential Events Recording System, applicable TBK Switches are ON, the applicable Master Switches are ON, and window software input(s) are ENABLED for the following Annunciator window:
 - 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 20 of 108	
	Data	Pack	cage: Page of	Date	
4.3	Field Preparations (continued)				
	[3]	EN	SURE the following ICS points are in sca	n:	
		A.	HD2030, VENT SYS HS-38A, 88A, 74A	, 77A, 83A	
		В.	HD2064, VENT SYS HS-39A, 78A, 75A	a, 92A, 80A	
		C.	XD2036, CNTMT AIR RETURN FAN 24	A	
		D.	XD2037, CNTMT AIR RETURN FAN 24	A	
		E.	XD2091, CNTMT AIR RETURN FAN 28	3	
		F.	XD2092, CNTMT AIR RETURN FAN 28	3	
		G.	XD9055, CNTMT AIR RETURN FAN 28	3	
		Η.	XD9107, CNTMT AIR RETURN FAN 24	<i></i>	
	[4]	Sig or 7	RIFY there are no Unit 2 Phase B Contair nals present by the ØB window NOT LIT IR-B MASTER ISOL SIGNAL STATUS P X-55-6C and 2-XX-55-6D) on 2-M-6.	on either the TR-A	
	[5]		SURE system is configured in accordance ctrical Lineup.	e with Appendix C,	
	[6]	EN	SURE the following Throttling Valves are	NOT CLOSED:	
		•	2-THV-30-541, UPPER REACTOR COI COLLECTION EXH	MPT HYDROGEN	
		•	2-THV-30-542, UPPER REACTOR COI COLLECTION EXH		
	[7]	Spa 2-B	SURE any required ladders, scaffolding, a ace Permits required to access Backdraft KD-30-550, AIR RETURN FAN A-A BAC MPER, are in place.	Damper	
		A.	SubSection 6.1		
		B.	SubSection 6.7		

Date _____

4.3 Field Preparations (continued)

- [8] **ENSURE** Measuring and Test Equipment (M&TE) required for test performance has been (as required) filled, vented, placed in service, and recorded on Measuring and Test Equipment Log.
 - A.
 SubSection 6.1

 B.
 SubSection 6.2

 C.
 SubSection 6.3

 - D. SubSection 6.4
 - E. SubSection 6.7
 - F. SubSection 6.8
- [9] **INSTALL** switched jumpers at the following locations, **AND**

ENSURE that the jumper switches are OPEN (OFF).

- [9.1] Labeled TS-1: In SSPS Train-A Output Cabinet 2-R-48, at TB615, between Pt. 5 (Wire A110CC3) and Pt. 6 (Wire A110CCP). (45N2676-4)
 - A. Jumper Installed

1st

CV

- B. Jumper Switch OPEN (OFF)
- [9.2] Labeled TS-2: In SSPS Train-B Output Cabinet 2-R-51, at TB615, between Pt. 5 (Wire B29CC3) and Pt. 6 (Wire B29CCP). (45N2677-4)
 - A. Jumper Installed

1st

CV

B. Jumper Switch OPEN (OFF)

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Unit 2		Rev. 0000
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Date _____

4.4 Approvals and Notifications

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

	Preop	perational Startup Manager Signature	Date
[2]	OBTAIN the Unit 2 Supervise authorization.	or's (US/SRO) or Shift Manager's (SN	Л)
	Unit	t 2 US/SRO/SM Signature	Date
[3]	OBTAIN the Unit 1 Supervise (SM) authorization.	or's (US/SRO) or Shift Manager's	
	Unit	t 1 US/SRO/SM Signature	Date

Date _____

5.0 ACCEPTANCE CRITERIA

NOTE

Acceptance Criteria values have been adjusted to account for instrument inaccuracies. See Appendix D for calculation basis.

A. Air Return Fan Backdraft Dampers

Backdraft Damper	Indicating Lights	Fails Closed	Opening Torque ≤ 89 in-lbs ¹
2-BKD-30-550	6.1[7] 6.1[8]B	6.1[8]A	6.1[6]
2-BKD-30-543	6.2[7] 6.2[8]B	6.2[8]A	6.2[6]

1. The Air Return Fan Backdraft Dampers operate correctly:

¹ Required value is 92.4 in-lbs, reduced to 89 in-lbs to account for instrument inaccuracies

2. The Hydrogen Collection Header Backdraft Dampers operate correctly:

Backdraft Damper	Position When Air Return Fan 2A-A is Running	Position When Air Return Fan 2B-B is Running	
2-BKD-30-581	OPEN: 6.7[23]	CLOSED: 6.8[23]	
2-BKD-30-582	OPEN: 6.7[23]	CLOSED: 6.8[23]	
2-BKD-30-583	OPEN: 6.7[23]	CLOSED: 6.8[23]	
2-BKD-30-580	CLOSED: 6.7[23]	OPEN: 6.8[23]	
2-BKD-30-584	CLOSED: 6.7[23]	OPEN: 6.8[23]	
2-BKD-30-585	CLOSED: 6.7[23]	OPEN: 6.8[23]	

Date _____

5.0 ACCEPTANCE CRITERIA (continued)

- B. Air Return Fans
 - 1. The Air Return Fans manual and automatic controls, interlocks, and indications operate correctly:

Fan	Controls and Indications (Main Control Room and/or remote)	Can be isolated from outside the Main Control Room	
2-FAN-30-38	Section 6.3	6.3[17]	
2-FAN-30-39	Section 6.4	6.4[17]	

2. The Air Return Fans respond appropriately to Engineered Safety Feature Actuation System (ESFAS) signals:

	Phase B	lation Signal	
Fan	Starts 9 min ± 1 min (8 to 10 min) after ØB	Remains on after ØB is reset	Motor Response Time is ≤ 9.5 seconds²
2-FAN-30-38	6.3[14]	6.3[15]	6.7[16.6]
2-FAN-30-39	6.4[14]	6.4[15]	6.8[16.6]

² Required value for motor response time is 10 seconds, reduced to 9.5 seconds to account for instrument inaccuracies.

3. The Air Return Fan motors can operate correctly during Design Basis Accident conditions:

Fan	Design Density Motor Horsepower is ≤ Motor Nameplate Horsepower ³
2-FAN-30-38	6.5[11]
2-FAN-30-39	6.6[11]

³ Nameplate HP = 100 HP, reduced to 94 HP to account for instrument inaccuracies

Date _____

5.0 ACCEPTANCE CRITERIA (continued)

4. The Air Return Fan motors operate correctly with their suction dampers closed:

Fan	Motor Running Amps are between 56 and 91 Amps ⁴		
2-FAN-30-38	6.7[20]		
2-FAN-30-39	6.8[20]		

⁴ Required value is 54 to 94 Amps, margin reduced to 56 to 91 Amps to account for instrument inaccuracies

Date _____

5.0 ACCEPTANCE CRITERIA (continued)

5. With an unloaded Ice Condenser, Air Return Fan 2A-A provides the required minimum air flows:

Air Flow (CFM)	Step	
Total:	41,885	6.5[4]A
Total Free:⁵	39,000	6.5[6]
Total from Upper to Lower Compartment: ⁶	40,000	6.5[7]
Train A Containment Dome Hydrogen Collector:	1000	6.5[4]B
Train A Rx Cavity Hydrogen Collector:	275	6.5[4]C
Accumulator Room 1 Hydrogen Collector:	25	6.5[4]E
Accumulator Room 2 Hydrogen Collector:	25	6.5[4]G
Accumulator Room 3 Hydrogen Collector:	40	6.5[4]H
Accumulator Room 4 Hydrogen Collector:	60	6.5[4]D
Incore Instrument Room Hydrogen Collector:	85	6.5[4]F
Steam Generator 1 Enclosure Hydrogen Collector:	275	6.5[4]J
Steam Generator 2 Enclosure Hydrogen Collector:	275	6.5[4]M
Steam Generator 3 Enclosure Hydrogen Collector:	275	6.5[4]N
Steam Generator 4 Enclosure Hydrogen Collector:	275	6.5[4]I
Pressurizer Enclosure Hydrogen Collector: ⁷	137.5	6.5[4]K, 6.5[4]L
Total from Dead-Ended Spaces. ⁸	1885	6.5[5]

⁵ Does not include air flow from any of the Hydrogen Collection Headers

⁶ Confirms Backdraft Damper does not impede airflow

⁷ The Pressurizer Enclosure has 2 Hydrogen Collection Header suctions, each with a design flow of 138 CFM.

⁸ Sum of air flows from Reactor Cavity, Accumulator Rms, Incore Inst Rm, and S/G & Pzr Enclusures.

Date _____

5.0 ACCEPTANCE CRITERIA (continued)

6. With an unloaded Ice Condenser, Air Return Fan 2B-B provides the required minimum air flows:

Air Flow (CFM)	Step	
Total:	41,885	6.6[4]A
Total Free: ⁹	39,000	6.6[6]
Total from Upper to Lower Compartment: ¹⁰	40,000	6.6[7]
Train B Containment Dome Hydrogen Collector:	1000	6.6[4]B
Train B Rx Cavity Hydrogen Collector:	275	6.6[4]C
Accumulator Room 1 Hydrogen Collector:	25	6.6[4]E
Accumulator Room 2 Hydrogen Collector:	25	6.6[4]G
Accumulator Room 3 Hydrogen Collector:	40	6.6[4]H
Accumulator Room 4 Hydrogen Collector:	60	6.6[4]D
Incore Instrument Room Hydrogen Collector:	85	6.6[4]F
Steam Generator 1 Enclosure Hydrogen Collector:	275	6.6[4]J
Steam Generator 2 Enclosure Hydrogen Collector:	275	6.6[4]M
Steam Generator 3 Enclosure Hydrogen Collector:	275	6.6[4]N
Steam Generator 4 Enclosure Hydrogen Collector:	275	6.6[4]I
Pressurizer Enclosure Hydrogen Collector: ¹¹	137.5	6.6[4]K, 6.6[4]L
Total from Dead-Ended Spaces: ¹²	1885	6.6[5]

⁹ Does not include air flow from any of the Hydrogen Collection Headers

¹⁰ Confirms Backdraft Damper does not impede airflow

¹¹ The Pressurizer Enclosure has 2 Hydrogen Collection Header suctions, each with a design flow of 138 CFM.

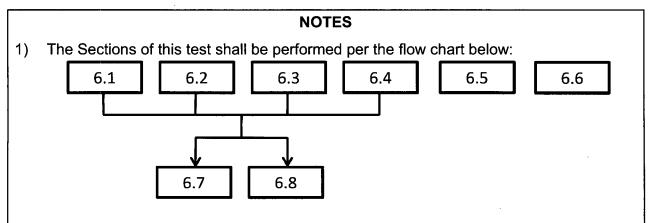
¹² Sum of air flows from Reactor Cavity, Accumulator Rms, Incore Inst Rm, and S/G & Pzr Enclusures..

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Data Package:	Page _	of
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Date	

6.0 PERFORMANCE



- 2) Sections 6.1 through 6.4 shall be performed first, and in any order, followed by Sections 6.7 and 6.8 (in any order). Sections 6.5 and 6.6 may be performed at any time during this instruction. Unless otherwise noted, steps within each section are to be performed in the order written.
- 3) Air Return Fan Handswitches in the Main Control Room spring return to A AUTO from START and STOP positions.
- 4) Air Return Fans and Dampers may have status indication lights at either or both of two locations in the Main Control Room
 - On 2-M-9 at/near their associated Handswitch
 - On 2-M-6, on Train A (2-XX-55-6E) or Train B (2-XX-55-6F) CONTAINMENT ISOL STATUS PNL, hereafter abbreviated in this instruction as CISP.
- 5) Time measurements are taken in minutes and seconds and recorded in "mm:ss" format, where "mm" represents minutes, and "ss" represents seconds.

Date _____

6.1 Air Return Fan 2A-A Backdraft Damper Functional Test

	WARNING				
Access to Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A BACKDRAFT DAMPER, may require entry into a confined space. Refer to TVA Safety Procedure 801.					
[1]	ENSURE prerequisites listed in Section 4.0 for SubSection 6.1 have been completed.				
[2]	VERIFY the following (locally):				
	 Fan 2-FAN-30-38, CNTMT AIR RETURN FAN 2A-A, [Lwr Cntmt/734 AZ 250° (Acc Rm 3)], is NOT RUNNING 				
	 Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A BACKDRAFT DAMPER, [Upr Cntmt/745 AZ 250°], is CLOSED 				
[3]	ENSURE no debris is present on top of Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A BACKDRAFT DAMPER, which may fall through when damper is opened and impede fan operation.				
[4]	ALIGN force gauge perpendicular to center-punch mark on first blade arm of Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A BACKDRAFT DAMPER. (Refer to Data Sheet 1.)				
[5]	PUSH force gauge with steady force, AND				
	RECORD the force required to unseat Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A BACKDRAFT DAMPER, on Data Sheet 1.				

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	Data	Package: Page of	Date
6.1		eturn Fan 2A-A Backdraft Damper Fune inued)	ctional Test
	[6]	CALCULATE the torque required to uns AIR RETURN FAN A-A BACKDRAFT D Data Sheet 1, AND	•
		VERIFY it meets acceptance criteria:	
		Unseating Torque:	in-lbs
		Acc Crit: 89.0 in-lb maximum	
	[7]	MANUALLY OPEN Backdraft Damper 2 AIR RETURN FAN A-A BACKDRAFT D	-
		VERIFY Status Light 2-XI-30-72, DAMPI on 2-M-9: (Acc Crit)	ER ZS-30-72,
		Green Light OFF	
		Red Light ON	
	[8]	RELEASE Backdraft Damper 2-BKD-30 FAN A-A BACKDRAFT DAMPER, AND	-550, AIR RETURN
		VERIFY the following: (Acc Crit)	
		A. Backdraft Damper 2-BKD-30-550 C	LOSES
		B. Status Light 2-XI-30-72, DAMPER 2	ZS-30-72, on 2-M-9:
		Green Light ON	
		Red Light OFF	

	Data	a Package: Page of	Date
6.2	Air F	Return Fan 2B-B Backdraft Damper Functional Test	
	[1]	ENSURE prerequisites listed in Section 4.0 for SubSection 6.2 have been completed.	2
	[2]	VERIFY the following (locally):	
		 Fan 2-FAN-30-39, CNTMT AIR RETURN FAN 2B-B, [Lwr Cntmt/742 AZ 297° (Acc Rm 4)], is NOT RUNNING. 	
		 Backdraft Damper 2-BKD-30-543, AIR RETURN FAN B-I BACKDRAFT DAMPER, [Upr Cntmt/757 AZ 297°], is CLOSED. 	В
	[3]	ENSURE no debris is present on top of Backdraft Damper 2-BKD-30-543, AIR RETURN FAN B-B BACKDRAFT DAMPER, which may fall through when damper is opened an impede fan operation.	d
	[4]	ALIGN force gauge perpendicular to center-punch mark on first blade arm of Backdraft Damper 2-BKD-30-543, AIR RETURN FAN B-B BACKDRAFT DAMPER. (Refer to Data Sheet 2.)	
	[5]	PUSH force gauge with steady force, AND	
		RECORD the force required to unseat Backdraft Damper 2-BKD-30-543, AIR RETURN FAN B-B BACKDRAFT DAMPER, on Data Sheet 2.	

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	WBN Unit 2	Cont	ainment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 32 of 108	
	Data	Package: Page	e of	Date	
.2		eturn Fan 2B-E inued)	Backdraft Damper Func	tional Test	
	[6]		the torque required to unse FAN B-B BACKDRAFT DA AND	•	
		VERIFY it mee	ets acceptance criteria:		
		Unseating 7	Forque:	in-lbs	
		Acc Crit: 89	0.0 in-lb maximum	· · · · · · · · · · · · · · · · · · ·	
	[7]		PEN Backdraft Damper 2- FAN B-B BACKDRAFT DA		
		VERIFY Status on 2-M-9: (Ac	s Light 2-XI-30-73, DAMPE : c Crit)	ER ZS-30-73,	
		• Green Lig	ht OFF		
		Red Light	ON		
	[8]		ckdraft Damper 2-BKD-30- KDRAFT DAMPER, AND	543, AIR RETURN	
		VERIFY the fo	llowing: (Acc Crit)		
		A. Backdraft	Damper 2-BKD-30-543 Cl	LOSES	
		B. Status Lig	ght 2-XI-30-73, DAMPER Z	S-30-73, on 2-M-9:	
		• Gree	en Light ON		
		Red	Light OFF		

	WBN Unit 2				
	Data	Packa	age: Page of	Date	
6.3	Air R	eturn	Fan 2A-A Logic		
	[1]		URE prerequisites listed in Section 4.0 for been completed.	r SubSection 6.3	
	[2]	(2-F/	CK OUT Breaker 2-BKR-30-38, AIR RETU AN-30-38), [480V SHUTDOWN BOARD : apartment 10C].		
	[3]		IOVE secondary contact cover on the top (R-30-38, AIR RETURN FAN 2A-A (2-FA		
		seco	FALL temporary jumpers between the foll ondary contacts of Breaker 2-BKR-30-38. wing 6947D61)	owing stationary	
	[3	.1]	Labeled J-1: Between Pin 3TP (Wire A110CCC) and	d Pin 13.	1st
				· .	CV
	[3	.2]	Labeled J-2: Between Pin 6TP (Wire A110CTT) and pin 9 (Wire A110CT1).		
					1st
					CV
	[4]		PLACE secondary contact cover on the to (R-30-38, AIR RETURN FAN 2A-A (2-FA		
		TOR	QUE between 25 and 35 in-lbs.		
		M&T	E:		1st
					CV
	[5]		K Breaker 2-BKR-30-38, AIR RETURN F AN-30-38), to the TEST position.	AN 2A-A	

	WBN Unit 2		Containment Air Return Fans			2-PTI-030E-01 Rev. 0000 Page 34 of 108	
	Data	Packag	e: Page	of		Date	
6.3	Air R	eturn Fa	an 2A-A Log	gic (continued)			
	[6]			T AIR RTN FAN 2A-/ WN BOARD 2A1-A, (
			Y the follow A-A (2-FAN-	ing at Breaker 2-BKR -30-38):	R-30-38,	AIR RETURN	
		•	Green Li	ght OFF			
		٠	Red Ligh	t ON			
		٠	Red Flag	at Breaker Panel			
	[7]			T AIR RTN FAN 2A-/ N BOARD 2A1-A, Coi			
			Y the follow A-A (2-FAN-	ing at Breaker 2-BKR -30-38):	R-30-38,	AIR RETURN	
		•	Green Li	ght ON			
		•	Red Ligh	t OFF			
		•	Green Fl	ag at Breaker Panel			

[8] **ENSURE** Transfer Switch 2-XS-30-38A, CNTMT AIR RETURN FAN 2A-A, [480V SHUTDOWN BOARD 2A1-A, Compartment 6A], is in AVAIL.

	WBN Unit 2			Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 35 of 108
	Data	Pacl	kage	: Page of	Date
6.3	Air R	leturi	n Far	n 2A-A Logic (continued)	
	[9]			Handswitch 2-HS-30-38A, AIR RETUR T, AND	RN FAN A-A,
		VE	RIFY	the following:	
		Α.	On	Handswitch 2-HS-30-38A:	
			٠	Green Light OFF	
			•	Red Light ON	
			•	White Light OFF	
		В.		2-XX-55-6E, Train A CISP, Window 10 R RET A FAN-30-38, [2-M-6]:	02,
			•	Green Light OFF	
			٠	Red Light ON	
		C.	At 4	180V Shutdown Board 2A1-A, Compar	tment 10C:
			•	Breaker 2-BKR-30-38, Green Light C	DFF
			•	Breaker 2-BKR-30-38, Red Light ON	·
		D.	ICS	S Points:	
			٠	HD2030, VENT SYS HS-38A, 88A, 7 is NOT P-L	² 4A, 77A, 83A,
			•	XD2036, CNTMT AIR RETURN FAN is PWR OFF	2A,
			•	XD2037, CNTMT AIR RETURN FAN is RUNNING	2A,

• XD9107, CNTMT AIR RETURN FAN 2A, is AVAIL

WBN Unit 2			Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 36 of 108		
	Data	Pack	cage	: Page of	Date	
6.3	Air R	eturr	n Fai	n 2A-A Logic (continued)		
	[10]			Handswitch 2-HS-30-38A, AIR RETU P, AND	RN FAN A-A,	
		VEI	RIFY	the following:		
		Α.	On	Handswitch 2-HS-30-38A:		
			٠	Green Light ON		
			٠	Red Light OFF		
			•	White Light OFF		
	·	В.		2-XX-55-6E, Train A CISP, Window 1 R RET A FAN-30-38:	02,	
			•	Green Light ON		
			•	Red Light OFF		
		C.	At 4	480V Shutdown Board 2A1-A, Compar	tment 10C:	
			•	Breaker 2-BKR-30-38, Green Light C	DN	
			•	Breaker 2-BKR-30-38, Red Light OF	F	
		D.	ICS	S Points:		
			•	HD2030, VENT SYS HS-38A, 88A, 7 is NOT P-L	24A, 77A, 83A,	
			•	XD2036, CNTMT AIR RETURN FAN is PWR OFF	I 2A,	
			•	XD2037, CNTMT AIR RETURN FAN is NOT RUN	I 2A,	
			•	XD9107, CNTMT AIR RETURN FAN	2A, is AVAIL	
	[11]			Handswitch 2-HS-30-38A, AIR RETUI in A AUTO.	RN FAN A-A,	

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		1 4 90 01 01 100

Date _____

6.3 Air Return Fan 2A-A Logic (continued)

NOTE

The following steps will simulate a Train A Phase B Containment Isolation Signal and Phase B signal reset by closing and opening a test switch (TS-1) installed in Step 4.3[9.1] in SSPS Train-A Output Cabinet 2-R-48.

[12] **PLACE** Jumper Switch TS-1 in the CLOSED (ON) position, **AND**

START the stopwatch.

- [13] **STOP** the stopwatch when Air Return Fan 2A-A starts, as indicated by Red Light ON at 2-HS-30-38A, AIR RETURN FAN A-A.
- [14] **RECORD** the elapsed time indicated on the stopwatch, **AND**

VERIFY it meets Acceptance Criteria:

(mm:ss)	:

Acc Crit:	9:00	(8:00 -	10:00)
-----------	------	---------	--------

[15] **PLACE** Jumper Switch TS-1 in the OPEN (OFF) position, **AND**

VERIFY on 2-HS-30-38A, AIR RETURN FAN A-A: (Acc Crit)

- Green Light OFF
- Red Light ON
- White Light OFF
- [16] **PLACE** Transfer Switch 2-XS-30-38A, CNTMT AIR RETURN FAN 2A-A in ISOL.

WBN Unit 2				Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 38 of 108				
	Data	Pacl	kage	: Page of	Date	e			
6.3	Air Return Fan 2A-A Logic (continued)								
	[17]	VE	RIFY	the following: (Acc Crit)					
		Α.	On	Handswitch 2-HS-30-38A, AIR RETU	RN FAN A-A:				
			•	Green Light OFF					
			٠	Red Light OFF					
			•	White Light OFF					
		В.		2-XX-55-6E, Train A CISP, Window 1 R RET A FAN-30-38:	02,				
			•	Green Light OFF					
			•	Red Light OFF					
		C.	At 4	480V Shutdown Board 2A1-A, Compa	rtment 10C:				
			•	Breaker 2-BKR-30-38, Green Light C	DN.				
			•	Breaker 2-BKR-30-38, Red Light OF	F.				
		D.	ICS	S Points:					
			•	HD2030, VENT SYS HS-38A, 88A, 7 is NOT P-L	74A, 77A, 83A,	<u></u>			
			•	XD2036, CNTMT AIR RETURN FAN is PWR OFF	I 2A,				
			٠	XD2037, CNTMT AIR RETURN FAN is NOT RUN	I 2A,				
			•	XD9107, CNTMT AIR RETURN FAN	I 2A, is ISOLATE				

	WBN Unit 2		Contain	ment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 39 of 108	
	Data	Pack	kage: Page	of	Date	
6.3	Air R	eturi	n Fan 2A-A Lo	gic (continued)		
	[18]		ACE Handswite START, AND	ch 2-HS-30-38A, AIR RETUI	RN FAN A-A,	
		VE	RIFY the follow	ving:		
		A.	On Handswite	ch 2-HS-30-38A:		
			• Green Li	ight OFF		
			Red Ligh	nt OFF		
			• White Lig	ght OFF		
		В.	At 480V Shut	down Board 2A1-A, Compar	tment 10C:	
			• Breaker	2-BKR-30-38, Green Light C	DN.	
			• Breaker	2-BKR-30-38, Red Light OF	F.	
	[19]	Poi Del FAI	nts T1 and M1 ay Relay 2-02- N 2A-A, (TDCI)	PLACE a handheld jumper a (wire A110CC2 and A110C0 30-38, RELAY FOR CNTM1), [480V SHUTDOWN BOAR . (Drawing 618F938)	C1) of Time AIR RET	1st
	[20]		RIFY the follow mpartment 100	ving on 480V Shutdown Boar C:	rd 2A1-A,	
			• Breaker	2-BKR-30-38, Green Light C	DN.	
			• Breaker	2-BKR-30-38, Red Light OF	F.	

	Data I	Pack	age:	Page _		_ 0	of	Date _	
6.3	Air Re	eturn	n Fan	2A-A L	.ogi	ic ((continued)		
	[21]			Fransfei A in AV			ch 2-XS-30-38A, CNTMT AIR RETURN ND		
		VER	RIFY	the follo	wing	ıg:			
		Α.	On l	Handsw	itch	2-	-HS-30-38A, AIR RETURN FAN A-A:		
			•	Green	Ligh	nt C	ON	-	
			•	Red Lig	ght (OF	F	-	
			•	White I	_ight	nt C	DFF	-	
		В.		4-55-6E LEAR.	-138	8E	E, PANEL M-9 MOTOR TRIPOUT,	-	
		C.	Mot	or Tripo	ut B	Buz	zzer [2-M-2] is OFF.	-	
		D.	138		EL N	M-9	nts Display Screen indicates 9 MOTOR TRIPOUT, en).	-	
	[22]			Fransfei A in ISC		vitc	ch 2-XS-30-38A, CNTMT AIR RETURN	-	
	[23]			UT Brea 30-38).	aker	r 2-	-BKR-30-38, AIR RETURN FAN 2A-A	-	
	[24]			E front o A (2-FA			of Breaker 2-BKR-30-38, AIR RETURN 38).	-	
	[25]	(2-F	AN-3	80-38), (Ovei	rlo	R-30-38, AIR RETURN FAN 2A-A ad Trip Switch (OTS) mechanical lock-i the TRIP position.	n	
	[26]			₋ front c A (2-FA			of Breaker 2-BKR-30-38, AIR RETURN 38).	-	1st

CV

WE Uni			Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 41 of 108							
[Data Package: Page of										
6.3 A	Air Ret	Return Fan 2A-A Logic (continued)									
[]	-		CK Breaker 2-BKR-30-38, AIR RETURN FA AN-30-38), to the TEST position.	N 2A-A							
[28]	VEF	RIFY the following:								
	/	A.	White Light on Handswitch 2-HS-30-38A, A	AIR RETURN							
	E	B.	2-XA-55-6E-138E, PANEL M-9 MOTOR T is CLEAR.	RIPOUT,							
	(C.	Motor Tripout Buzzer is OFF.								
	[D.	Unit 2 Alarm Events Display Screen indica 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green).	tes							
[-		ACE Transfer Switch 2-XS-30-38A, CNTMT N 2A-A to AVAIL, AND	AIR RETURN							
	١	VEF	RIFY the following:								
	/	A.	White Light on Handswitch 2-HS-30-38A, ARETURN FAN A-A, is ON.	AIR							
	E	B.	2-XA-55-6E-138E, PANEL M-9 MOTOR T is in ALARM.	RIPOUT,							
	(C.	Motor Tripout Buzzer is ON.								
	[D.	Unit 2 Alarm Events Display Screen indica 138-E PANEL M-9 MOTOR TRIPOUT, is in ALARM (Red).	ites							

	Data I	Packag	je: Page	of			Date
6.3	Air Re	eturn F	an 2A-A Log	gic (continue	ed)		
	[30]	RESE	T the OTS by	y:			
			ING Handsw DP, OR	itch 2-HS-30	-38A, AIR RETUI	RN FAN A-A,	
					on on the front of N 2A-A (2-FAN-3		
		VERIF	Y the followi	ng:			
		A. W	Vhite Light or	h Handswitch	2-HS-30-38A is	OFF.	4
	•		-XA-55-6E-1 CLEAR.	38E, PANEL	M-9 MOTOR TR	IPOUT,	
		C. N	lotor Tripout	Buzzer is OF	F.		
		1	Init 2 Alarm E 38-E PANEL 3 NORMAL (0	M-9 MOTOR	y Screen indicate R TRIPOUT,	es	
	[31]				IR RETURN FAN TED position, Al		
		VERIF	Y the followi	ng ICS Point	s:		
		•	HD2030, is NOT P		HS-38A, 88A, 74/	A, 77A, 83A,	
		٠	XD2036,	CNTMT AIR	RETURN FAN 2	A, is PWR O	N
		•	XD2037, is NOT R		RETURN FAN 2	А,	
		•	XD9107,	CNTMT AIR	RETURN FAN 2	A, is AVAIL	
	[32]		K Breaker 2-E N-30-38), to 1	•	IR RETURN FAN	N 2A-A	

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Data	Pack	age: Page of	Date
Air R	eturı	r Fan 2A-A Logic (continued)	
[33]		•	N FAN A-A,
	VE	RIFY the following:	
	A.	On Handswitch 2-HS-30-38A:	
		• Green Light OFF	
		Red Light ON	
[34]	bet 480	veen Pt. 9 and Pt. 10 (wire A110CTP and A V SHUTDOWN BOARD 2A1-A, Compartme	(110CT1) in
	·		1st
			CV
[35]	VE	RIFY at 480V Shutdown Board 2A1-A, Com	partment 10C:
		• Breaker 2-BKR-30-38, Green Light O	N
		• Breaker 2-BKR-30-38, Red Light OFF	
	Unit 2 Data Air Ra [33]	Unit 2 Data Pack Air Return [33] PLA to S VEF A [34] MO betw 480 (Dra	Unit 2 Data Package: Page of Air Return Fan 2A-A Logic (continued) [33] PLACE Handswitch 2-HS-30-38A, AIR RETUR to START, AND VERIFY the following: A. On Handswitch 2-HS-30-38A: • Green Light OFF • Red Light ON [34] MOMENTARILY PLACE a handheld jumper at between Pt. 9 and Pt. 10 (wire A110CTP and A 480V SHUTDOWN BOARD 2A1-A, Compartme (Drawing 6947D61) [35] VERIFY at 480V Shutdown Board 2A1-A, Com • Breaker 2-BKR-30-38, Green Light O

	WBN Unit 2		Containmen	t Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 44 of 108							
	Data	Pack	age: Page o	f	Date							
3	Air Return Fan 2A-A Logic (continued)											
	[36]		CORD the As-Foun Idswitches on 2-M-1	d Position of the follov 9, AND	ving							
			ny of the following OP PULL TO LOCK	Handswitches are four , THEN	nd in							
		PL/	CE that Handswite	h in A AUTO.								
		Α.	2-HS-30-74A, LW	R CNTMT CLR A-A								
			As-Found:									
		В.	2-HS-30-77A, LW	R CNTMT CLR C-A								
			As-Found:									
		C.	2-HS-30-83A, CR	DM CLR A-A								
			As-Found:									
						<u> </u>						
		D.	2-HS-30-88A, CR	DM CLR C-A								
			As-Found:									
	[37]		ACE Handswitch 2- TOP PULL TO LO	HS-30-38A, AIR RETU CK, AND	JRN FAN A-A,							
		VEI	RIFY the following I	CS Points:								
			HD2030, VEN is PULLT-L	NT SYS HS-38A, 88A,	74A, 77A, 83A,							
			• XD2036, CN is PWR OFF	TMT AIR RETURN FA	N 2A,							
			• XD2037, CN is NOT RUN	TMT AIR RETURN FA	N 2A,							
			• XD9107, CN ⁻	TMT AIR RETURN FA	N 2A, is AVAIL							

Data	Package:	Page	_ of		Date					
Air R	Air Return Fan 2A-A Logic (continued)									
[38]	ENSURE the following Handswitches on 2-M-9 are returned to their As-Found position recorded in Step 6.3[36]. (The As-Left position recorded in this step should match the As-Found position recorded in step 6.3[36].)									
	A. 2-HS	S-30-74A, L	WR CNTMT CLR A-A							
	/									
	B. 2-HS	S-30-77A, l	WR CNTMT CLR C-A							
		As-Found: As Left:								
	С. 2-Н	S-30-83A, (CRDM CLR A-A							
	/	As-Found: As Left:								
	D. 2-HS		CRDM CLR C-A							
	/	As-Found:								
		As Left:								

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Air R	eturn	Fan 2A-A Logic (continued)	
[39]		CK OUT Breaker 2-BKR-30-38, AIR RET AN-30-38).	URN FAN 2A-A
[40]		IOVE secondary contact cover on the top KR-30-38, AIR RETURN FAN 2A-A (2-FA	
	seco	IOVE the temporary jumpers from the fol ondary contacts of Breaker 2-BKR-30-38, I 2A-A (2-FAN-30-38). (Drawing 6947D6	, AIR ŘETURN
[4	0.1]	Labeled J-1, installed in step 6.3[3.1]: from between Pin 3TP and Pin 13	
			1st
			CV
[4	0.2]	Labeled J-2, installed in step 6.3[3.2]: from between Pin 6TP and Pin 9	
			1st
		I.	CV
[41]		PLACE secondary contact cover on the to KR-30-38, AIR RETURN FAN 2A-A (2-FA	
	TOF	RQUE between 25 and 35 in-lbs.	
	M&T	ſE:	1st
			·
			CV
[42]		CK Breaker 2-BKR-30-38, AIR RETURN AN-30-38) to the DISCONNECTED posit	
[43]	VER	RIFY successful completion of this Section	n 6.3. (Acc Crit)

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 47 of 108	
	Data	Packa	ge: Page of	Date	
.4	Air R	leturn l	Fan 2B-B Logic		
	[1]		JRE prerequisites listed in Section 4.0 for been completed.	or SubSection 6.4	
	[2]	(2-FA	K OUT Breaker 2-BKR-30-39, AIR RETU N-30-39), [480V SHUTDOWN BOARD partment 9C].		
	[3]		OVE secondary contact cover on the top R-30-39, AIR RETURN FAN 2B-B (2-FA		
		secor	ALL temporary jumpers between the fol ndary contacts of Breaker 2-BKR-30-39. ving 6947D87)	• •	
	[3	5.1]	Labeled J-3: Between Pin 3TP (Wire B29CCC) and	Pin 13.	
					1st
					CV
	[3	5.2]	Labeled J-4: Between Pin 6TP (Wire B29CTT) and Pin 9 (Wire B29CT1).		
			· · · · ·		1st
					CV
	[4]		_ACE secondary contact cover on the to R-30-39, AIR RETURN FAN 2B-B (2-FA		
		TOR	QUE between 25 and 35 in-lbs.		
		M&TE	≣:		
					1st
					CV
	[5]		K Breaker 2-BKR-30-39, AIR RETURN I N-30-39), to the TEST position.	FAN 2B-B	

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	Data F	Package: Page of	Date
6.4	Air Re	eturn Fan 2B-B Logic (continued)	
	[6]	PRESS the CNTMT AIR RETURN FAN 2B-B TEST CLOSE switch at 480V SHUTDOWN BOARD 2B2-B, Compartment 9C, AND	
		VERIFY the following at Breaker 2-BKR-30-39, AIR RETURN FAN 2B-B (2-FAN-30-39):	
		Green Light OFF	
		Red Light ON	
		Red Flag at Breaker Panel	
	[7]	PRESS the CNTMT AIR RETURN FAN 2B-B TEST TRIP switch at 480V SHUTDOWN BOARD 2B2-B, Compartment 9C, AND	
		VERIFY the following at Breaker 2-BKR-30-39, AIR RETURN FAN 2B-B (2-FAN-30-39):	
		Green Light ON	
		Red Light OFF	
		Green Flag at Breaker Panel	
	[8]	ENSURE Transfer Switch 2-XS-30-39A, CNTMT AIR RETUR FAN 2B-B, [480V SHUTDOWN BOARD 2B2-B, Compartment 6A], is in AVAIL.	N

	Data I	Pack	age:	Page	of	Date
6.4	Air Re	eturn	n Fan	2B-B Logic	(continued)	
	[9]			Handswitch 2 T, AND	2-HS-30-39A, AIR RETURN FAN	В-В,
		VEF	RIFY	the following	:	
		A.	On	Handswitch 2	2-HS-30-39A:	
			•	Green Light	OFF	
			•	Red Light C	Ν	
			•	White Light	OFF	
		В.			Train B CISP, Window 102, ·30-39, [2-M-6]:	
			•	Green Light	OFF	<u></u>
			•	Red Light C	Ν	
		C.	At 4	80V Shutdov	vn Board 2B2-B, Compartment 9	C:
			•	Breaker 2-B	KR-30-39, Green Light OFF.	<u></u>
			•	Breaker 2-B	KR-30-39, Red Light ON.	
		D.	ICS	Points:		
			•	HD2064, VE is NOT P-L	ENT SYS HS-39A, 78A, 75A, 92A	, 80A,
			•	XD2091, CN is PWR OFI	NTMT AIR RETURN FAN 2B, -	
			•	XD2092, Cl is RUNNIN(ITMT AIR RETURN FAN 2B, G	
			•	XD9055, CI	NTMT AIR RETURN FAN 2B, is A	VAIL

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	Data	Pack	age: Page of	Date
6.4	Air R	eturr	Fan 2B-B Logic (continued)	
	[10]		CE Handswitch 2-HS-30-39A, AIR RETU TOP, AND	RN FAN B-B
		VEI	RIFY the following:	
		Α.	On Handswitch 2-HS-30-39A:	
			Green Light ON	
			Red Light OFF	
			White Light OFF	
		B.	On 2-XX-55-6F, Train B CISP, Window 1 AIR RET B FAN-30-39, [2-M-6]:	02,
			Green Light ON	
			Red Light OFF	
		C.	At 480V Shutdown Board 2B2-B, Compa	rtment 9C:
			• Breaker 2-BKR-30-39, Green Light 0	DN
			• Breaker 2-BKR-30-39, Red Light OF	F
		D.	ICS Points:	
			• HD2064, VENT SYS HS-39A, 78A, 7 is NOT P-L	75A, 92A, 80A,
			• XD2091, CNTMT AIR RETURN FAN is PWR OFF	N 2B,
			XD2092, CNTMT AIR RETURN FAN is NOT RUN	N 2B,
			• XD9055, CNTMT AIR RETURN FAM	V2B, is AVAIL
	[11]		ACE Handswitch 2-HS-30-39A, AIR RETU 1-9], in A AUTO.	RN FAN B-B,

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Date _____

6.4 Air Return Fan 2B-B Logic (continued)

NOTE

The following steps will simulate a Train B Phase B Containment Isolation Signal and Phase B signal reset by closing and opening a test switch (TS-2) installed in Step 4.3[9.2] in SSPS Train-B Output Cabinet 2-R-51.

[12] **PLACE** Jumper Switch TS-2 in the CLOSED (ON) position, **AND**

START the stopwatch.

- [13] **STOP** the stopwatch when Air Return Fan 2B-B starts, as indicated by Red Light ON at 2-HS-30-39A, AIR RETURN FAN B-B.
- [14] **RECORD** the elapsed time indicated on the stopwatch, **AND**

VERIFY it meets Acceptance Criteria:

(mm:ss)		•		
Acc Crit:	9:00	(8:00 - 10:00)		

[15] **PLACE** Jumper Switch TS-2 in the OPEN (OFF) position, **AND**

VERIFY on 2-HS-30-39A, AIR RETURN FAN B-B: (Acc Crit)

- Green Light OFF
- Red Light ON
- White Light OFF
- [16] **PLACE** Transfer Switch 2-XS-30-39A, CNTMT AIR RETURN FAN 2B-B in ISOL.

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	Data	Pac	kage	: Page of	Date	9
6.4	Air F	Retur	n Fa	n 2B-B Logic (continued)		
	[17]	VE	RIFY	the following: (Acc Crit)		
		Α.	On	Handswitch 2-HS-30-39A, AIR RETUR	RN FAN B-B:	
			•	Green Light OFF		
			٠	Red Light OFF		<u></u>
			•	White Light OFF		
		В.		2-XX-55-6F, Train B CISP, Window 10 R RET B FAN-30-39, [2-M-6]:	2,	
			٠	Green Light OFF		
			٠	Red Light OFF		
		C.	At 4	480V Shutdown Board 2B2-B, Compart	ment 9C:	
			•	Breaker 2-BKR-30-39, Green Light Ol	N.	
			٠	Breaker 2-BKR-30-39, Red Light OFF		
		D.	ICS	S Points:		
			•	HD2064, VENT SYS HS-39A, 78A, 75 is NOT P-L	5A, 92A, 80A,	
			•	XD2091, CNTMT AIR RETURN FAN is PWR OFF	2B,	<u></u>
			•	XD2092, CNTMT AIR RETURN FAN is NOT RUN	2B,	
			•	XD9055, CNTMT AIR RETURN FAN	2B, is ISOLATE	

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	Data	Pacl	cage: Page of	Date
6.4	Air R	leturi	n Fan 2B-B Logic (continued)	
	[18]		ACE Handswitch 2-HS-30-39A, AIR RETURN START, AND	FAN B-B,
		VE	RIFY the following:	
		A.	On Handswitch 2-HS-30-39A:	
			Green Light OFF	
			Red Light OFF	
			White Light OFF	
		В.	At 480V Shutdown Board 2B2-B, Compartme	ent 9C:
			• Breaker 2-BKR-30-39, Green Light ON.	
			• Breaker 2-BKR-30-39, Red Light OFF.	
	[19]	Poi Rel (TC	MENTARILY PLACE a handheld jumper acro nts T1 and M1 (wire B29CC2 and B29CC1) of ay 2-02-30-39, RELAY FOR CNTMT AIR RET OCI), [480V SHUTDOWN BOARD 2B2-B, Com awing 6947D85)	[:] Time Delay ⁻ FAN 2B-B,
				1st
				CV
	[20]		RIFY the following on 480V Shutdown Board 2 mpartment 9C:	2B2-B,
			• Breaker 2-BKR-30-39, Green Light ON.	
			• Breaker 2-BKR-30-39, Red Light OFF.	

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 54 of 108		
	Data	Data Package: Page of				
6.4	Air R	eturı	n Fan 2B-B Logic (continued)			
	[21]		ACE Transfer Switch 2-XS-30-39A, CNTMT N 2B-B in AVAIL, AND	AIR RETURN		
		VE	RIFY the following:			
	·	A.	On Handswitch 2-HS-30-39A, AIR RETUR	RN FAN B-B:		
			Green Light ON			
			Red Light OFF			
			White Light OFF			
		В.	2-XA-55-6E-138E, PANEL M-9 MOTOR T CLEAR.	RIPOUT, is		
		C.	Motor Tripout Buzzer [2-M-2] is OFF.			
		D.	Unit 2 Alarm Events Display Screen indica 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green).	ates		
	[22]		ACE Transfer Switch 2-XS-30-39A, CNTMT N 2B-B in ISOL.	AIR RETURN		
	[23]		CK Breaker 2-BKR-30-39, AIR RETURN F FAN-30-39), to the REMOVED position.	AN 2B-B		
	[24]		MOVE front cover of Breaker 2-BKR-30-39, N 2B-B (2-FAN-30-39).	AIR RETURN		
	[25]	(2-F	ACE Breaker 2-BKR-30-39, AIR RETURN F FAN-30-39) Overload Trip Switch (OTS) me er (DTA plunger) to the TRIP position.			
	[26]		TALL front cover of Breaker 2-BKR-30-39, N 2B-B (2-FAN-30-39).	AIR RETURN		

1st

CV

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 55 of 108
	Data	Pack	cage: Page of	Date
6.4	Air R	eturi	n Fan 2B-B Logic (continued)	
	[27]		CK Breaker 2-BKR-30-39, AIR RETURN FAN-30-39), to the TEST position.	FAN 2B-B
	[28]	VE	RIFY the following:	
		A.	White Light on Handswitch 2-HS-30-39/ FAN B-B, is OFF.	A, AIR RETURN
		В.	2-XA-55-6E-138E, PANEL M-9 MOTOR CLEAR.	TRIPOUT, is
		C.	Motor Tripout Buzzer is OFF.	-
		D.	Unit 2 Alarm Events Display Screen indi 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green).	icates
	[29]		ACE Transfer Switch 2-XS-30-39A, CNTM N 2B-B to AVAIL, AND	IT AIR RETURN
		VE	RIFY the following:	
		A.	White Light on Handswitch 2-HS-30-39A FAN B-B, is ON.	A, AIR RETURN
		В.	2-XA-55-6E-138E, PANEL M-9 MOTOR ALARM.	R TRIPOUT, is in
		C.	Motor Tripout Buzzer is ON.	-
		D.	Unit 2 Alarm Events Display Screen indi 138-E PANEL M-9 MOTOR TRIPOUT, is in ALARM (Red).	cates

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	Data	Pack	cage: Page of	Date
6.4	Air R	eturi	n Fan 2B-B Logic (continued)	
	[30]	RE	SET the OTS by:	
			ACING Handswitch 2-HS-30-39A, AIR RET STOP, OR	URN FAN B-B,
			ESSING the OTS Reset button on the front KR-30-39, AIR RETURN FAN 2B-B (2-FAN	
		VE	RIFY the following:	
		A.	White Light on Handswitch 2-HS-30-39A i	s OFF
		В.	2-XA-55-6E-138E, PANEL M-9 MOTOR T CLEAR.	RIPOUT, is
		C.	Motor Tripout Buzzer is OFF.	
		D.	Unit 2 Alarm Events Display Screen indica 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green).	ates
	[31]		CK Breaker 2-BKR-30-39, AIR RETURN FA FAN-30-39), to the CONNECTED position, A	
		VE	RIFY the following ICS Points:	
			 HD2064, VENT SYS HS-39A, 78A, 7 is NOT P-L 	5A, 92A, 80A,
			• XD2091, CNTMT AIR RETURN FAN	2B, is PWR ON
			XD2092, CNTMT AIR RETURN FAN is NOT RUN	2B,
			• XD9055, CNTMT AIR RETURN FAN	2B, is AVAIL
	[32]		CK Breaker 2-BKR-30-39, AIR RETURN F/ FAN-30-39), to the TEST position.	AN 2B-B

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	Data Pa	ckage: Page of	Date
6.4	Air Ret	urn Fan 2B-B Logic (continued)	
		PLACE Handswitch 2-HS-30-39A, AIR RE	TURN FAN B-B,
	V	ERIFY the following:	
	Ą	. On Handswitch 2-HS-30-38A:	
		Green Light OFF	
		Red Light ON	
	b 4	IOMENTARILY PLACE a handheld jumpe etween Pt. 9 and Pt. 10 (wire B29CTP and 80V SHUTDOWN BOARD 2B2-B, Compa Drawing 6947D87)	d B29CT1) in
	(Drawing 0347 D07	1st
			CV
	[35] V	ERIFY at 480V Shutdown Board 2B2-B, C	Compartment 9C:
		• Breaker 2-BKR-30-39, Green Light	ht ON.
		• Breaker 2-BKR-30-39, Red Light	OFF

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	Data	Package	e: Page of	Date	
6.4	Air R	eturn Fa	an 2B-B Logic (continued)		
	[36]		RD the As-Found Position of the fo witches on 2-M-9, AND	bllowing	
			of the following Handswitches are PULL TO LOCK, THEN	found in	
		PLACE	that Handswitch in A AUTO.		
		A. 2-	HS-30-75A, LWR CNTMT CLR B-	В	
			As-Found: As Left:		
		B. 2-	HS-30-78A, LWR CNTMT CLR D-	В	
			As-Found:		
			As Left:		
		C. 2-	HS-30-92A, CRDM CLR B-B		
			As-Found:		
			As Left:		
		D. 2-	HS-30-80A, CRDM CLR D-B		
			As-Found:	_	
			As Left:	_	<u> </u>
	[37]		E Handswitch 2-HS-30-39A, AIR R P PULL TO LOCK, AND	ETURN FAN B-B,	
		VERIF	Y the following ICS Points:		
		•	HD2064, VENT SYS HS-39A, 7 is PULLT-L	78A, 75A, 92A, 80A,	
		•	XD2091, CNTMT AIR RETURN is PWR OFF	I FAN 2B,	
		•	XD2092, CNTMT AIR RETURN is NOT RUN	I FAN 2B,	
		٠	XD9055, CNTMT AIR RETURN	I FAN 2B, is AVAIL	

	Data	Package: Page of	Date
6.4	Air R	eturn Fan 2B-B Logic (continued)	
	[38]	RETURN the following Handswitches on 2-M-9 to their As-Found position recorded in Step 6.4[36]. (The As-Left position recorded in this step should match the As-Found position recorded in step 6.4[36].)	
		A. 2-HS-30-75A, LWR CNTMT CLR B-B	
		As-Found: As Left:	
		B. 2-HS-30-78A, LWR CNTMT CLR D-B	
		As-Found: As Left:	
		C. 2-HS-30-92A, CRDM CLR B-B	
		As-Found: As Left:	
		D. 2-HS-30-80A, CRDM CLR D-B As-Found:	
		As Left:	

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	Data	Packa	age: Page of	Date	
.4	Air Ro	eturn	Fan 2B-B Logic (continued)		
	[39]		:K OUT Breaker 2-BKR-30-39, AIR RET AN-30-39).	URN FAN 2B-B	
	[40]		IOVE secondary contact cover on the to (R-30-39, AIR RETURN FAN 2B-B (2-FA		
		seco	IOVE the temporary jumpers from the fo ondary contacts of Breaker 2-BKR-30-39 2B-B (2-FAN-30-39). (Drawing 6947D8	, AIR RETURN	
	[40	D.1]	Labeled J-3, installed in Step Error! Ronot found.: from between Pin 3TP and Pin 13.	eference source	
					1st
					CV
	[4(0.2]	Labeled J-4, installed in Step Error! Renot found.:	eference source	
			from between Pin 6TP and Pin 9.		1st
					CV
	[41]		LACE secondary contact cover on the to (R-30-39, AIR RETURN FAN 2B-B (2-FA		
		TOR	QUE between 25 and 35 in-lbs.		
		M&T	E:		1st
					CV
	[42]		K Breaker 2-BKR-30-39, AIR RETURN AN-30-39) to the DISCONNECTED posi		
	[43]	VER	IFY successful completion of this Sectio	n 6.4. (Acc Crit)	

Date _____

6.5 Air Return Fan 2A-A Performance

- [1] **ENSURE** prerequisites listed in Section 4.0 for SubSection 6.5 have been completed.
- [2] **ENSURE** motor operating data and air flow measurements (including Hydrogen Collection Headers) for Fan 2-FAN-30-38, CNTMT AIR RETURN FAN 2A-A, has been performed using GTM-05, HVAC Air Balance.
- [3] **ENSURE** completed GTM-05 data sheets are attached.

NOTE

The remaining steps in Section 6.5 record and verify data from the completed GTM-05, HVAC Air Balance Package for system 30E and use that data to perform calculations.

[4] **RECORD** the following air flow measurements, **AND**

VERIFY they meet acceptance criteria

A. Air Return Fan 2A-A total air flow:

CFM

Acc Crit: 41,885 CFM minimum

B. Train A Containment Dome Hydrogen Collection Header air flow:

CFM

Acc Crit: 1000 CFM minimum

C. Train A Reactor Cavity Hydrogen Collection Header air flow (2-THV-30-542):

CFM

Acc Crit: 275 CFM minimum

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	Data Pack	age: Page of		Date
6.5	Air Return	n Fan 2A-A Performance (cont	inued)	
	D.	Accumulator Room 4 Hydroger (2-OR-30-1112):	n Collection Header air flow	N
			CFM	
		Acc Crit: 60 CFM minimum		
	E.	Accumulator Room 1 Hydroger (2-OR-30-1113):	n Collection Header air flow	N
			CFM	
		Acc Crit: 25 CFM minimum		
	F.	Incore Instrument Room Hydro air flow (2-OR-30-1114):	gen Collection Header	
			CFM	
		Acc Crit: 85 CFM minimum		
	G.	Accumulator Room 2 Hydroger (2-OR-30-1115):	n Collection Header air flo	W
			CFM	
		Acc Crit: 25 CFM minimum		
	Н.	Accumulator Room 3 Hydroger (2-OR-30-1116):	n Collection Header air flo	N
			CFM	

Acc Crit: 40 CFM minimum

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	Data Pacl	age: Page of	Date
6.5	Air Returi	n Fan 2A-A Performance (continued)	
	I.	Steam Generator 4 Enclosure Hydrogen (Header air flow (2-OR-30-1117):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	
	J.	Steam Generator 1 Enclosure Hydrogen (Header air flow (2-OR-30-1118):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	
	К.	Pressurizer Enclosure Hydrogen Collectic air flow (2-OR-30-1119):	on Header
-		CFM	
		Acc Crit: 137.5 CFM minimum	
	L.	Pressurizer Enclosure Hydrogen Collectic air flow (2-OR-30-1120):	on Header
		CFM	
		Acc Crit: 137.5 CFM minimum	
	M .	Steam Generator 2 Enclosure Hydrogen (Header air flow (2-OR-30-1121):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	
	N.	Steam Generator 3 Enclosure Hydrogen (Header air flow (2-OR-30-1122):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	

Date _____

6.5 Air Return Fan 2A-A Performance (continued)

[5] **DETERMINE** the total air flow circulated from the Lower Compartment dead end spaces by summing the measured flow totals recorded in Step 6.5[4]C through Step 6.5[4]N using Data Sheet 5 (ΣH_{DE}), **AND**

VERIFY it meets acceptance criteria

CFM

Acc Crit: 1885 CFM minimum

[6] **DETERMINE** the total free air flow transferred from the Upper Compartment to the Lower Compartment (not including the Train-A Containment Dome Hydrogen Collection Header) using Data Sheet 5, (F_F), **AND**

VERIFY it meets acceptance criteria:

CFM

Acc Crit: 39,000 CFM minimum

[7] **DETERMINE** the total air flow transferred from the Upper Compartment to the Lower Compartment (including the Train-A Containment Dome Hydrogen Collection Header) using Data Sheet 5, (ΣF_{UL}) , **AND**

VERIFY it meets acceptance criteria:

CFM

Acc Crit: 40,000 CFM minimum

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	Data F	Package: Page of	Date
6.5	Air Re	eturn Fan 2A-A Performance (continued)	
	[8]	RECORD motor current and voltage readings for Motor 2-MTR-30-38, CNTMT AIR RETURN FAN 2A-A, from completed GTM-05, HVAC Air Balance package for system 30E in Data Sheet 5.	
	[9]	RECORD atmospheric conditions during testing of Air Return Fan 2A-A from the completed GTM-05, HVAC Air Balance package for system 30E in Data Sheet 5.	
	[10]	CALCULATE the Air Return Fan 2A-A Motor Horsepower at Design Density (HPDD) using Data Sheet 5.	
	[11]	RECORD the Air Return Fan 2A-A HPDD, AND	
		VERIFY it is less than or equal to the Air Return Fan 2A-A Motor Nameplate Horsepower.	
		HP	
		Acc Crit: 94 HP maximum	

Date

6.6 Air Return Fan 2B-B Performance

- [1] **ENSURE** prerequisites listed in Section 4.0 for SubSection 6.6 have been completed.
- [2] **ENSURE** motor operating data and air flow measurements (including Hydrogen Collection Headers) for Fan 2-FAN-30-39, CNTMT AIR RETURN FAN 2B-B, has been performed using GTM-05, HVAC Air Balance.
- [3] **ENSURE** completed GTM-05 data sheets are attached.

NOTE

The remaining steps in Section 6.6 record and verify data from the completed GTM-05, HVAC Air Balance Package for system 30E and use that data to perform calculations.

[4] **RECORD** the following air flow measurements, **AND**

VERIFY they meet acceptance criteria

A. Air Return Fan 2B-B total air flow:

CFM

Acc Crit: 41,885 CFM minimum

B. Train B Containment Dome Hydrogen Collection Header air flow:

CFM

Acc Crit: 1000 CFM minimum

C. Train B Reactor Cavity Hydrogen Collection Header air flow (2-THV-30-541):

CFM

Acc Crit: 275 CFM minimum

6.6 Air Return Fan 2B-B Performance (continued)

D. Accumulator Room 4 Hydrogen Collection Header air flow (2-OR-30-1112):

___ CFM

Acc Crit: 60 CFM minimum

E. Accumulator Room 1 Hydrogen Collection Header air flow (2-OR-30-1113):

CFM

Acc Crit: 25 CFM minimum

F. Incore Instrument Room Hydrogen Collection Header air flow (2-OR-30-1114):

CFM

Acc Crit: 85 CFM minimum

G. Accumulator Room 2 Hydrogen Collection Header air flow (2-OR-30-1115):

CFM

Acc Crit: 25 CFM minimum

H. Accumulator Room 3 Hydrogen Collection Header air flow (2-OR-30-1116):

CFM

Acc Crit: 40 CFM minimum

	BN hit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 68 of 108
	Data Pacl	age: Page of	Date
6.6	Air Returi	n Fan 2B-B Performance (continued)	
	١.	Steam Generator 4 Enclosure Hydrogen Header air flow (2-OR-30-1117):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	
	J.	Steam Generator 1 Enclosure Hydrogen Header air flow (2-OR-30-1118):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	
	K.	Pressurizer Enclosure Hydrogen Collect air flow (2-OR-30-1119):	ion Header
		CFM	
		Acc Crit: 137.5 CFM minimum	
	L.	Pressurizer Enclosure Hydrogen Collect air flow (2-OR-30-1120):	ion Header
		CFM	
		Acc Crit: 137.5 CFM minimum	
	М.	Steam Generator 2 Enclosure Hydrogen Header air flow (2-OR-30-1121):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	
	N.	Steam Generator 3 Enclosure Hydrogen Header air flow (2-OR-30-1122):	Collection
		CFM	
		Acc Crit: 275 CFM minimum	

Date _____

6.6 Air Return Fan 2B-B Performance (continued)

[5] **DETERMINE** the total air flow circulated from the Lower Compartment dead end spaces by summing the measured flow totals recorded in Step 6.6[4]C through Step 6.6[4]N using Data Sheet 6 (ΣH_{DE}), **AND**

VERIFY it meets acceptance criteria

CFM

Acc Crit: 1885 CFM minimum

[6] **DETERMINE** the total free air flow transferred from the Upper Compartment to the Lower Compartment (not including the Train-B Containment Dome Hydrogen Collection Header) using Data Sheet 6, (F_F), **AND**

VERIFY it meets acceptance criteria:

CFM

Acc Crit: 39,000 CFM minimum

[7] **DETERMINE** the total air flow transferred from the Upper Compartment to the Lower Compartment (including the Train-B Containment Dome Hydrogen Collection Header) using Data Sheet 6, (ΣF_{UL}) , **AND**

VERIFY it meets acceptance criteria:

CFM

Acc Crit: 40,000 CFM minimum

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 70 of 108	
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	Data	Package: Page of	Date
6.6	Air R		
	[8]	RECORD motor current and voltage readings for Motor 2-MTR-30-39, CNTMT AIR RETURN FAN 2B-B, from completed GTM-05, HVAC Air Balance package for system 30E in Data Sheet 6.	
	[9]	RECORD atmospheric conditions during testing of Air Return Fan 2B-B from the completed GTM-05, HVAC Air Balance package for system 30E in Data Sheet 6.	
	[10]	CALCULATE the Air Return Fan 2B-B Motor Horsepower at Design Density (HPDD) using Data Sheet 6.	
	[11]	RECORD the Air Return Fan 2B-B HPDD, AND	
		VERIFY it is less than or equal to the Air Return Fan 2B-B Motor Nameplate Horsepower.	
		HP	
		Acc Crit: 94 HP maximum	

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Date _____

6.7 Operation of Air Return Fan 2A-A with Backdraft Damper Blocked Closed

- [1] **ENSURE** prerequisites listed in Section 4.0 for SubSection 6.7 have been completed.
- [2] **ENSURE** Handswitch 2-HS-30-38A, AIR RETURN FAN A-A, [2-M-9], is in STOP PULL TO LOCK.
- [3] **RACK** Breaker 2-BKR-30-38, AIR RETURN FAN 2A-A (2-FAN-30-38), [480V SHUTDOWN BOARD 2A1-A, Compartment 10C], to the CONNECTED position.

WARNING

Access to Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A BACKDRAFT DAMPER, may require entry into a confined space. Refer to TVA Safety Procedure 801.

- [4] **VERIFY** the following:
 - Fan 2-FAN-30-38, CNTMT AIR RETURN FAN 2A-A, is NOT RUNNING
 - Backdraft Damper 2-BKD-30-550, AIR RETURN FAN A-A
 BACKDRAFT DAMPER, is CLOSED

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 72 of 108
	Data	Pacl	age: Page of	Date
.7	•		n of Air Return Fan 2A-A with Backdraf Closed (continued)	t Damper
	[5]		RIFY the following Hydrogen collector Bac sitions:	ckdraft Damper
		•	Backdraft Damper 2-BKD-30-581, REA0 H2 COLLECTION HEADER A-A, [Lwr Cntmt/736 AZ 249° (Acc Rm 3)], is	
		•	Backdraft Damper 2-BKD-30-582, AIR F CROSSTIE HEADER A-A, [Lwr Cntmt/741 AZ 249° (Acc Rm 3)], is	
		•	Backdraft Damper 2-BKD-30-583, UPPE COMPARTMENT H2 COLLECTION HE [Lwr Cntmt/741 AZ 249° (Acc Rm 3)], is	ADER A-A,
		•	Backdraft Damper 2-BKD-30-580, REA0 H2 COLLECTION HEADER B-B, [Lwr Cntmt/744 AZ 295° (Acc Rm 4)], is	
		•	Backdraft Damper 2-BKD-30-584, AIR F CROSSTIE HEADER B-B, [Lwr Cntmt/753 AZ 298° (Acc Rm 4)], is	
		•	Backdraft Damper 2-BKD-30-585, UPPE COMPARTMENT H2 COLLECTION HE [Lwr Cntmt/753 AZ 298° (Acc Rm 4)], is	ADER B-B,
	[6]	FA pla	OCK Backdraft Damper 2-BKD-30-550, A N A-A BACKDRAFT DAMPER in the CLC cing wood wedges (Figure 1) between the interweights and the grating lip.	SED position by
	[7]	со	VER the damper opening with a 7' x 7' ta	rp, AND
		ŜE	CURE the tarp in place with duct tape.	

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 73 of 108				
Data	Data Package: Page of Date					
	ation of Air Return Fan 2A-A with Backd (ced Closed (continued)	raft Damper				
	WARNING					
The following equipment.	steps require taking current readings in clo	ose proximity to energized				
[8]	OPEN the back of Panel 10 on 480V Shut to access Compartment 10C.	tdown Board 2A1-A				
[9]	ENSURE clamp-on current probe is conne	ected to recorder.				
[10]	ATTACH clamp-on current probe and rec power lead of Cable 2PL4875A.	order to A-Phase				
	power lead of Cable 2PL4075A.	1st				
		CV				
[11]	ENSURE chart recorder is set to a chart s 20mm/second or greater.	peed of				
[12]	NOTIFY Personnel in Accumulator Room Return Fan 2A-A start.	3 of expected Air				
[13]	ENSURE that personnel and loose equipr Fan 2-FAN-30-38, CNTMT AIR RETURN suction and discharge.					

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 74 of 108	
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Data Package:	Page	of	
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Date _____

6.7 Operation of Air Return Fan 2A-A with Backdraft Damper Blocked Closed (continued)

NOTE

Step 6.7[14] and 6.7[15] are to be performed concurrently

- [14] **START** the recorder.
- [15] **PLACE** Handswitch 2-HS-30-38A, AIR RETURN FAN A-A to START, **AND**

START Stopwatch.

[16] WHEN current indications stabilize, THEN

[16.1] **STOP** the recorder.

[16.2] **LABEL** the point where Air Return Fan 2A-A started.

[16.3] **LABEL** the point where amperage stabilized.

[16.4] **LABEL** the recording as:

2-PTI-030E-01 Air Return Fan 2A-A Motor Response Time Chart Speed: _____ mm/sec Time: _____ Date____

- [16.5] **ATTACH** recording to this instruction.
- [16.6] **DETERMINE** the response time for Motor 2-MTR-30-38, CONTAINMENT AIR RETURN FAN 2A-A, using Data Sheet 3.

Response Time: seconds

Acc Crit: 9.5 seconds maximum

[17] **REMOVE** the clamp-on current probe and recorder from Cable 2PL4875A.

	WBN Unit 2				2-PTI-030E-01 Rev. 0000 Page 75 of 108	
	Data	Packa	age: Page of		Dat	e
5.7	•		of Air Return Fan 2A-A with E losed (continued)	ackdraft Da	amper	
	[18]		ACH clamp-on ammeter to A-P	nase power	lead of	
		Cabi	e 2PL4875A.			1st
						CV
	[19]		SURE current through each of s on Cable 2PL4875A using a c			
		REC	ORD current readings on Data	Sheet 3.		
	[20]	2-M1	CULATE the average motor cu IR-30-38, CONTAINMENT AIR g Data Sheet 3 (I _{AVG}), AND			
		VER	IFY it meets acceptance criteria	:		
		A	verage Current:	An	nps	
		Ac	c Crit: 56.0 - 91.0 Amps			
	[21]	REN	IOVE the clamp-on ammeter from	om Cable 2F	PL4875A.	
						1st
						CV
	[22]	CLO	SE the back of Panel 10 on 480)V Shutdow	n Board 2A1-A.	1st
						CV

	VBN Init 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 76 of 108
	Data Pa	ckage: Page of	Date
7	•	on of Air Return Fan 2A-A with Backo Closed (continued)	draft Damper
		ERIFY the following Hydrogen collector ositions: (Acc Crit)	r Backdraft Damper
		Backdraft Damper 2-BKD-30-56 CAVITY H2 COLLECTION HEA	
		 Backdraft Damper 2-BKD-30-56 CROSSTIE HEADER A-A, is O 	-
		 Backdraft Damper 2-BKD-30-58 COMPARTMENT H2 COLLECT is OPEN 	
		 Backdraft Damper 2-BKD-30-54 CAVITY H2 COLLECTION HEA is CLOSED 	•
		 Backdraft Damper 2-BKD-30-58 CROSSTIE HEADER B-B, is C 	
		 Backdraft Damper 2-BKD-30-58 COMPARTMENT H2 COLLEC is CLOSED 	-
	ha	HEN Fan 2-FAN-30-38, CNTMT AIR R as operated continuously for at least 15 a Stopwatch, THEN	
	[24.1]	STOP Stopwatch.	
	[24.2]	PLACE 2-HS-30-38A, AIR RETUR	RN FAN A-A to STOP.
	[24.3]	RECORD Air Return Fan 2A-A run Stopwatch.	time indicated on
		Fan 2A-A Run Time (mm:ss) :	:

.

.

.

	WBN Unit 2	Co	ontainment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 77 of 108	
	Data	Package: Pa	age of	Date	e
.7	-	ation of Air F ad Closed (Return Fan 2A-A with Backd continued)	raft Damper	
	[25]		2-FAN-30-38, CNTMT AIR RE I to a stop, THEN	ETURN FAN 2A-A,	
			uct tape, tarp and wedges fro 50, AIR RETURN FAN A-A B	-	
					1st
					CV
	[26]	step 4.3[9.1] Terminal St	emporary test switch labeled T]) from between Terminals 5 a rip TB615, located at Panel 2- UTPUT CABINET.	ind 6 at	
					1st
					CV
	[27]		TE the total response time for <i>i</i> Data Sheet 7.	Air Return Fan 2A-A	
		(mm:00)			

(mm:ss) :

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000
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	Data	Package: Page of	Date
6.8	-	ation of Air Return Fan 2B-B with Backdraft Damper ked Closed	
	[1]	ENSURE prerequisites listed in Section 4.0 for SubSection 6. have been completed.	8
	[2]	ENSURE Handswitch 2-HS-30-39A, AIR RETURN FAN B-B, [2-M-9], is in STOP PULL TO LOCK.	
	[3]	RACK Breaker 2-BKR-30-39, AIR RETURN FAN 2B-B (2-FAN-30-39), [480V SHUTDOWN BOARD 2A1-A, Compartment 9C], to the CONNECTED position.	
	[4]	VERIFY the following:	
		 Fan 2-FAN-30-39, CNTMT AIR RETURN FAN 2B-B, is NOT RUNNING 	<u> </u>
		 Backdraft Damper 2-BKD-30-543, AIR RETURN FAN B- BACKDRAFT DAMPER, is CLOSED 	В

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 79 of 108
	Data	Pack	cage: Page of	Date
.8	-		n of Air Return Fan 2B-B with Backdra Closed (continued)	ft Damper
	[5]		RIFY the following Hydrogen collector Ba itions:	ackdraft Damper
		•	Backdraft Damper 2-BKD-30-581, REA H2 COLLECTION HEADER A-A, [Lwr Cntmt/736 AZ 249° (Acc Rm 3)], is	
		•	Backdraft Damper 2-BKD-30-582, AIR CROSSTIE HEADER A-A, [Lwr Cntmt/741 AZ 249° (Acc Rm 3)], is	
		•	Backdraft Damper 2-BKD-30-583, UPP COMPARTMENT H2 COLLECTION H [Lwr Cntmt/741 AZ 249° (Acc Rm 3)], is	EADER A-A,
		•	Backdraft Damper 2-BKD-30-580, REA H2 COLLECTION HEADER B-B, [Lwr Cntmt/744 AZ 295° (Acc Rm 4)], is	
		•.	Backdraft Damper 2-BKD-30-584, AIR CROSSTIE HEADER B-B, [Lwr Cntmt/753 AZ 298° (Acc Rm 4)], is	
		•	Backdraft Damper 2-BKD-30-585, UPF COMPARTMENT H2 COLLECTION H [Lwr Cntmt/753 AZ 298° (Acc Rm 4)], is	EADER B-B,
	[6]	FAI plac	OCK Backdraft Damper 2-BKD-30-543, AN B-B BACKDRAFT DAMPER, in the CL cing wood wedges (Figure 1) between the interweights and the grating lip.	OSED position by
	[7]	CO	VER the damper opening with a 7' x 7' ta	arp, AND
		SE	CURE the tarp in place with duct tape.	<u> </u>

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000
		Page 80 of 108

Data Package: Page _____ of _____

Date _____

6.8 **Operation of Air Return Fan 2B-B with Backdraft Damper** Blocked Closed (continued)

	WARNING	
The following equipment.	steps require taking current readings in close proximity to energized	
[8]	OPEN the back of Panel 9 on 480V Shutdown Board 2B2-B to access Compartment 9C.	
[9]	ENSURE clamp-on current probe is connected to recorder.	
[10]	ATTACH clamp-on current probe and recorder to A-Phase power lead of Cable 2PL4885B.	1st CV
[11]	ENSURE chart recorder is set to a chart speed of 20mm/second or greater.	
[12]	NOTIFY Personnel in Accumulator Room 4 of expected Air Return Fan 2B-B start.	
[13]	ENSURE that personnel and loose equipment are clear of Fan 2-FAN-30-39, CNTMT AIR RETURN FAN 2B-B, suction and discharge.	
	NOTE	

NOTE

Step 6.8[14] and 6.8[15] are to be performed concurrently

[14] **START** the recorder.

PLACE Handswitch 2-HS-30-39A, AIR RETURN FAN B-B to [15] START, AND

START Stopwatch.

	WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 81 of 108
	Data Pao	kage: Page of	Date
5.8	-	n of Air Return Fan 2B-B with Backdraft Closed (continued)	Damper
	[16] W	HEN current indications stabilize, THEN	
	[16.1]	STOP the recorder.	
	[16.2]	LABEL the point where Air Return Fan	2B-B started.
	[16.3]	LABEL the point where amperage stabi	lized.
	[16.4]	LABEL the recording as:	
		2-PTI-030E-01 Air Return Fan 2B-B Motor Response T Chart Speed: mm/ Time: Date	
	[16.5]	ATTACH recording to this instruction.	
	[16.6]	DETERMINE the response time for Mote CONTAINMENT AIR RETURN FAN 2B- Data Sheet 4.	
		Response Time:s	econds
		Acc Crit: 9.5 seconds maximum	
		EMOVE the clamp on current probe and recemble 2PL4885B.	order from
		TACH clamp-on ammeter to A-Phase power	er lead of
		able 2PL4885B.	1st
			CV

	WBN Unit 2		Containment Air Return Fans	2-PTI-030E-0 Rev. 0000 Page 82 of 10	-
	Data	Pack	age: Page of		Date
5.8	-		r of Air Return Fan 2B-B with Backdraft Closed (continued)	t Damper	
	[19]		ASURE current through each of the three ds on Cable 2PL4885B using a clamp-on		
		RE	CORD current readings on Data Sheet 4.		
	[20]	2-M	LCULATE the average motor current for I ITR-30-39, CONTAINMENT AIR RETURN ng Data Sheet 4 (I _{AVG}), AND		
		VEI	RIFY it meets acceptance criteria :		
		Ļ	Average Current:	Amps	
		A	cc Crit: 56.0 - 91.0 Amps		
	[21]	REI	MOVE the clamp-on ammeter from Cable	2PL4885B.	
					1st
					CV
	[22]	CLO	DSE the back of Panel 9 on 480V Shutdo	wn Board 2B2-B	1st
					CV

	WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 83 of 108
	Data Pac	kage: Page of	Date
6.8	•	n of Air Return Fan 2B-B with Backdraft Closed (continued)	Damper
		RIFY the following Hydrogen collector Bac sitions: (Acc Crit)	kdraft Damper
	•	Backdraft Damper 2-BKD-30-581, REAC H2 COLLECTION HEADER A-A, is CLOS	
	•	Backdraft Damper 2-BKD-30-582, AIR RI CROSSTIE HEADER A-A, is CLOSED	ETURN FAN
	•	Backdraft Damper 2-BKD-30-583, UPPE COMPARTMENT H2 COLLECTION HEA is CLOSED	
	•	Backdraft Damper 2-BKD-30-580, REAC H2 COLLECTION HEADER B-B, is OPE	
	•	Backdraft Damper 2-BKD-30-584, AIR RI CROSSTIE HEADER B-B, is OPEN	ETURN
	•	Backdraft Damper 2-BKD-30-585, UPPE COMPARTMENT H2 COLLECTION HEA is OPEN	
	has	IEN Fan 2-FAN-30-39, CNTMT AIR RETU s operated continuously for at least 15 minu Stopwatch, THEN	•
	[24.1]	STOP Stopwatch.	
	[24.2]	PLACE 2-HS-30-39A, AIR RETURN FA	N B-B to STOP.
	[24.3]	RECORD Air Return Fan 2B-B run time Stopwatch.	indicated on
	I	Fan 2B-B Run Time (mm:ss) :	

	WBN Unit 2		Contai	nment Air R	eturn Fans		2-PTI-030E-0 Rev. 0000 Page 84 of 10		
	Data	Packa	age: Page _	of				Date _	
6.8	-		of Air Retur Iosed (conti		with Backd	draft D	amper		
	[25]		EN Fan 2-FA coasted to a		TMT AIR R	ETUR	N FAN 2B-B,		
		2-Bk	IOVE Duct ta (D-30-543, A IPER.				ckdraft Dampe RAFT	r	
								-	1st
								-	CV
	[26]	step TB6	IOVE tempo 4.3[9.2]) bet 15 located at BINET.	ween Termir	hals 5 and 6	at Ter	rminal Strip		
		0, 12						_	1st
								-	CV
	[27]		CULATE the using Data S		nse time for	Air Re	turn Fan 2B-B		
		(mn	n:ss)	:					

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 85 of 108
		Fage 03 01 100

Data Package: Page ____ of ____

Date _____

7.0 POST PERFORMANCE ACTIVITY

		NOTE	
		teps may be performed in any order unless otherwise stated an ose in time as practicable to the end of the instruction performa	
[1]		OVE the switched jumpers installed in step 4.3[9] at the ving locations:	
[1.	.1]	Labeled TS-1: In SSPS Train-A Output Cabinet 2-R-48, at TB615, between Pt. 5 (Wire A110CC3) and Pt. 6 (Wire A110CCP). (45N2676-4)	
			1st
			CV
[1.2]		Labeled TS-2: In SSPS Train-B Output Cabinet 2-R-51, at TB615, between Pt. 5 (Wire B29CC3) and Pt. 6 (Wire B29CCP). (45N2677-4)	
			1st
			CV
[2]	quant	FY that Post-test calibration of the M&TE used to record titative acceptance criteria has been satisfactorily rmed, AND	
		ORD the results on Measuring and Test Equipment (E) Log.	
[3]		FY the Unit 2 US/SRO/SM of the test completion and m alignment.	
[4]		IFY the Unit 1 US/SRO/SM of the test completion and m alignment.	

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Data Package: Page _____ of _____

Date _____

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	IMPACT Yes/No	INITIAL AND DATE. (N/A for no change)
GTM-05			
FSAR Section 6.8 Table 14.2-1 Sh 38 & 39			
2-TSD-30E-1			
Unit 2 Tech Specs Section 3.3.2 Section 3.6.10			
Unit 2 Tech Reqs Manual Section 3.3.2			
2-SI-99-200			
WBN2-30RB-4002			
G-37			
MI-57.002			

Appendix B (Page 1 of 1)

TEMPORARY CONDITION LOG

Data Package: Page _____ of _____

Date _____

NOTES

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

2) These steps will be N/A'd if no temporary condition existed.

ITEM	TEMPORARY CONDITION		PERFORMED	RETU	RNED TO NORMAL
No.	DESCRIPTION	Step No.	Performed By/Date CV By/Date	Step No.	Returned By/Date CV By/Date
		.			

Appendix C (Page 1 of 1)

ELECTRICAL LINEUP

Data	Package: Page	_ of	Date _	
IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY: INITIAL
2-HS-30-38A	2-M-9	CNTMT AIR RETURN FAN 2A-A	STOP PULL TO LOCK	
2-HS-30-39A	2-M-9	CNTMT AIR RETURN FAN 2B-B	STOP PULL TO LOCK	
2-XS-30-38A	480V SD BD 2A1-A Compt 6A	CNTMT AIR RETURN FAN 2A-A	AVAIL	
2-XS-30-39A	480V SD BD 2B2-B Compt 6A	CNTMT AIR RETURN FAN 2B-B	AVAIL	
2-BKR-30-38	480V SD BD 2A1-A Compt 10C	AIR RETURN FAN 2A-A (2-FAN-30-38)	DISCONNECTED	
2-BKR-30-39	480V SD BD 2B2-B Compt 9C	AIR RETURN FAN 2B-B (2-FAN-30-39)	DISCONNECTED	
2-FU-275-R76/I9 2-FU-275-R76/I10	2-R-76 Row I, Fuses 9 & 10	PNL M-9 MTR TRIPOUT ANN SEP RELAY	INSTALLED*	
2-FU-275-R76/ 13 2-FU-275-R76/ 14	2-R-76 Row I, Fuses 13 & 14	PNL M-9 MTR TRIPOUT ANN SEP RELAY	INSTALLED*	
2-BKR-238-1/19	120V AC PREFERRED POWER BOARD 2, BKR 19	PANEL 2-M-9 IND LIGHTS	ON	
2-BKR-235-1/7	120V AC VITAL INSTR POWER BOARD 2-I BKR 7	AUX RELAY RACK 2-R-76 BUS A	ON	
2-BKR-235-1/8	120V AC VITAL INSTR POWER BOARD 2-I BKR 8	AUX RELAY RACK C BUS TO PNL 2-R-76	ON	
2-BKR-235-2/6	120V AC VITAL INSTR POWER BOARD 2-II BKR 6	AUX RELAY RACK 2-R-76 BUS B	ON	

* When installing fuses with actuators, ensure that the actuating rod is oriented correctly to provide for proper alarm initiation and visual indication.

Appendix D (Page 1 of 7)

Background Calculations

Data Package: Page ____ of ____

Date _____

Measurement uncertainties for parameters measured in this test must be incorporated into the test acceptance criteria.

1.0 Backdraft Damper Opening Torque

From reference 2.2C.3 the maximum unseating torque for 2-BKD-30-550 and 2-BKD-30-543 is no greater than 92.4 in-lbs.

Assuming the measured Force is within $\pm 1\%$ of range (0-50lb) and the measured distance is within $\pm 1/64$ ", then the adjusted Torque value can be calculated:

T = F × D F = F_M + .01(50) = F_M + 0.5 D = D_M +
$$\frac{1}{64}$$

 $F_{M} = Measured Force$

 $D_{M} = Measured Distance$

$$T = (F_{M} + 0.5) \cdot (D_{M} + \frac{1}{64}) = F_{M} \times D_{M} + \frac{F_{M}}{64} + \frac{0.5}{64} + 0.5D_{M} = F_{M} \times D_{M} + \frac{D_{M}}{2} + \frac{F_{M} + 0.5}{64}$$

Therefore:

$$F_{\rm M} \times D_{\rm M} = T - \frac{D_{\rm M}}{2} - \frac{F_{\rm M} + 0.5}{64}$$

Given that:

T=92.4 in-lbs

 F_M cannot be greater than 50 lb due to force gauge scale

 D_M cannot be greater than 5 inches due to the physical length of the damper arm where the force is being applied.

$$F_{M} \times D_{M} = (92.4) - (\frac{5}{2}) - (\frac{50 + 0.5}{64}) = 89.11$$

Therefore the Acceptance Criteria for Backdraft Damper Opening Torque will be adjusted to **89 in-Ibs** to conservatively account for instrument inaccuracies.

Appendix D (Page 2 of 7)

Background Calculations

Data Package: Page _____ of _____

2.0 Motor Running Current

From Reference 2.2C.3, the Air Return Fan Motor Operating current with the Fans' Backdraft Dampers closed must be between 54 and 94 Amps.

Date _____

Assuming each measured current values are within $\pm 2.4\%$, then the adjusted Operating Current can be calculated:

$$\begin{aligned} & \text{Operating Current} \left(I_{AVG} \right) = \frac{\Sigma I}{3} = \frac{I_A + I_B + I_C}{3} \\ & I_A = I_{AM} \pm 0.024 I_{AM} = I_{AM} (1 \pm 0.024) \\ & I_B = I_{BM} \pm 0.024 I_{BM} = I_{BM} (1 \pm 0.024) \\ & I_B = I_{CM} \pm 0.024 I_{BM} = I_{CM} (1 \pm 0.024) \\ & I_C = I_{CM} \pm 0.024 I_{CM} = I_{CM} (1 \pm 0.024) \\ & I_C = 1.024 I_{CM} \text{ or } 0.976 I_{CM} \end{aligned}$$

Where I_{AM} , I_{BM} , and I_{CM} are measured currents in A, B, and C phases, respectively.

$$I_{AVG} = \frac{I_{AM}(1 \pm 0.024) + I_{BM}(1 \pm 0.024) + I_{CM}(1 \pm 0.024)}{3} = \frac{(1 \pm 0.024) \cdot (I_{AM} + I_{BM} + I_{CM})}{3}$$

Therefore:

$$\frac{(I_{AM} + I_{BM} + I_{CM})}{3} = \frac{I_{AVG}}{1.024} = \frac{94}{1.024} = 91.797 \text{ Amps}$$

$$\frac{(I_{AM} + I_{BM} + I_{CM})}{3} = \frac{I_{AVG}}{0.976} = \frac{54}{0.976} = 55.329 \text{ Amps}$$

Therefore the Acceptance Criteria for Motor Operating current with closed Backdraft Dampers will be adjusted to **between 91 and 56 Amps** to conservatively account for instrument inaccuracies.

Appendix D (Page 3 of 7)

Background Calculations

Data Package: Page ____ of ____

Date _____

3.0 Motor Design Density Horsepower

From Reference 2.2C.3, the Air Return Fan Motor Nameplate Horsepower is 100 HP and the Motor Horsepower at Design Density conditions cannot exceed the Nameplate Horsepower.

Assuming each measured current and voltage values are within $\pm 2.4\%$, then the adjusted Motor Horsepower and Design Density (HPDD) can be calculated:

$$HPDD = HPTD \times \frac{D_{D}}{D_{T}}$$

Test Density $(D_T) = \left(\frac{530}{460 + T}\right) \times \left(\frac{B}{29.92}\right) \times 0.075 \frac{lb}{ft^3}$ $D_D = Design Density$

Where T = Temperature (°F) and B = Barometric Pressure (inHg) at time of test.

$$HPTD = \frac{I_{AVG} \times V_{AVG} \times PF \times E}{431} \qquad Power(P) = V_{AVG} \times I_{AVG} \qquad \frac{PF \times E}{431} = Constant(C)$$

Where PF = Power Factor and E = Efficiency, which are both constants.

Therefore:

$$HPDD = P \times C \times \frac{D_{D}}{D_{T}}$$

Recall from Section 2.0 of this Appendix:

$$I_{AVG} = \frac{I_{AM}(1 \pm 0.024) + I_{BM}(1 \pm 0.024) + I_{CM}(1 \pm 0.024)}{3} = \frac{(1 \pm 0.024) \cdot (I_{AM} + I_{BM} + I_{CM})}{3}$$

And by applying that same logic to the measured Voltage (V):

$$V_{AVG} = \frac{V_{ABM} (1 \pm 0.024) + V_{ACM} (1 \pm 0.024) + V_{BCM} (1 \pm 0.024)}{3} = \frac{(1 \pm 0.024) \cdot (V_{ABM} + V_{ACM} + V_{BCM})}{3}$$

Appendix D (Page 4 of 7)

Background Calculations

Data Package: Page _____ of _____

Date _____

3.0 Motor Design Density Horsepower (continued)

Assuming that the Barometric Pressure (B) and Temperature (T) are within $\pm 0.4\%$ of range (27-31 inHg) and $\pm 2^{\circ}$ F, respectively, as given in Reference 2.2C.1:

0.4% of 4 inHg = 0.016 inHg

The Maximum percent error for the Barometric Pressure would occur at the lower end of the scale with an indicated Barometric Pressure of 27.00 inHg and an actual Barometric Pressure of 27.016 inHg.

$$1 - \left(\frac{27.00}{27.16}\right) = 0.00059$$

This equates to a maximum error of 0.059%

The Maximum percent error for the Temperature would occur would occur at the lower end of the scale with an indicated Temperature of $32^{\circ}F$ and an actual Temperature of $34^{\circ}F$

$$1 - \left(\frac{32}{34}\right) = 0.0588$$

This equates to a maximum error of 5.88%

Looking at the equation for Test Density (D_T):

Assuming that the numerator has an error equal to that of Barometric Pressure (B), and the denominator has an error equal to that of Temperature (T), the total maximum error of Test Density will be:

 $\frac{0.059\%}{5.88\%} = 1.00\%$

Therefore, D_T may only be 99.0% of its actual value.

Appendix D (Page 5 of 7)

Background Calculations

Data Package: Page ____ of ____

Date _____

.

3.0 Motor Design Density Horsepower (continued)

$$HPDD = P \times C \times \frac{D_D}{D_T}$$

 D_D is also a constant and can be accounted for in C, so:

$$HPDD = P \times C \times \frac{1}{D_{T}} = \frac{P \times C}{D_{T}}$$

Maximum calculated Power would be:

$$\frac{V_{AVG}}{0.976} \times \frac{I_{AVG}}{0.976} = \frac{P}{0.9526}$$

$$HPDD = \frac{P \times C}{0.9526 \times 0.990D_{T}} = \frac{P \times C}{0.9431D_{T}}$$

Therefore:

$$\frac{P \times C}{D_{T}} = 0.9431 \times HPDD$$

and since HPDD cannot be greater than 100 HP:

$$\frac{P \times C}{D_{T}} = 0.9431 \times HPDD = 0.9431 \times (100) = 94.31$$

Therefore the Acceptance Criteria for Motor Horsepower at Design Density will be adjusted to **less than or equal to 94 HP** to conservatively account for instrument inaccuracies.

Appendix D (Page 6 of 7)

Background Calculations

Data Package: Page ____ of ____

Date _____

4.0 Motor Response Time

From Reference 2.2C.3, the Air Return Fan motor response time no greater than 10 seconds for the motor to come up to speed.

Using a chart recorder with a chart speed accuracy of $\pm 5\%$, the adjusted motor response time can be calculated:

Motor Response Time $(t_R) = \frac{\text{Chart Distance}(D)}{\text{Chart Speed}(S)}$

 $S = S_s - 0.05S_s = 0.95S_s$ Where: $S_s = Chart Speed Setting$

$$t_{R} = \frac{D}{0.95S_{s}}$$

Therefore:

$$\frac{D}{S_s} = t_R \times 0.95 = 10 \times 0.95 = 9.5$$

Therefore the Acceptance Criteria for Motor Response Time will be adjusted to **9.5 seconds maximum** to account for instrument inaccuracies.

Appendix D (Page 7 of 7)

Background Calculations

Data Package: Page ____ of ____

Date _____

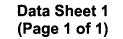
5.0 Air Flow Measurements

This instruction does not perform any air flow measurements; these are done in GTM-05, HVAC Air Balance. The uncertainties associated with taking Air Flow measurements will be handled within GTM-05 and will not be calculated in this instruction.

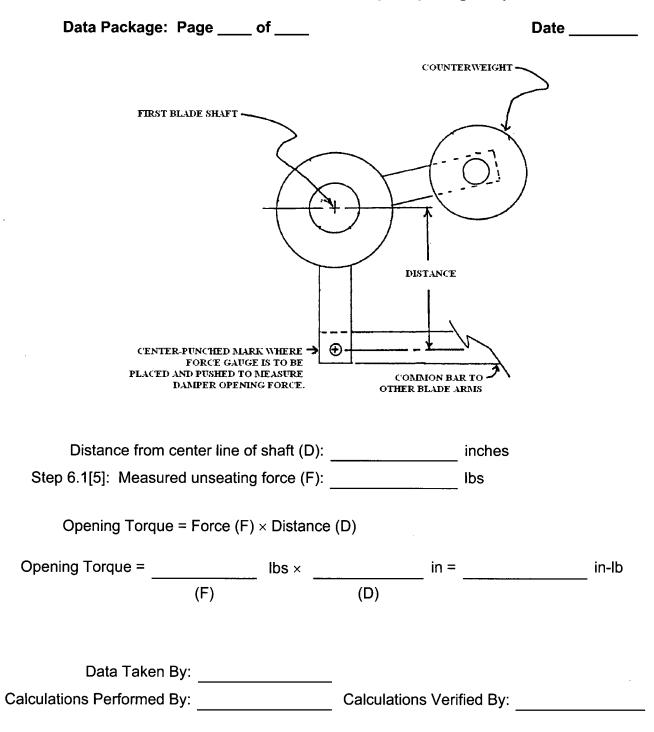
6.0 Stopwatch Use

Handheld digital stopwatches are used in several places in this instruction. Digital stopwatches have an accuracy of ± 0.1 sec. This instrument error is negligible compared to the inherent human error involved in using a handheld stopwatch. Stopwatch timing uncertainties will not be calculated in this instruction under the assumption that any instrument uncertainty will be insignificant compared to the human uncertainty.

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 97 of 108
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Air Return Fan 2A-A Backdraft Damper Opening Torque



Data Sheet 2 (Page 1 of 1) Air Return Fan 2B-B Backdraft Damper Opening Torque Data Package: Page ____ of ____ Date _____ COUNTERWEIGHT -FIRST BLADE SHAFT -DISTANCE \odot CENTER-PUNCHED MARK WHERE FORCE GAUGE IS TO BE PLACED AND PUSHED TO MEASURE COMMON BAR TO DAMPER OPENING FORCE. OTHER BLADE ARMS Distance from center line of shaft (D): inches Step 6.2[5]: Measured unseating force (F): lbs Opening Torque = Force $(F) \times$ Distance (D)Opening Torque = _____ Ibs × _____ in = _____ in-lb (F) (D)

 Data Taken By:

 Calculations Performed By:

Calculations Verified By:

WBN Unit 2	Containment Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 99 of 108	

Data Sheet 3 (Page 1 of 1)

Air Return Fan 2A-A Motor Data with Backdraft Damper Blocked Closed

Data Package: Page	of	Date

Air Return Fan 2A-A Motor Response Time:

Recorder Chart Speed (S): _____ mm/sec

Distance from Fan Start to Amperage Stabilization (D): _____ mm

Motor Response Time (t_M) = D ÷ S = _____ ÷ ____ = ____ sec

Measured Air Return Fan 2A-A Motor Current (Cable 2PL4875A):

PHASE	CURRENT (Amps)
A	
В	
С	

Sum of	Currents	(ΣI) =
--------	----------	--------

Average Current (I_{AVG}) = $\frac{\Sigma I}{3}$ = $\frac{1}{3}$ Amps

 Data Taken By:

 Calculations Performed By:

WBN Unit 2	Containmer	nt Air Return Fa	Rev. 000	2-PTI-030E-01 Rev. 0000 Page 100 of 108		
		Data Sheet 4 (Page 1 of 1)				
Air Retur	n Fan B-B Motor I	Data with Backo	Iraft Damper Bloc	ked Clo	osed	
Data Pacl	kage: Page	of		Da	ate	
Air Return	Fan 2B-B Motor R	Response Time:				
	Recorde	r Chart Speed (S	S):		mm/sec	
Distance from Fai	n Start to Amperag	e Stabilization ([D):		_ mm	
Motor Response Ti	me (t _M) = D ÷ S =		÷	_ =		_ sec
Measured	Air Return Fan 2B	-B Motor Curren	t (Cable 2PL4885B):		
	Р	HASE	CURRENT (Amps)		
		A				
		В				
		<u> </u>				

		C				
:	Sum of C	Currents (Σ I) =	: 			
Average Current (I _{AVG}) =	ΣΙ	<u>ΣI</u> =				Amps
	3	_	3	_		_ 711169
Data Taken B	y:		_			

Calculations Performed By: _____ Calculations Verified By: _____

WBN Unit 2	Contain	iment Air	Retu	rn Fans	Rev. 0	030E-01)000 101 of 108	3		
Data Sheet 5 (Page 1 of 3) Air Return Fan 2A-A Performance									
Data Pacl	kage: Page _	of				Da	ate		
	AIR RE		AN 2A	-A AIR FLO	W DATA:				
Air Return Fan 2A-A	A Total air flow	(ΣF):			CFM				
Hydrog	en Collector Air	Flows							
Tr-A Cntmt Dome (F	_D):	CFM							
Tr-A Rx Cavi	ty:	CFM	٦						
Acc Rm	4:	CFM							
Acc Rm	1:	CFM							
Incore Inst R	m:	CFM							
Acc Rm	2:	CFM							
Acc Rm	3:	CFM		Total Lowe		ment			
S/G 4 Enclosu	re:	CFM		dead-end : recirculatio	•	(ΣH_{DE})		CFM	
S/G 1 Enclosu	re:	CFM				()E/.			
Pzr Enclosu	re:	CFM		* Rx Cavity *Accumula	itor Rms				
Pzr Enclosu	re:	CFM		*Incore Ins *S/G Enclo					
S/G 2 Enclosu	re:	CFM		*Pzr Enclo					
S/G 3 Enclosu	re:	CFM	J						
Total Hydrogen (Collector air flov	v (ΣΗ):		CFM	_				
Free air flo	ow from Upper	· Compart	ment	to Lower Co	- ompartme	nt (F _F):			
$F_F = \Sigma F$	-ΣH =				=	CF	Μ		
Total air fl	ow from Uppe	r Compar	tment	to Lower Co	ompartme	ent (ΣF _{UL}):			
$\Sigma F_{UL} = F$	$F_{\rm F} + F_{\rm D} = $		_+_		_=	C	FM		

Data Sheet 5 (Page 2 of 3)

Air Return Fan 2A-A Performance

Data Package: Page ____ of ____

Date _____

	AIR R	ETURN FAN 2A-A	MOTOR OPER	ATING DATA	
	PHASE	CURRENT (Amps)		PHASE	VOLTAGE (Volts)
	A			A to B	
	В			A to C	
	С			B to C	
Sum of Cu	urrents (Σ I) =		Sum of Ve	oltages (ΣV) =	· · ·
		TEST (CONDITIONS		
Design Der	nsity (D _D) = _0).104 lb/ft ³	Barometri	c Pressure (B) =	inHg
Power Fa	ctor (PF) = _8	86%	Ambient Te	emperature (T) =	°F
Effic	iency (E) = _9	94%			
Average Cur	rrent (I _{AVG}) =	$\frac{\Sigma I}{3} =$	3 =		Amps
Average Volt	tage (V _{AVG}) =	$\frac{\Sigma V}{3} =$	=		Volts

Data Sheet 5 (Page 3 of 3)

Air Return Fan 2A-A Performance

Data Package: Page ____ of ____

Date _____

Calculate the Air Density during the test:

Test Density $(D_T) = \left(\frac{530}{460 + T}\right) \times \left(\frac{B}{29.92}\right) \times 0.075 \frac{lb}{ft^3}$ $D_T = \left(\frac{530}{460 + 1}\right) \times \left(\frac{29.92}{29.92}\right) \times 0.075 = \frac{lb}{ft^3}$

Calculate the Motor Horsepower at Test Density (HPTD)

 $HPDTD = \frac{I_{AVG} \times V_{AVG} \times PF \times E}{431}$ $HPTD = \frac{\times \times 0.86 \times 0.94}{431} = ----- HP$

Calculate the Motor Horsepower at Design Density (HPDD)

$$HPDD = HPTD \times \frac{D_{D}}{D_{T}}$$

 $HPDD = \underline{\qquad} \times \frac{0.104 \frac{lb}{ft^3}}{\underline{\qquad} \frac{lb}{ft^3}} = \underline{\qquad} HP$

Calculations Performed By: _____ Calculations Verified By: _____

WBN Unit 2	Containment	Air Return Fans	2-PTI-030E-01 Rev. 0000 Page 104 of 108						
Data Sheet 6 (Page 1 of 3) Air Return Fan 2B-B Performance Data Package: Page of									
		I FAN 2B-B AIR FLOV	V DATA:						
Air Return Fan 2B-B	Total air flow (ΣF):	. (CFM						
Hydroge	n Collector Air Flows								
Tr-B Cntmt Dome (F _D)									
Tr-B Rx Cavity									
Acc Rm 4	L: CFM	-							
Acc Rm 1	CFM	-							
Incore Inst Rm	n: CFM	-							
Acc Rm 2	2: CFM	-							
Acc Rm 3	B: CFM	- Total Lower	Compartment						
S/G 4 Enclosure	e: CFM	dead-end sp	paces* ι air flow (ΣΗ _{DE}): _	CFM					
S/G 1 Enclosure	CFM								
Pzr Enclosure	e: CFM	/							
Pzr Enclosure	e: CFM	<pre>- *Incore Inst _ *S/G Enclos</pre>							
S/G 2 Enclosure	e: CFM	*Pzr Enclos							
S/G 3 Enclosure	e: CFM								
Total Hydrogen Co	ollector air flow (Σ H):	CFM							
Free air flov	w from Upper Com	partment to Lower Cor	npartment (F _F):						
	ΣΗ =		CFM	1					
Total air flo	w from Upper Com	partment to Lower Co	mpartment (ΣF_{UL}):						
$\Sigma F_{UL} = F_F$	+ F _D =	+	= CF	Ъ					

WBN Unit 2		С	ontainment Air R	eturn Fans	2-PTI-030E-01 Rev. 0000 Page 105 of 108			
	Data Sheet 6 (Page 2 of 3)							
			Air Return Fan	2B-B Performar	nce			
Dat	Data Package: Page of Date							
	А		ETURN FAN 2B-B	MOTOR OPERA	TING DATA			
	PHAS	SE	CURRENT (Amps)		PHASE	VOLTAGE (Volts)		
	А				A to B			
	В		· · · · · · · · · · · · · · · · · · ·		A to C			
	С				B to C			
Sum of Cu	urrents (X	ΣI) = _		Sum of Vo	ltages (ΣV) =			
			TEST C	ONDITIONS				
Design Der	nsity (D _D))= 0	.104 lb/ft ³	Barometric	Pressure (B)	= inHg		
Power Fa	ctor (PF)) = _8	6%	Ambient Ter	mperature (T)	= <u>°F</u>		
Effic	iency (E)) = _9	4%					
Average Cur	rent (I _{AV0}	_G) =	$\frac{\Sigma I}{3} =$	=		Amps		
Average Vol	tage (V _{A\}	_{VG}) = -	$\frac{\Sigma V}{3} =$	3 =		Volts		

Data Sheet 6 (Page 3 of 3)

Air Return Fan 2B-B Performance

Data Package: Page ____ of ____

Date _____

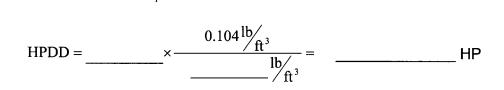
Calculate the Air Density during the test:

Calculate the Motor Horsepower at Test Density (HPTD)

$$HPDTD = \frac{I_{AVG} \times V_{AVG} \times PF \times E}{431}$$
$$HPTD = \frac{\times 0.86 \times 0.94}{431} = ----- HP$$

Calculate the Motor Horsepower at Design Density (HPDD)

$$HPDD = HPTD \times \frac{D_{D}}{D_{T}}$$



Calculations Performed By: _____ Calculations Verified By: _____

	BN it 2	Containment Air R	eturn Fans	Rev.	-030E-01 0000 107 of 108	
		(Pag	Sheet 7 le 1 of 1)			
		Air Return Fan To	otal Respo	nse limes		
	Data Pacl	age: Page of	-		Date	
		AIR RETURN FAN 2	A-A RESPO	ONSE TIME		
	Time	Delay Relay Response (t	_{TDA}) =	:		
		(from Step 6.3[14])		(mm:s	s)	
		Motor Response ((t _{MA}) =	:		
		(from Step 6.7[16	6.6])	(mm:s	ss)	
Total Res	sponse Tir	ne (t _{RA}):				
$t_{RA} = t_{TC}$	$b_A + t_{MA} =$	+		: :	= :	
		(mm:ss)		:ss)	(mm:ss)	
Calculati	ons Perfo	rmed By:	Calcu	lations Verifie	ed By:	
	Time	AIR RETURN FAN 2 Delay Relay Response (t (from Step 6.4[14])		ONSE TIME : (mm:s	ss)	
		Motor Response ((from Step 6.8[16	(t _{MB}) = 5.6])	: (mm:s	ss)	
Total Res	sponse Tir	ne (t _{RB}):				
t _{RB} = t _{TE}	_{bB} + t _{MB} =	: +		: :	= :	
		+ (mm:ss)	(mm	:ss)	(mm:ss)	
Calculati	ons Perfo	rmed By:	Calcu	lations Verifie	ed By:	

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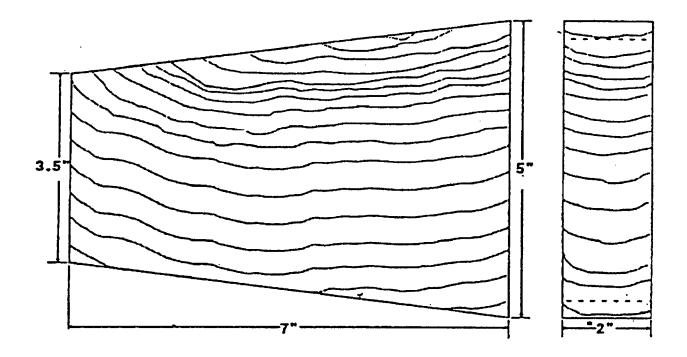
Figure 1 (Page 1 of 1)

Wedges for Blocking Backdraft Dampers

Data Package: Page _____ of _____

NOTES

- Four wedges required, each approximately 2" thick. 1)
- Standard 2" \times 6" finished lumber is acceptable. Thickness may be 1" to 1-1/2" if 2) finished lumber is used.



Date _____

WATTS B	BAR NUCLEAR PLANT	
UN	NIT 2 STARTUP	
TITLE: IC	ce Condenser System	
Instruct	tion No: 2-PTI-061-01	·
Re	evision No: 0000	
	The end of the second	
PREPARED BY: Kurt McCormac	K/Kur Man DATE 12	121/10
PRINT N/	IAME/SIGNATURE	, ,
REVIEWED BY: Daniel DOrc/	(Daniel () (In DATE 12/6	21/10
PRINT N/	IAME/ SIGNATURE	
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	· · · · · · · · · · · · · · · · · · ·	
INSTRUCTION APPROVAL		
JTG MEETING NO: 2-11-006		
	212	
JTG CHAIRMAN: Select	$-$ DATE $\frac{333}{32}$	
APPROVED BY:	DATE <u>3)3],,</u>	
PREOPERATIONAL STARTU	P MANAGER	
	· .	
TEST RESULTS APPROVAL		
JTG CHAIRMAN:		
APPROVED BY:		·
PREOPERATIONAL STARTU	JP MANAGER	

WBN Unit 2	ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 2 of 130
	·	Page 2 of 130

Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0000	3)3)11	ALL	Created using 1-PTI-061-01 Rev 1.

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Apper	ndix F:	FINAL ELECTRICAL BREAKER LINEUP	130

Date _____

1.0 INTRODUCTION

1.1 Test Objectives

This Preoperational Test Instruction (PTI) will demonstrate the capability of the Ice Condenser Lower Inlet Doors to properly annunciate in the Main Control Room in a Loss of Coolant Accident. It will also demonstrate the capability of associated containment isolation valves to properly respond to a Phase A Containment Isolation Signal. Valve controls, interlocks, alarms, indication, and fail-safe position on loss of control air will also be verified.

1.2 Scope

- A. Containment Isolation Valves:
 - 1. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL
 - 2. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL
 - 3. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL
 - 4. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL
 - 5. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION
 - 6. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION
 - 7. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION
 - 8. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION
- B. Lower Inlet Doors:

2-DOOR-61-LI01 through 2-DOOR-61-LI24, ICE COND LOWER INLET DOOR

1.

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1.2 Scope (continued)

- C. Main Control Room Alarms
 - 1. 2-XA-55-6E
 - a. 143A, GLYCOL EXP TNK LEVEL HI/HI-HI
 - b. 143B, GLYCOL EXP TNK LEVEL LO/LO-LO
 - c. 143C, GLYCOL HS-191B, 193B MISALIGNED WITH FCV
 - d. 144A, ICE COND INLET DOOR OPEN
 - 2. XI-61-187, ICE CONDENSER DOOR STATUS

2.0 **REFERENCES**

2.1 **Performance References**

A. SMP-9.0, Conduct of Test

2.2 Developmental References

- A. Final Safety Analysis Report
 - 1. FSAR-Amendment 102
 - a. Section 6.2.1, CONTAINMENT FUNCTIONAL DESIGN
 - b. Section 6.2.4, CONTAINMENT ISOLATION SYSTEM
 - c. Section 6.7, ICE CONDENSER SYSTEM
 - d. Table 14.2-1, PREOPERATIONAL TESTS SUMMARIES
 - (1) (SHEET 83 OF 89) CONTAINMENT ISOLATION SYSTEM TEST SUMMARY
 - (2) (SHEET 87 OF 89) ICE CONDENSER SYSTEM TEST SUMMARY

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2.2 Developmental References (continued)

- B. Drawings
 - 1. Flow Diagrams
 - a. 2-47W814-2 Rev 5, Flow Diagram Ice Condenser System
 - b. 2-47W848-7 Rev 1, Flow Diagram Control Air
 - c. 2-47W848-9 Rev 1, Flow Diagram Control Air
 - 2. Electrical
 - a. 2-45W600-61-1 Rev 0, Wiring Diagram Ice Condenser System Schematic Diagrams
 - b. 2-45W600-61-2 Rev 1, Wiring Diagrams Ice Condenser System Schematic Diagrams
 - c. 2-45N2676-4, Wiring Diagrams Solid State Protection Sys Train A Connection Diagram SH-4 ANTICIPATED, USED AS DESIGNED VERSION
 - d. 2-45N2676-5, Wiring Diagrams Solid State Protection Sys Train A Connection Diagram SH-5 ANTICIPATED, USED AS DESIGNED VERSION
 - e. 2-45N2677-4, Wiring Diagrams Solid State Protection Sys Train B Connection Diagram SH-4 ANTICIPATED, USED AS DESIGNED VERSION
 - f. 2-45N2677-5, Wiring Diagrams Solid State Protection Sys Train B Connection Diagram SH-5 ANTICIPATED, USED AS DESIGNED VERSION
 - g. 2-47B601-55-3, Electrical Instrument Tabulation ANTICIPATED
 - (1) DRA 52453-06 Rev 0
 - h. 2-47B601-55-4, Electrical Instrument Tabulation ANTICIPATED
 - (1) DRA 52453-07 Rev 0

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2.2 Developmental References (continued)

- i. 2-47B601-55-64, Electrical Instrument Tabulation ANTICIPATED, use Unit 1 AD
- j. 2-45B640-155, Contact Development of Selector Switches and Pushbuttons ANTICIPATED, USED AS DESIGNED VERSION
- k. 2-45B640-233, Contact Development of Selector Switches and Pushbuttons ANTICIPATED
 - (1) DRA 52366-23 Rev 0
- I. 2-45W760-61-1 Rev 0, Wiring Diagram Ice Condenser System Schematic Diagrams
- m. 45N2632-2 Rev 0, Wiring Diagrams Miscellaneous Control Connection Diagrams - Sheet 2
- n. 45N2632-9 Rev 1, Wiring Diagrams Miscellaneous Controls Connection Diagram - SHEET 9
- o. 45W2649-1 Rev 14, Wiring Diagrams Unit Control Board Panel 2-M-10 Connection Diagrams - Sheet 1
- p. 45W2649-2 Rev 10, Wiring Diagrams Unit Control Board Panel 2-M-10 Connection Diagrams - Sheet 2
- q. 45N2684-3 Rev 5, Wiring Diagrams NSSS Aux Relay Panel 2-R-58 Connection Diagram SH-3
- r. 45W2755-2 Rev 6, Wiring Diagram 480V Reactor Vent Bd 2A-A Connection Diagram
- s. 45W2756-2 Rev 8, Wiring Diagram 480V Reactor Vent Bd 2B-B Connection Diagram
- t. 2-45B655-E6E Rev 0, Electrical Annunciator Window Box XA-55-6E Engraving
 - (1) DRA 53228-107 Rev 0
- u. 2-45B655-6E Rev 0, Main Control Room Annunciator Inputs Window Box XA-55-6E

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2.2 Developmental References (continued)

- (1) DRA 53228-108 Rev 0
- 3. Logic/Control
 - a. 2-47W610-61-1 Rev 1, Electrical Control Diagram Ice Condenser System
 - b. 2-47W610-61-2 Rev 1, Electrical Control Diagram Ice Condenser System
 - c. 2-47W610-61-3, Rev 1, Electrical Control Diagram Ice Condenser System
 - d. 2-47W611-61-1 Rev 0, Electrical Logic Diagram Ice Condenser System
 - e. 2-47W611-61-2 Rev 1, Electrical Logic Diagram Ice Condenser System
- 4. Vendor Drawings
 - a. 7248D85 Rev 3, Contract # TIC82-54114-1, Watts Bar Units No. 1&2 Ice Condenser Doors Indicating Lights Wiring Diagram
- C. Documents
 - 1. 2-TSD-61, Ice Condenser System Testing, Rev 0.
 - 2. 2-TSD-88-5, Containment Isolation System, Rev 1.
 - 3. WB-DC-40-31.16, Rev 2, "Displacement Criteria for Vibration Qualification of Piping" Appendix A.

Date ____

3.0 PRECAUTIONS AND LIMITATIONS

- A. Test should be coordinated with Unit 1 Operations to mitigate any adverse impact to Unit 1.
- B. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Manual Procedure 1021.
- C. 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.
- D. Discrepancies between component ID tags and the description in a procedure/instruction if the UNIDs match, exclusive of place keeping zeros and train designators (e.g.; 2-HS-31-468 vs. 2-HS-031-0468) and the noun description is sufficient to identify the component. This condition does not require a TDN in accordance SMP-14.0. If the component label needs to be changed, a Tag Request Form (TR Card) should be processed in accordance with TI-12.14. Make an entry in the CTL and continue testing.
- E. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.
- F. All 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 contaminated areas.
- I. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.
- J. Test personnel will coordinate with Unit 1 Operations when manipulating Unit 1 equipment if required.

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3.0 PRECAUTIONS AND LIMITATIONS (continued)

- K. System water chemistry is within system specifiable parameters especially for fluids supplied from external sources.
- L. During the performance of this procedure visual observation of piping and components is required. This includes steady state and transient operations with visual confirmation that vibration is not excessive.
- M. If the vibration is determined to be excessive the Test Engineer shall initiate a Test Deficiency Notice (TDN).
- N. Locking in of cold glycol solution between two valves must be avoided.

Date _____

4.0 PREREQUISITE ACTIONS

NOTE

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

4.1 **Preliminary Actions**

[1] **EVALUATE** items on Open Watts Bar Integrated Task Equipment List (WITEL) **AND**

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

- [2] **ENSURE** changes to the references listed on Appendix A, have been reviewed, and determined **NOT** to adversely affect the test performance
- [3] **VERIFY** current revisions and change paper for referenced drawings has been reviewed and determined **NOT** to adversely affect the test performance, **AND**

ATTACH documentation of current drawing revision numbers and change paper that were reviewed to the data package.

- [4] **VERIFY** the test/performance copy of this Preoperational Test Instruction (PTI) is the current revision including any change notices and as needed, each test person assisting in this test has the current revision including any change notices.
- [5] **OBTAIN** copies of the applicable forms from the current revision in BSL, **AND**

ATTACH to this PTI for use during the performance of this PTI.

[6] **ENSURE** outstanding Design Change Notices (DCN's), Engineering Design Change Requests (EDCR's) or Temporary Alterations (TA's) do **NOT** adversely impact testing, **AND**

ATTACH documentation of DCN's, EDCR's, and TA's that were reviewed to the data package.

WBN Unit 2			2-PTI-061-01 Rev. 0000 Page 13 of 130
Data	Pacl	kage: Page of	Date
.1 Preli	mina	ry Actions (continued)	
[7]		SURE required Component Testing has to start of test.	been completed
[8]		NDUCT a pretest briefing with Test and 0 sonnel in accordance with SMP-9.0.	Operations
[9]		SURE that communications are available ting is to be conducted.	for areas where
[10]	Re Ma	SURE System 55, Annunciator and Seque cording System applicable TBK switches aster Switches are ON, and window softwe ENABLED for the following Annunciator	are ON, the are input(s)
	Α.	2-XA-55-6E-143A (Subsection 6.1)	
	В.	2-XA-55-6E-143B (Subsection 6.1)	
	C.	2-XA-55-6E-143C (Subsection 6.1)	
	D.	2-XA-55-6E-144A (Subsection 6.9)	
[11]	test	SURE components contained within the to t are under the jurisdictional control of Pre rtup Engineering (PSE) and/or Plant Ope	eoperational
[12]	coc	SURE a review of outstanding Clearance ordinated with U2 Operations for impact to formance, AND	
	RE	CORD in Appendix B, Temporary Conditi	on Log if required.
[13]		RFORM a pretest walkdown on equipmen sure no conditions exist that will impact te	

Date _____

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

[1] **ENSURE** the following M&TE or Equivalent is available, within its calibration due dates **AND**

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

- 0-60 minute Stopwatch (± 0.1 sec) 2 required (Subsections 6.1, 6.2, 6.3, 6.3[21], 6.5, 6.6, 6.7, & 6.8)
- [2] **ENSURE** the following equipment is available:
 - A. 9 Test Switches
 - B. 9 Grabber Style Jumpers with insulated boots

Date _____

4.3 Field Preparations

- [1] **ENSURE** The following systems are operational and have been placed in service to the extent necessary to perform this test:
- Α. System 32, Control Air. Β. System 55, Annunciator System. C. System 236, 125V DC Vital Power. D. System 235, 120V AC Vital Power. Ε. System 278, Main & Auxiliary Control Board. F. System 232, Reactor Vent Power. **ENSURE** switches are aligned per Appendix C, [2] "Switch Lineup." [3] **ENSURE** breakers are aligned per Appendix E, "Electrical Breaker Lineup." [4] **PERFORM** the switch lineup listed in Appendix C. [5] **PERFORM** the electrical breaker lineup listed in Appendix E. [6] **ENSURE** scaffolding has been constructed in MG SET RM/EL 782 to reach 2-ISV-32-3359 CONTROL AIR ISOLATION VALVE TO 2-FCV-61-191-A and 2-ISV-32-3361 CONTROL AIR ISOLATION VALVE TO 2-FCV-61-193-A.

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 16 of 1	30
	Data	Pack	age: Page of		Date
4.3	Field	l Prep	parations (continued)		
	[7]	PEI	RFORM the following:		
		A.	ENSURE 2-ISV-32-3359 CONTROL A VALVE TO 2-FCV-61-191-A is OPEN (EL 783/MG SET RM)	IR ISOLATION	
		В.	ENSURE 2-ISV-32-3361 CONTROL A VALVE TO 2-FCV-61-193-A is OPEN (EL 783/MG SET RM)	IR ISOLATION	
		C.	ENSURE 2-ISV-32-3552 CONTROL A VALVE TO 2-FCV-61-192-B is OPEN (
		D.	ENSURE 2-ISV-32-3553 CONTROL A VALVE TO 2-FCV-61-194-B is OPEN (
		E.	ENSURE 2-ISV-32-3411 CONTROL A VALVE TO 2-FCV-61-96-A is OPEN (E		<u></u>
		F.	ENSURE 2-ISV-32-3550 CONTROL A VALVE TO 2-FCV-61-97-B is OPEN (E		
		G.	ENSURE 2-ISV-32-3412 CONTROL A VALVE TO 2-FCV-61-110-A is OPEN (
		Н.	ENSURE 2-ISV-32-3551 CONTROL A VALVE TO 2-FCV-61-122-B is OPEN (

NOTE

Test Switch TS-1 will simulate a Normal level in the Glycol Expansion Tank when placed into the ON position.

[8] INSTALL a jumper with test switch TS-1 in the ON (Closed) position between Terminals Points 1 (Wire 8791) and 2 (Wire 879X), at TB309, in Panel 2-R-58 (C10P, EL708). (Subsection 6.1)

1st

CV

ا 	WBN Jnit 2			ONDENSER	RSYSTEM	2-PTI-061-01 Rev. 0000 Page 17 of 130	
	Data	Packa	ge: Page	of	-	Da	te
4.3	Field	l Prepa	rations (co	ontinued)			
	[9]		Wire G1C4 n Panel 2-R		nal Point 7 on 1	erminal Board TB	
		0101					1st
							CV
				1	NOTE		
		to the of	OFF positio ALL a jump , between V	on. Der with test s Vire G1C4 ar	switch in the O	lation Signal for 2-FC N position, labeled int 8 on Terminal	
		Board		Panel 2-R-4		0.1).	1st
							CV
	[11]		Wire G1D4 n Panel 2-R		nal Point 9 on 1	erminal Board TB	
							1st
							CV
				1	NOTE		
						lation Signal for 2-FC ed to the OFF positior	
		RETUF	RN AUX BLI ALL a jump , between V	DG ISOLATI per with test s Vire G1D4 au	ON when place switch in the O nd Terminal Pc	ed to the OFF position N position, labeled pint 9 on Terminal	
	YCOL	RETUF	RN AUX BLI ALL a jump , between V	DG ISOLATI per with test s Vire G1D4 au	ON when place switch in the O	ed to the OFF position N position, labeled pint 9 on Terminal	
	YCOL	RETUF	RN AUX BLI ALL a jump , between V	DG ISOLATI per with test s Vire G1D4 au	ON when place switch in the O nd Terminal Pc	ed to the OFF position N position, labeled pint 9 on Terminal	l
	YCOL	RETUF INST TS-3, Board	RN AUX BLI ALL a jump , between V d TB 618 in	DG ISOLATI	ON when place switch in the O nd Terminal Pc 8.(Subsection	ed to the OFF position N position, labeled pint 9 on Terminal	n. 1st
	[12]	RETUF INST TS-3, Board	RN AUX BLI ALL a jump , between V d TB 618 in Wire G1A4	DG ISOLATI	ON when place switch in the O nd Terminal Pc 8.(Subsection	ed to the OFF position N position, labeled int 9 on Terminal 6.2)	n 1st

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WBN Unit 2	ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 18 of 130
Data	Package: Page of	Date
l.3 Field	Preparations (continued)	
	NOTE	
	TS-4 will simulate a Phase A Containment SUPPLY TO AHUS CONTAINMENT ISOL	
[14]	INSTALL a jumper with test switch in the TS-4, between Wire G1A4 and Terminal Board TB 618 in Panel 2-R-51.(Subsection)	Point 6 on Terminal
	, , , , , , , , , , , , , , , , , , ,	1st
		CV
[15]	LIFT Wire G1B4 from Terminal Point 7 of 618 in Panel 2-R-51.	n Terminal Board TB
		1st
		CV
	NOTE	
	TS-5 will simulate a Phase A Containment to the OFF position.	Isolation Signal for 2-FCV-61-194-B
[16]	INSTALL a jumper with test switch in the TS-5, between Wire G1B4 and Terminal Board TB 618 in Panel 2-R-51.(Subsection)	Point 8 on Terminal
		CV
	LIFT Wire G1H5 from Terminal Point 9 o	n Terminal Board TB
[17]	646 in Panel 2-R-48.	
[17]	646 in Panel 2-R-48.	1st

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WBN Unit 2	ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 19 of 130
Data F	Package: Page of	Date
.3 Field I	Preparations (continued)	
· · · · · · · · · · · · · · · · · · ·	NOTE	
	S-6 will simulate a Phase A Containment Iso o the OFF position.	lation Signal for 2-FCV-61-96-A
	INSTALL a jumper with test switch in the O TS-6, between Wire G1H5 and Terminal Po Board TB 646 in Panel 2-R-48.(Subsection	pint 10 on Terminal
		1st
		CV
	LIFT Wire G1J5 from Terminal Point 9 on T 646 in Panel 2-R-51.	erminal Board TB
		1st
		CV
	NOTE	
	S-7 will simulate a Phase A Containment Iso o the OFF position.	lation Signal for 2-FCV-61-97-B
	INSTALL a jumper with test switch in the O TS-7, between Wire G1J5 and Terminal Poi Board TB 646 in Panel 2-R-51.(Subsection	int 10 on Terminal
		1st
		CV
L 3	LIFT Wire G1K5 from Terminal Point 7 on T 646 in Panel 2-R-48.	erminal Board TB
		1st
		CV

WBN Unit 2	ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 20 of 130
Data I	Package: Page of	Date
3 Field	Preparations (continued)	
	NOTE	
	S-8 will simulate a Phase A Containment Iso the OFF position.	lation Signal for 2-FCV-61-110-A
[22]	INSTALL a jumper with test switch in the O TS-8, between Wire G1K5 and Terminal Po Board TB 646 in Panel 2-R-48.(Subsection	oint 8 on Terminal
		1st
		CV
[23]	LIFT Wire G1L5 from Terminal Point 7 on T 646 in Panel 2-R-51.	erminal Board TB
		1st
		CV
	NOTE	
	S-9 will simulate a Phase A Containment Iso to the OFF position.	blation Signal for 2-FCV-61-122-
[24]	INSTALL a jumper with test switch in the O	N position labeled
	TS-9, between Wire G1L5 and Terminal Po Board TB 646 in Papel 2-R-51 (Subsection	int 8 on Terminal
	Board TB 646 in Panel 2-R-51.(Subsection	int 8 on Terminal
	•	int 8 on Terminal 6.8)
[25]	Board TB 646 in Panel 2-R-51.(Subsection	int 8 on Terminal 6.8)
[25]	Board TB 646 in Panel 2-R-51.(Subsection	int 8 on Terminal 6.8)
[25]	Board TB 646 in Panel 2-R-51.(Subsection	int 8 on Terminal 6.8)
[25] [26]	Board TB 646 in Panel 2-R-51.(Subsection	int 8 on Terminal 6.8) 1st CV at 2-LS-61-197A/B 1st CV
	Board TB 646 in Panel 2-R-51.(Subsection LIFT Wire 2M736B from Terminal Point 3, a (AZ305, EL 820). (Subsection 6.1)	int 8 on Terminal 6.8) 1st CV at 2-LS-61-197A/B 1st CV EAR:

Date _____

4.4 Approvals and Notifications

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

Preoperational Startup Manager	Date
Signature	

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

U2 US/SRO/SM Signature

Date

Date _____

5.0 ACCEPTANCE CRITERIA

- [1] Automatic controls and interlocks function properly in response to normal simulated input signals:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.1[58])
 - B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Step 6.2[42])
 - C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.3[23])
 - D. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION (Step 6.4[23])
 - E. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.5[24])
 - F. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.6[24])
 - G. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.7[24])
 - H. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.8[24])
- [2] The glycol expansion tank annunciator annunciates in the MCR:
 - A. LO-LO Level (Steps 6.1[30]A, 6.1[30]B)
 - B. LO Level (Steps 6.1[37], 6.1[38])
 - C. HI Level (Steps 6.1[43], 6.1[44])

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- D. HI-HI Level (Steps 6.1[49], 6.1[50])
- [3] The following valves close upon receipt of glycol expansion tank LO-LO level signal:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.1[30]C)
 - B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Step 6.2[30]B)
- [4] Annunciator window 143C "GLYCOL HS-61-191B, 193B MISALIGNED WITH FCV" Annunciates in the MCR while Glycol Expansion Tank level is LO-LO and one of the following valves is OPEN:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.1[32])
 - B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Step 6.2[32])
- [5] The following valves can be operated from the MCR. Indicating lights indicate the correct valve position in the MCR:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.1[58])
 - B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Step 6.2[42])
 - C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.3[23])
 - D. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION (Step 6.4[23])
 - E. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.5[24])

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- F. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.6[24])
- G. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.7[24])
- H. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.8[24])

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- [6] The following Containment Isolation Valves close on receipt of a simulated Phase A Containment Isolation Signal:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.1[7])
 - B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Step 6.2[7])
 - C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.3[5])
 - D. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION (Step 6.4[5])
 - E. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.5[6])
 - F. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.6[6])
 - G. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.7[6])
 - H. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.8[6])
- [7] The following Containment Isolation Valves remain in the closed position after reset of the simulated Phase A Containment Isolation Signal:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.1[8])

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- B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Step 6.2[8])
- C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6:3[6])
- D. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION (Step 6.4[6])
- E. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.5[7])
- F. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.6[7])
- G. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.7[7])
- H. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.8[7])
- [8] The Containment Isolation Status Panel Train A or B indicates that each of the following valves close upon receipt of a Phase A Containment Isolation Signal and remain closed upon signal reset:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Steps 6.1[7] and 6.1[8])
 - B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Steps 6.2[7] and 6.2[8])
 - C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Steps 6.3[5] and 6.3[6])

Date _____

- D. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION (Steps 6.4[5] and 6.4[6])
- E. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Steps 6.5[6] and 6.5[7])
- F. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Steps 6.6[6] and 6.6[7])
- G. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Steps 6.7[6] and 6.7[7])
- H. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Steps 6.8[6] and 6.8[7])

Date

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ACCEPTANCE CRITERIA (continued)
[9] The following Containment Isolation Valves close in ≤ 30 seconds:

5.0

- A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Steps 6.1[13.1] and 6.1[13.2])
- B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Steps 6.2[13.1] and 6.2[13.2])
- C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Steps 6.3[9.1] and 6.3[9.2])
- D. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION (Steps 6.4[9.1] and 6.4[9.2]) I
- E. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Steps 6.5[10.1] and 6.5[10.2])
- F. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Steps 6.6[10.1] and 6.6[10.2])
- G. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Steps 6.7[10.1] and 6.7[10.2])
- H. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Steps 6.8[10.1] and 6.8[10.2])
- [10] The following Containment Isolation Valves fail in the closed position upon a loss of control air:
 - A. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.1[22])

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- B. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION (Step 6.2[22])
- C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION (Step 6.3[13])
- D. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION (Step 6.4[13])
- E. 2-FCV-61,-96, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.5[14])
- F. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL (Step 6.6[14])
- G. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.7[14])
- H. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL (Step 6.8[14])
- [11] The lower inlet door status position monitor and annunciator properly alarm in the Main Control Room (Subsection 6.9).

Date _____

6.0 PERFORMANCE

NOTE

Stroke timing of valves will be measured from the handswitch actuation to GREEN light OFF upon opening and RED light OFF upon closing.

6.1 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test

NOTES 1) This subsection will test 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION from its control station and verify operability of all interlocks, indicating lights, and annunciators.

- During the performance of this subsection, visual observation of transient and steady state vibrations is required.
 - [1] **ENSURE** prerequisites listed in Section 4.0 have been completed.
 - [2] ENSURE 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION, is CLOSED by Green Light ON at 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA, at 2-M-9.
 - [3] **PLACE** 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA, at 2-M-9, in the OPEN position.
 - [4] **PLACE** 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-191-A is FULLY OPEN, **THEN**

RELEASE to A-AUTO, AND

VERIFY:

- A. Red Light, at 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA ON
- B. Green Light, at 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA OFF
- [5] **PLACE** 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the P-AUTO position.

	Data	Pack	kage: Page of	Date
6.1	2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)			
	[6]		RIFY the following for 2-FCV-61-191-A, GLYCOL SUPPLY AHUS CONTAINMENT ISOLATION:	,
		A.	2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA Re Light ON	d
		В.	2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA Green Light OFF	
		C.	2-XX-55-6E Window 61, FCV-61-191, Red Light ON	
		D.	2-XX-55-6E Window 61, FCV-61-191, Green Light OFF	
		E.	2-FCV-61-191-A GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION OPEN (EL 783/MG SET RM).	
NOTE				

Steps 6.1[7] and 6.1[8] will verify that 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[7] **PLACE** Test Switch TS-2 at Terminal Board TB 618 in Panel 2-R-48 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6E Window 61, FCV-61-191, Green Light ON (ACC CRIT)
- B. 2-XX-55-6E Window 61, FCV-61-191, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is CLOSED.(Local) (ACC CRIT)

	Data F	Pack	age: Page of	Date	
6.1		FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT OLATION Functional Test (continued)			
	[8]		PLACE Test Switch TS-2 at Terminal Board TB 618 in Panel 2-R-48 to the ON position, AND		
		VEF	RIFY:		
		A.	2-XX-55-6E Window 61, FCV-61-191, Green Light ON (ACC CRIT)		
		В.	2-XX-55-6E Window 61, FCV-61-191, Red Light OFF (ACC CRIT)		
		C.	2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is CLOSED.(Local) (ACC CRIT)		
	[9]		CE 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA -M-9, in the OPEN position.	<u> </u>	
	[10]	at 2- GLY	CE 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA -M-9, in the OPEN position until 2-FCV-61-191-A, /COL SUPPLY TO AHUS CONTAINMENT ISOLATION is .LY OPEN, THEN		
		REL	EASE to A-AUTO		
	[11]	PLACE 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the P-AUTO position.			

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	Data	Pack	age: Page of	Date
6.1	2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)			
	[12] VERIFY the following for 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION:			
		Α.	2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA Re Light ON	ed
		В.	2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA Green Light OFF	
		C.	2-XX-55-6E Window 61, FCV-61-191, Red Light ON	
		D.	2-XX-55-6E Window 61, FCV-61-191, Green Light OFF	
		E.	2-FCV-61-191-A GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION OPEN (Local)	
			NOTES	

- 1) Steps 6.1[13] and 6.1[16] require valve stroke timing locally at the valve and remotely at the Control Switch in both the Open and Closed positions.
- Local timing begins with the initiating signal and is concluded with the completion of 2) valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - PLACE 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA [13] in the CLOSE position AND

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[13.1] **RECORD** remote closing time at 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA. (ACC CRIT)

seconds

 $(\leq 30 \text{ seconds})$

M&TE _____ Cal Due Date _____

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	Data Package: Page of Date					
	6.1 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)					
GL						
		_	seconds $(\leq 30 \text{ s})$	seconds)		
		M&	TE Cal Due Dat	te		
	[14]		RIFY the following for 2-FCV-61-191-A, GLYCOL SUPPLY AHUS CONTAINMENT ISOLATION:			
		A.	2-HS-61-191A, GLYCOL TO AHU OUTSI Light OFF	DE CIV-ØA Red		
		В.	2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA Green Light ON			
		C.	2-XX-55-6E Window 61, FCV-61-191, Red	d Light OFF		
		D.	2-XX-55-6E Window 61, FCV-61-191, Gre	een Light ON		
		E.	2-FCV-61-191-A, GLYCOL SUPPLY TO A CONTAINMENT ISOLATION CLOSED (L			
			NOTE			
	Time the valve stroke from 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV- \varnothing A and locally at the valve.					

[15] **PLACE** 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the OPEN position.

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	Data I	Packa	ge: Page	of			Date
6.1	2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)						
	[16]		E 2-HS-61-1 OPEN positi	191A, GLYCOL TO AHU OUTSIDE CIV-ØA ion, AND			
		SIMULTANEOUSLY TIME the valve stroke, THEN					
		RELE	ASE to A-AU	UTO.			
	[16	6.1]	RECORD remote opening time at 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA.				
						seconds	
		M&TE	E		_ Cal Due Date _		
	[16.2]			JPPLY TO AF	me at 2-FCV-61-1 IUS CONTAINME		
						_ seconds	
	M&TE		E		_ Cal Due Date		
	[17]		E 2-HS-61-1 P-AUTO pos		L TO AHU OUTS	IDE CIV-ØA	·

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6.1 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)

NOTE

Time the valve stroke from 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV- \varnothing A and locally at the valve. Use light indication at 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV- \varnothing A.

[18] **PLACE** 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the CLOSE position **AND**

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to P-AUTO.

[18.1] **RECORD** remote closing time at 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA.

	seconds
M&TE	Cal Due Date

[18.2] **RECORD** local closing time at 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION.

- - - - - - -

M&TE _____ Cal Due Date _____

- [19] **PLACE** 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the OPEN position.
- [20] **PLACE** 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA in the OPEN position until 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is FULLY OPEN, by light indication, **THEN**

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6.1 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)

NOTE

A ladder or scaffold will be required to reach the Control Air Isolation Valve for 2-FCV-61-191-A.

- [21] **CLOSE** 2-ISV-32-3359, CONTROL AIR ISOLATION VALVE TO 2-FCV-61-191-A.
- [22] **OPEN** petcock to vent control air at 2-PREG-61-191, CONTROL AIR PRESSURE REG FOR 2-FCV-61-191-A, **AND**

VERIFY 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION CLOSES. (ACC CRIT)

- [23] **CLOSE** petcock at 2-PREG-61-191, CONTROL AIR PRESSURE REG FOR 2-FCV-61-191-A.
- [24] **OPEN** 2-ISV-32-3359, CONTROL AIR ISOLATION VALVE TO 2-FCV-61-191-A.
- [25] **PLACE** 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA in the OPEN position for several seconds to establish valve travel, **THEN**

RELEASE to A-AUTO, AND

VERIFY 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION returns to CLOSED.

[26] **PLACE** 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA in the OPEN position until 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is FULLY OPEN, by light indication, **THEN**

- [27] **PLACE** 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the P-AUTO position.
- [28] **VERIFY** Annunciator window 2-XA-55-6E-143B, GLYCOL EXP TNK LEVEL LO/LO-LO, is CLEAR.

	Data F	Package: Page of	Date		
6.1	2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)				
	[29]	PLACE TS-1 at TB309, in Relay Panel 2-R-58, to OFF (Open) to simulate a glycol expansion tank LO-LO level.			
	[30]	VERIFY the following:			
		A. Annunciator Window 2-XA-55-6E-143B, GLYCOL EXP TNK LEVEL LO/LO-LO, ALARMS (ACC CRIT).			
		 B. Event Display Legend indicates 143B GLYCOL EXP TNK LEVEL LO-LO (2-LS-61-197B/A) is in ALARM (Red) (ACC CRIT). 			
		C. By light indication at 2-HS-61-191A, GLYCOL TO AHU OUTSIDE CIV-ØA that 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is CLOSED (ACC CRIT).			
	[31]	VERIFY 2-XA-55-6E-143C, GLYCOL HS-61-191B, 193B MISALIGNED WITH FCV, is CLEAR.			
	[32]	PLACE 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the OPEN position, AND			
		VERIFY 2-XA-55-6E-143C, GLYCOL HS-61-191B, 193B MISALIGNED WITH FCV, ALARMS (ACC CRIT)			
	[33]	PLACE test switch TS-1 at TB 309 in Relay Panel 2-R-58, to ON (Closed) to simulate normal level in the glycol expansion tank, AND			
		VERIFY Annunciator Window 143-C, GLYCOL HS-61-191B, 193B MISALIGNED WITH FCV, CLEARS.			
	[34]	PLACE 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA in the P-AUTO position.	<u></u>		

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	Data	Pack	cage: Page of	Date	
6.1			-191-A, GLYCOL SUPPLY TO AHUS CON IN Functional Test (continued)	ITAINMENT	
	[35]	VEI	RIFY the following indications:		
		A.	2-XA-55-6E-143B, GLYCOL EXP TNK LE is CLEAR.	EVEL LO/LO-LO,	
		В.	Event Display Legend indicates 143B GL LEVEL LO-LO (2-LS-61-197B/A) is NORM		
		C.	By light indication at 2-HS-61-191A, GLY OUTSIDE CIV-ØA that 2-FCV-61-191-A r CLOSED.		
	[36]	and EXI	ACE a jumper between Terminal Points 4 (\ 1 5 (Wire 2NM6E) at 2-LIS-61-195B/A, GLY PANSION TANK LOW LEVEL located at A	COL Z305° EL 820 to	
		sim	ulate a LO level in the glycol expansion tan	k.	1st
					CV
	[37]		RIFY 2-XA-55-6E-143B, GLYCOL EXP TNI , ALARMS (ACC CRIT).	K LEVEL LO/LO-	
	[38]	EX	RIFY the Event Display Legend indicates 14 P TNK LEVEL LO (2-LS-61-195B), is in AL/ CC CRIT).		
	[39]	2M	MOVE the jumper between Terminal Points 737A) and 5 (Wire 2NM6E) at 2-LIS-61-195 PANSION TANK LOW LEVEL.		
					1st
					CV
	[40]		RIFY 2-XA-55-6E-143B, GLYCOL EXP TNI CLEARS.	K LEVEL LO/LO-	
	[41]		RIFY the Event Display Legend indicates 14 P TNK LEVEL LO (2-LS-61-195B), is NORI		

9
1st
CV
1st
CV
1st
CV

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	-	
[48]	PLACE a jumper between Terminal Poin and 3 (Wire 2M736B) at 2-LS-61-197A/B EXPANSION TANK LEVEL located at A2 simulate a HI-HI level in the glycol expan	9, GLÝCOL Z305°, EL820 to
		1st
		CV
[49]	VERIFY 2-XA-55-6E-143A, GLYCOL EX HI, ALARMS (ACC CRIT).	P TNK LEVEL HI/HI-
[50]	VERIFY the Event Display Legend indica EXP TNK LEVEL HI-HI (2-LS-61-197A), (ACC CRIT).	
[51]	REMOVE Test Switch TS-2 at Terminal I 2-R-48.	
		1st
		CV
[52]	LAND wire G1C4 onto Terminal Point 7 or R-48.	on TB 618 in Panel 2-
		1st
		CV
[53]	REMOVE the jumper between Terminal 3 (Wire 2M736B) at 2-LS-61-197A/B, GL	· · · · ·
		1st
		CV
[54]	VERIFY 2-XA-55-6E-143A, GLYCOL EX HI, CLEARS.	P TNK LEVEL HI/HI-
[55]	VERIFY the Event Display Legend indica EXP TNK LEVEL HI-HI (2-LS-61-197A) i	
	Jnit 2 Data 2-FC [48] [49] [50] [51] [52] [53]	 Jnit 2 Data Package: Page of 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS ISOLATION Functional Test (continued) [48] PLACE a jumper between Terminal Poin and 3 (Wire 2M736B) at 2-LS-61-197A/B EXPANSION TANK LEVEL located at AJ simulate a HI-HI level in the glycol expansion HI, ALARMS (ACC CRIT). [50] VERIFY 2-XA-55-6E-143A, GLYCOL EX HI, ALARMS (ACC CRIT). [50] VERIFY the Event Display Legend indica EXP TNK LEVEL HI-HI (2-LS-61-197A), (ACC CRIT). [51] REMOVE Test Switch TS-2 at Terminal 2-R-48. [52] LAND wire G1C4 onto Terminal Point 7 R-48. [53] REMOVE the jumper between Terminal 3 (Wire 2M736B) at 2-LS-61-197A/B, GL TANK LEVEL. [54] VERIFY 2-XA-55-6E-143A, GLYCOL EX HI, CLEARS. [55] VERIFY the Event Display Legend indica

Data Package: Page ____ of ____ Date ____

6.1 2-FCV-61-191-A, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Test (continued)

[56] **PLACE** 2-HS-61-191B, GLYCOL TO AHU OUTSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-191-A is FULLY OPEN, **THEN**

- [57] **VERIFY** no excessive vibration of the piping system and components associated with the performance of this subsection was observed.
- [58] **VERIFY** the successful completion of this Subsection 6.1 (ACC CRIT).

Date _____

6.2 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test

NOTES

- 1) This subsection will test 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION from its control station and verify operability of all interlocks, indicating lights, and annunciators.
- 2) During the performance of this subsection, visual observation of transient and steady state vibrations is required.
 - [1] **ENSURE** prerequisites listed in Section 4.0 have been completed.
 - [2] ENSURE 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION is CLOSED by Green Light ON at 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA, at 2-M-9.
 - [3] **PLACE** 2-HS-61-193B, GLYCOL FRM AHU OUTSIDE CIV-ØA, at 2-M-9, in the OPEN position.
 - PLACE 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV ØA, at 2-M-9, in the OPEN position until 2-FCV-61-193-A,
 GLYCOL RETURN AUX BLDG ISOLATION is FULLY OPEN,
 THEN

RELEASE to A-AUTO, AND

VERIFY:

- A. Red Light, at 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA ON
- B. Green Light, at 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA OFF
- [5] **PLACE** 2-HS-61-193B, GLYCOL FRM AHU OUTSIDE CIV-ØA in the P-AUTO position.

	Data	Paci	cage: Page of	Date	
6.2	2 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test (continued)				
	[6]		RIFY the following for 2-FCV-61-193-A, GLYCOL RETUR X BLDG ISOLATION:	N	
		A.	2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA Red Light ON		
		В.	2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA Green Light OFF		
		C.	2-XX-55-6E Window 62, FCV-61-193, Red Light ON		
		D.	2-XX-55-6E Window 62, FCV-61-193, Green Light OFF		
		E.	2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION OPEN (EL 783/MG SET RM)		
		-	NOTE		
Stens	6 2[7] :	and f	218] will verify that 2-ECV-61-193-A GLYCOL RETURN		

Steps 6.2[7] and 6.2[8] will verify that 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[7] **PLACE** Test Switch TS-3 at Terminal Board TB 618 in Panel 2-R-48 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6E Window 62, FCV-61-193, Green Light ON (ACC CRIT)
- B. 2-XX-55-6E Window 61, FCV-61-193, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION is CLOSED.(Local) (ACC CRIT)

	Data	Pacl	kage: Page of	Date			
6.2		FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION unctional Test (continued)					
	[8]		ACE Test Switch TS-2 at Terminal Board TB 618 in Pane R-48 to the ON position, AND	əl			
		VE	RIFY:				
		A.	2-XX-55-6E Window 62, FCV-61-193, Green Light ON (ACC CRIT)				
		В.	2-XX-55-6E Window 61, FCV-61-193, Red Light OFF (ACC CRIT)				
		C.	2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION is CLOSED.(Local) (ACC CRIT)				
	[9]		ACE 2-HS-61-193B, GLYCOL FRM AHU OUTSIDE CIV- , at 2-M-9, in the OPEN position.				
	[10]	PL/ ØA GL [*] TH					
		RELEASE to A-AUTO					
	[11]		ACE 2-HS-61-193B, GLYCOL FRM AHU OUTSIDE CIV- in the P-AUTO position.				
	[12]		RIFY the following for 2-FCV-61-193-A, GLYCOL RETUF X BLDG ISOLATION:	RN			
		A.	2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA Red Light ON				
		В.	2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA Green Light OFF				
		C.	2-XX-55-6E Window 62, FCV-61-193, Red Light ON				
		D.	2-XX-55-6E Window 62, FCV-61-193, Green Light OFF				
		E.	2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION OPEN (Local)				

Date _____

6.2 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test (continued)

- 1) Steps 6.2[13] and 6.2[16] require valve stroke timing locally at the valve and remotely at the Control Switch in both the Open and Closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - [13] **PLACE** 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA in the CLOSE position, **AND**

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[13.1] **RECORD** remote closing time at 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA. (ACC CRIT)

 seconds	(≤ 30 seconds)

M&TE	Cal Due Date

[13.2] **RECORD** local closing time at 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION. (ACC CRIT)

seconds

(≤ 30 seconds)

M&TE _____ Cal Due Date _____

	Data	Pacl	kage: Page of	Date			
6.2		2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test (continued)					
	[14]	[14] VERIFY the following for 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION:					
		A.	2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA Red Light OFF				
		В.	2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA Green Light ON				
		C.	2-XX-55-6E Window 62, FCV-61-193, Red Light OFF				
		D.	2-XX-55-6E Window 62, FCV-61-193, Green Light ON				
		E.	2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION CLOSED (Local)				
	NOTE						
Time	the val	/e str	oke from 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE C	CIV-ØA and			

locally at the valve.

- PLACE 2-HS-61-193B, GLYCOL FRM AHU OUTSIDE CIV-[15] ØA in the OPEN position.
- PLACE 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-[16] ØA in the OPEN position, AND

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[16.1] **RECORD** remote opening time at 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA.

seconds $(\leq 30 \text{ seconds})$

M&TE _____ Cal Due Date _____

WBN Unit 2		ICE CONDENSER SY	STEM	2-PTI-061-01 Rev. 0000 Page 48 of 130		
Da	ta Pacl	kage: Page of		Date		
	6.2 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test (continued)					
	[16.2]	RECORD local opening tim GLYCOL RETURN AUX B				
	_	seconds	(≤ 30 s	econds)		
	M&	те	Cal Due Dat	e		
[17	-	ACE 2-HS-61-193B, GLYCOL in the P-AUTO position.	FRM AHU OU	JTSIDE CIV-		
		NOT	E			
		oke from 2-HS-61-193B, GLY e. Use light indication at 2-HS-				
[18	-	ACE 2-HS-61-193B, GLYCOL in the CLOSE position, AND	FRM AHU OU	JTSIDE CIV-		
	SIN	IULTANEOUSLY TIME the va	alve stroke, T H	łEN		
	RE	LEASE to P-AUTO.				
	[18.1]	RECORD remote closing ti GLYCOL FRM AHU OUTS		I-193A,		
				seconds		
	M&	TE	Cal Due Dat	e		
	[18.2]	RECORD local closing time GLYCOL RETURN AUX B				
				seconds		
	M&	те	Cal Due Dat	e		
[19		ACE 2-HS-61-193B, GLYCOL in the OPEN position.	FRM AHU OU	JTSIDE CIV-		

Date _____

6.2 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test (continued)

[20] PLACE 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA in the OPEN position until 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION is FULLY OPEN, by light indication, THEN

RELEASE to A-AUTO.

NOTE

A ladder or scaffold will be required to reach the Control Air Isolation Valve for 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION.

- [21] **CLOSE** 2-ISV-32-3361, CONTROL AIR ISOLATION VALVE TO 2-FCV-61-193-A.
- [22] **OPEN** petcock to vent control air at 2-PREG-61-193, CONTROL AIR PRESSURE REG FOR 2-FCV-61-193-A, **AND**

VERIFY 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION CLOSES. (ACC CRIT)

- [23] **CLOSE** petcock at 2-PREG-61-193, CONTROL AIR PRESSURE REG FOR 2-FCV-61-193-A.
- [24] **OPEN** 2-ISV-32-3361, CONTROL AIR ISOLATION VALVE TO 2-FCV-61-193-A.
- [25] PLACE 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA in the OPEN position for several seconds to establish valve travel, THEN

RELEASE to A-AUTO, **AND**

VERIFY 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION returns to CLOSED.

[26] PLACE 2-HS-61-193A, GLYCOL FRM AHU OUTSIDE CIV-ØA in the OPEN position until 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION is FULLY OPEN, by light indication, THEN

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	Data	Pacl	kage: Page of	Date
5.2			-193-A, GLYCOL RETURN AUX BLDG IS al Test (continued)	OLATION
	[27]		ACE 2-HS-61-193B, GLYCOL FRM AHU (in the P-AUTO position.	DUTSIDE CIV-
	[28]		RIFY 2-XA-55-6E-143B, GLYCOL EXP TN , is CLEAR.	IK LEVEL LO/LO-
	[29]		ACE TS-1 at TB 309 in 2-R-58, to OFF (Op col expansion tank LO-LO level.	pen) to simulate a
	[30]	VE	RIFY the following:	
		A.	2-XA-55-6E-143B, GLYCOL EXP TNK L ALARMS	EVEL LO/LO-LO,
	·	В.	By light indication at 2-HS-61-193A, GLY OUTSIDE CIV-ØA, that 2-FCV-61-193-A RETURN AUX BLDG ISOLATION is CLO (ACC CRIT).	, GLYCOL
	[31]		RIFY 2-XA-55-6E-143C, GLYCOL HS-61- ⁻ SALIGNED WITH FCV, is CLEAR.	191B, 193B
	[32]		ACE 2-HS-61-193B, GLYCOL FRM AHU (in the OPEN position, AND	OUTSIDE CIV-
			RIFY 2-XA-55-6E-143C, GLYCOL HS-61- SALIGNED WITH FCV, ALARMS (ACC CF	
	[33]	ON	ACE Test Switch TS-1 at TB 309 in Relay (Closed) to simulate normal level in the gl k, AND	
			RIFY 2-XA-55-6E-143C, GLYCOL HS-61- ⁻ SALIGNED WITH FCV, CLEARS.	191B, 193B
	[34]		ACE 2-HS-61-193B, GLYCOL FRM AHU (in the P-AUTO position.	OUTSIDE CIV-

•

WBN Unit 2			ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 51 of 130					
	Data	Pacl	kage: Page of	Date					
6.2		2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test (continued)							
	[35]	VE	RIFY the following indications:						
		Α.	2-XA-55-6E-143B, GLYCOL EXP TNK LE is CLEAR.	VEL LO/LO-LO,					
		В.	By light indication at 2-HS-61-193A, that 2 GLYCOL RETURN AUX BLDG ISOLATIC CLOSED.						
	[36]		MOVE Test Switch TS-3 at Terminal Board	TB 618 in Panel					
		2-14	2-48.		1st				
					CV				
	[37]		ND wire G1D4 onto Terminal Point 9 on Ter 3 in Panel 2-R-48.	minal Board TB	-				
					1st				
					CV				
	[38]		MOVE Test Switch TS-1 between Terminal 91) and 2 (Wire 879X) at TB 309, in Relay P	•					
					1st				
					CV				
	[39]		ND Wire 8791 at Terminal Point 1, at TB 30 nel 2-R-58.	9, in Relay					
					1st				
					CV				
	[40]	ØA	ACE 2-HS-61-193A, GLYCOL FRM AHU O ,, at 2-M-9, in the OPEN position until 2-FCV YCOL RETURN AUX BLDG ISOLATION is EN	/-61-193-A,					
		RE	LEASE to A-AUTO						
	[41]	con	RIFY no excessive vibration of the piping sy nponents associated with the performance o psection was observed.						

Data Package: Page ____ of ____ Date _____

6.2 2-FCV-61-193-A, GLYCOL RETURN AUX BLDG ISOLATION Functional Test (continued)

[42] **VERIFY** the successful completion of this Subsection 6.2 (ACC CRIT).

1)

2)

Data Package: Page _____ of _____

Date _____

6.3 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Testing

NOTES This subsection will test 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION from its control station and verify operability of all interlocks, indicating lights, and annunciators. During the performance of this subsection, visual observation of transient and steady state vibrations is required. **ENSURE** prerequisites listed in Section 4.0 have been [1] completed. ENSURE 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS [2] CONTAINMENT ISOLATION, is CLOSED by Green Light ON at 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA. PLACE 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA, in [3] the OPEN position until 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is FULLY OPEN, THEN **RELEASE** to A-AUTO. [4] VERIFY the following for 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION: Α. 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA, Red Light, ON B. 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA, Green Light, OFF C. 2-XX-55-6F Window 61, FCV-61-192, Red Light ON. D. 2-XX-55-6F Window 61, FCV-61-192, Green Light OFF. E. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION OPEN (EL 806/AZ 295).

Date _____

6.3 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Testing (continued)

NOTE

Steps 6.3[5] and 6.3[6] will verify that 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[5] **PLACE** Test Switch TS-4 at Terminal Board TB 618 in Panel 2-R-51 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 61, FCV-61-192, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 61, FCV-61-192, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is CLOSED.(Local) (ACC CRIT)
- [6] **PLACE** Test Switch TS-4 at Terminal Board TB 618 in Panel 2-R-51 to the ON position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 61, FCV-61-192, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 61, FCV-61-192, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is CLOSED.(Local) (ACC CRIT)
- [7] PLACE 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is FULLY OPEN, THEN

	Data	Pacl	kage: Page of	Date			
6.3		2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Testing (continued)					
	[8]	[8] VERIFY the following for 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION:					
	·	A.	2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA Red Light ON				
		В.	2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA Green Light OFF				
		C.	2-XX-55-6F Window 61, FCV-61-192, Red Light ON				
		D.	2-XX-55-6F Window 61, FCV-61-192, Green Light OFF				
		E.	2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION OPEN (Local)				

NOTES

- 1) Steps 6.3[9] and 6.3[11] require valve stroke timing locally at the valve and remotely at the Control Switch in both the Open and Closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - [9] **PLACE** 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA, at 2-M-9 in the CLOSE position, **AND**

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[9.1] **RECORD** remote closing time at 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA. (ACC CRIT)

seconds

(≤ 30 seconds)

M&TE _____ Cal Due Date _____

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 56 of 130			
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6.3			-192-B, GLYCOL SUPPLY TO AHUS (IN Functional Testing (continued)	CONTAINMENT			
	[9.2] RECORD local closing time at 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION. (ACC CRIT)						
		_	seconds (≤	30 seconds)			
		M&	TE Cal Due	e Date			
	[10]		RIFY the following for 2-FCV-61-192-B, AHUS CONTAINMENT ISOLATION:	GLYCOL SUPPLY			
		A.	2-HS-61-192, GLYCOL TO AHU INSI Light OFF.	DE CIV-ØA, Red			
		В.	2-HS-61-192, GLYCOL TO AHU INSI Light ON.	DE CIV-ØA, Green			
		C.	2-XX-55-6F Window 61, FCV-61-192,	Red Light OFF.			
		D.	2-XX-55-6F Window 62, FCV-61-192,	Green Light ON.			
		E.	2-FCV-61-192-B, GLYCOL SUPPLY CONTAINMENT ISOLATION CLOSE				
	NOTE						
Tim	e the valv	e str	oke from 2-HS-61-192 and locally at the	e valve.			
	[11]	PL/	ACE 2-HS-61-192 in the OPEN positior	n, AND			

SIMULTANEOUSLY TIME the valve stroke, THEN

.

	WBN Unit 2			SYSTEM	2-PTI-061-01 Rev. 0000 Page 57 of 13	30
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6.3	2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION Functional Testing (continued)					
	[17	1.1]	RECORD remote openin GLYCOL TO AHU INSID	-	61-192,	
					seconds	
		M&T	E	Cal Due Dat	e	
	GLYCC		RECORD local opening to GLYCOL SUPPLY TO A ISOLATION.		•	
					seconds	
	M&TE [12] CLOSE 2-ISV-32-3552, CC TO 2-FCV-61-192-B, GLYC CONTAINMENT ISOLATIO		E	Cal Due Dat	e	
			2-FCV-61-192-B, GLYCOL			
	[13]		N petcock to vent control a NTROL AIR PRESSURE R		•	D
			IFY 2-FCV-61-192-B, GLY			
	[14]		SE petcock at 2-PREG-61 SSURE REG FOR 2-FCV		LAIR	
	[15]		EN 2-ISV-32-3552, CONTR CV-61-192-B.	OL AIR ISOLAT	ION VALVE TO	D
	[16]	the C	CE 2-HS-61-192, GLYCO DPEN position for several s el, THEN			
		REL	EASE to A-AUTO, AND			
			IFY 2-FCV-61-192-B, GLY			

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	Data I	Date	
6.3		V-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ATION Functional Testing (continued)	
	[17]	PLACE 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA in the OPEN position until 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is FULLY OPEN, by light indication, THEN	
		RELEASE to A-AUTO.	
	[18]	PLACE 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA in the CLOSE position, THEN	
		RELEASE to A-AUTO, AND	
		VERIFY 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION CLOSES.	
	[19]	REMOVE Test Switch TS-4 at Terminal Board TB 618 in Pan 2-R-51.	el
			1st
			CV
	[20]	LAND wire G1A4 onto Terminal Point 5 on Terminal Board TB 618 in Panel 2-R-51.	3
			1st
			CV
	[21]	PLACE 2-HS-61-192, GLYCOL TO AHU INSIDE CIV-ØA in the OPEN position, THEN	
		RELEASE to A-AUTO, AND	
		VERIFY 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION OPENS.	
	[22]	VERIFY no excessive vibration of the piping system and components associated with the performance of this subsection was observed.	
	[23]	VERIFY the successful completion of this Subsection 6.3 (ACC CRIT).	

Date _____

6.4 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION Functional Test

NOTES

- 1) This subsection will test 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION from its control station and verify operability of all interlocks, indicating lights, and annunciators.
- 2) During the performance of this subsection, visual observation of transient and steady state vibrations is required.
 - [1] **ENSURE** prerequisites listed in Section 4.0 have been completed.
 - [2] ENSURE 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION, is CLOSED by Green Light ON at 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA, at 2-M-9.
 - [3] **PLACE** 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION is FULLY OPEN, THEN

- [4] **VERIFY** the following for 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION:
 - A. 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA Red Light ON
 - B. 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA Green Light OFF
 - C. 2-XX-55-6F Window 62, FCV-61-194, Red Light ON.
 - D. 2-XX-55-6F Window 62, FCV-61-194, Green Light OFF.
 - E. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION OPEN (EL 806/AZ 295).

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Date _____

6.4 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION Functional Test (continued)

NOTE

Steps 6.4[5] and 6.4[6] will verify that 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[5] **PLACE** Test Switch TS-5 at Terminal Board TB 618 in Panel 2-R-51 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 62, FCV-61-194, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 62, FCV-61-194, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION is CLOSED.(Local) (ACC CRIT)
- [6] **PLACE** Test Switch TS-5 at Terminal Board TB 618 in Panel 2-R-51 to the ON position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 62, FCV-61-194, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 62, FCV-61-194, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION is CLOSED.(Local) (ACC CRIT)
- [7] **PLACE** 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-192-B, GLYCOL SUPPLY TO AHUS CONTAINMENT ISOLATION is FULLY OPEN, **THEN**

	Data	Date				
6.4	2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION Functional Test (continued)					
	[8]	N				
		A.	2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA Red Light ON			
		В.	2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA Gree Light OFF	∍n		
		C.	2-XX-55-6F Window 62, FCV-61-194, Red Light ON			
		D.	2-XX-55-6F Window 62, FCV-61-194, Green Light OFF			
		E.	2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION OPEN (Local)			
			NOTES			

- Steps 6.4[9] and 6.4[11] require valve stroke timing locally at the valve and remotely at 1) the Control Switch in both the Open and Closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - [9] PLACE 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA in the CLOSE position, AND

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[9.1] **RECORD** remote closing time at 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA. (ACC CRIT)

seconds

 $(\leq 30 \text{ seconds})$

M&TE _____ Cal Due Date _____

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 62 of 130
	Data	Pack	age: Page of	Date
6.4	2-FC Func	NMENT ISOLATION		
	[9	.2]	RECORD local closing time at 2-F GLYCOL RETURN CONTAINMEN (ACC CRIT)	
		_	seconds	(≤ 30 seconds)
		M&	TE Cal D	ue Date
	[10]		RIFY the following for 2-FCV-61-194- NTAINMENT ISOLATION:	B, GLYCOL RETURN
		Α.	2-HS-61-194, GLYCOL FRM AHU I Light OFF.	INSIDE CIV-ØA Red
		В.	2-HS-61-194, GLYCOL FRM AHU I Light ON.	INSIDE CIV-ØA Green
		C.	2-XX-55-6F Window 62, FCV-61-19	94, Red Light OFF.
		D.	2-XX-55-6F Window 62, FCV-61-19	94, Green Light ON.
		E.	2-FCV-61-194-B, GLYCOL RETUR ISOLATION CLOSED (Local).	
			NOTE	······································
	e the valve. e valve.	/e str	oke from 2-HS-61-194, GLYCOL FR	M AHU INSIDE CIV-ØA and locally

[11] PLACE 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA in the OPEN position AND

SIMULTANEOUSLY TIME the valve stroke, THEN

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 63 of 13	30
	Data	Packa	age: Page of		Date
6.4			94-B, GLYCOL RETURN CONTAI Test (continued)	NMENT ISOLATION	
	[1	1.1]	RECORD remote opening time at GLYCOL FRM AHU INSIDE CIV-	-	
				seconds	
		M&T	E Cal D	ue Date	<u> </u>
	[1	1.2]	RECORD local opening time at 2- GLYCOL RETURN CONTAINME		
				seconds	
		M&T	E Cal D	ue Date	
	[12] CLOSE 2-ISV-32-3 TO 2-FCV-61-194-		SE 2-ISV-32-3553, CONTROL AIR 2-FCV-61-194-B.	ISOLATION VALVE	
	[13]		N petcock to vent control air at 2-PF ITROL AIR PRESSURE REG FOR		D
			IFY 2-FCV-61-194-B, GLYCOL RE ATION CLOSES. (ACC CRIT)	FURN CONTAINMEN	т
	[14]		SE petcock at 2-PREG-61-194, CO SSURE REG FOR 2-FCV-61-194-E		
	[15]		N 2-ISV-32-3553, CONTROL AIR I V-61-194-B.	SOLATION VALVE T	o
	[16]	the C	CE 2-HS-61-194, GLYCOL FRM AB DPEN position for several seconds t		I
		REL	EASE to A-AUTO, AND		
			IFY 2-FCV-61-194-B, GLYCOL RE ⁻ ATION returns to CLOSED.	FURN CONTAINMEN	т

	WBN Unit 2	ICE CONDENSER SYST	EM 2-PTI-061-01 Rev. 0000 Page 64 of 130
	Data F	Package: Page of	Date
6.4		-61-194-B, GLYCOL RETURN CON onal Test (continued)	TAINMENT ISOLATION
	[17]	PLACE 2-HS-61-194, GLYCOL FRM the OPEN position until 2-FCV-61-19 CONTAINMENT ISOLATION is FUL indication, THEN	94-B, GLYCOL RETURN
		RELEASE to A-AUTO.	
	[18]	PLACE 2-HS-61-194, GLYCOL FRM the CLOSE position, THEN	∕I AHU INSIDE CIV-∅A in
		RELEASE to A-AUTO, AND	
		VERIFY 2-FCV-61-194-B, GLYCOL ISOLATION CLOSES.	RETURN CONTAINMENT
	[19]	REMOVE Test Switch TS-5 at Term 2-R-51.	inal Board TB 618 in Panel
		2-11-01.	1st
			CV

- [20] **LAND** wire G1B4 onto Terminal Point 7 on Terminal Board TB 618 in Panel 2-R-51.
- [21] PLACE 2-HS-61-194, GLYCOL FRM AHU INSIDE CIV-ØA in the OPEN position, THEN

1st

CV

RELEASE to A-AUTO, AND

VERIFY 2-FCV-61-194-B, GLYCOL RETURN CONTAINMENT ISOLATION OPENS.

- [22] **VERIFY** no excessive vibration of the piping system and components associated with the performance of this subsection was observed.
- [23] **VERIFY** the successful completion of this Subsection 6.4 (ACC CRIT).

Date ____

6.5 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL Functional Testing

NOTES This subsection will test 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY 1) HEADER ISOL from its control station and verify operability of all interlocks, indicating lights, and annunciators. During the performance of this subsection, visual observation of transient and steady 2) state vibrations is required. [1] **ENSURE** prerequisites listed in Section 4.0 have been completed. [2] **ENSURE** the following Glycol Floor Pump(s) are STOPPED 2-PMP-61-51, GLYCOL COOLED FLOOR PUMP 2A Α. Β. 2-PMP-61-61, GLYCOL COOLED FLOOR PUMP 2B ENSURE 2-FCV-61-96-A, GLYCOL COOLED FLOOR [3] SUPPLY HEADER ISOL, is CLOSED by Green Light ON at 2-HS-61-96, FLOOR CLG SUP OUTSIDE CIV-ØA, at 2-M-9. PLACE 2-HS-61-96, FLOOR CLG SUP OUTSIDE CIV-ØA, at [4] 2-M-9, in the OPEN position until 2-FCV-61-96-A. GLYCOL COOLED FLOOR SUPPLY HEADER ISOL is FULLY OPEN, THEN **RELEASE** to A-AUTO. VERIFY the following for 2-FCV-61-96-A, GLYCOL COOLED [5] FLOOR SUPPLY HEADER ISOL: Α. 2-HS-61-96, FLOOR CLG SUP OUTSIDE CIV-ØA Red Light ON. 2-HS-61-96, FLOOR CLG SUP OUTSIDE CIV-ØA Green Β. Light OFF. C. 2-XX-55-6E Window 50, FCV-61-96, Red Light ON. D. 2-XX-55-6E Window 50, FCV-61-96, Green Light OFF.

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Date _____

6.5 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL Functional Testing (continued)

E. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL OPEN (EL 768/A12W).

NOTE

Steps 6.5[6] and 6.5[7] will verify that 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[6] **PLACE** Test Switch TS-6 at Terminal Board TB 646 in Panel 2-R-48 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6E Window 50, FCV-61-96, Green Light ON (ACC CRIT)
- B. 2-XX-55-6E Window 50, FCV-61-96, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [7] **PLACE** Test Switch TS-6 at Terminal Board TB 646 in Panel 2-R-48 to the ON position, **AND**

VERIFY:

- A. 2-XX-55-6E Window 50, FCV-61-96, Green Light ON (ACC CRIT)
- B. 2-XX-55-6E Window 50, FCV-61-96, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [8] PLACE 2-HS-61-96, FLOOR CLG SUP OUTSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-96-A, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL is FULLY OPEN, THEN

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 67 of 130		
	Data	Pack	age: Page of	Date		
.5	2-FCV-61-96-A, GLYCOL COOLED FLOOR S ISOL Functional Testing (continued)			PLY HEADER		
	[9]		RIFY the following for 2-FCV-61-96-A, G DOR SUPPLY HEADER ISOL:	LYCOL COOLED		
		A.	2-HS-61-96, FLOOR CLG SUP OUTS Light ON	DE CIV-ØA Red		
		B.	2-HS-61-96, FLOOR CLG SUP OUTS Light OFF	DE CIV-ØA Green		
		C.	2-XX-55-6E Window 50, FCV-61-96, R	ed Light ON		
		D.	2-XX-55-6E Window 50, FCV-61-96, G	reen Light OFF		
		E.	2-FCV-61-96-A, GLYCOL COOLED FL HEADER ISOL OPEN (Local)	OOR SUPPLY		
		·	NOTES			
1)	•		and 6.5[12] require valve stroke timing I Switch in both the Open and Closed po	•		

2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.

[10] PLACE 2-HS-61-96, FLOOR CLG SUP OUTSIDE CIV-ØA in the CLOSE position, AND

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[10.1] **RECORD** remote closing time at, 2-HS-61-96, FLOOR CLG SUP OUTSIDE CIV-ØA. (ACC CRIT)

_____ seconds

 $(\leq 30 \text{ seconds})$

M&TE _____ Cal Due Date _____

	WBN Unit 2		ICE C	ONDENSER S	YSTEM	2-PTI-061-01 Rev. 0000 Page 68 of 130)
	Data	Pack	kage: Page _	of		C	Date
6.5	2-FCV-61-96-A, GLYC ISOL Functional Test				OOR SUPPLY	(HEADER	
	[1	0.2]		FLOOR SUPPL		·96-A, GLYCOL DL.	
				seconds	(≤ 30 s	econds)	
		M&	TE		Cal Due Dat	e	
	[11]			wing for 2-FCV- (HEADER ISOI		COL COOLED	
		Α.	2-HS-61-96 Light OFF.	, FLOOR CLG S	SUP OUTSIDE	CIV-ØA Red	
		В.	2-HS-61-96 Light ON.	, FLOOR CLG S	SUP OUTSIDE	CIV-ØA Green	
		C.	2-XX-55-6E	Window 50, FC	V-61-96, Red	Light OFF.	
		D.	2-XX-55-6E	Window 50, FC	V-61 - 96, Gree	n Light ON.	
		E.		6-A, GLYCOL C OL CLOSED (L		R SUPPLY	
NOTE							
	e the valv ne valve.	e str	oke from 2-H	S-61-96, FLOOF	R CLG SUP OU	JTSIDE CIV-ØA	and locally
	[12]		ACE 2-HS-61 OPEN positio	-96, FLOOR CL on, AND	G SUP OUTSI	DE CIV-ØA in	

SIMULTANEOUSLY TIME the valve stroke, THEN

WBN Unit 2				ICE CONDENSER SYSTEM 2- R P		-
	Data	Pack	age: Page of		Da	te
6.5	5 2-FCV-61-96-A, GLYCO ISOL Functional Testin				Y HEADER	
			RECORD remote op CLG SUP OUTSIDE	bening time at 2-HS-6 ∃ CIV-ØA.	61-96, FLOOR	
					seconds	
		M&1	ſE	Cal Due Dat	e	
	[1]	2.2]		ECORD local opening time at 2-FCV-61-96-A, CYCOL COOLED FLOOR SUPPLY HEADER ISOL.		
					seconds	
		M&1	ſE	Cal Due Dat	e	
	[13]		DSE 2-ISV-32-3411, C 2-FCV-61-96-A.	ONTROL AIR ISOLA	TION VALVE	
	[14]		EN petcock to vent cor NTROL AIR PRESSUI			
			RIFY 2-FCV-61-96-A, (ADER ISOL CLOSES.		LOOR SUPPLY	
	[15] CLOSE petcock at 2-PREG-61-96, CONTROL AIR PRESSURE REG FOR 2-FCV-61-96-A.		AIR			
	[16]		EN 2-ISV-32-3411, CC CV-61-96-A.	NTROL AIR ISOLAT	ION VALVE TO	
	[17]	the	ACE 2-HS-61-96, FLO OPEN position for sev el, THEN			
		REL	EASE to A-AUTO, A	١D		
			RIFY 2-FCV-61-96-A, (ADER ISOL returns to		LOOR SUPPLY	
	[18]	the	CE 2-HS-61-96, FLO OPEN position until 2- indication, THEN			
		REL	EASE to A-AUTO.			

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 70 of 130	
	Data	Pack	age: Page of	Da	ite
6.5			96-A, GLYCOL COOLED FLOOR SUPPL' ctional Testing (continued)	Y HEADER	
	[19]		CE 2-HS-61-96, FLOOR CLG SUP OUTS CLOSE position, THEN	DE CIV-∅A in	
		REL	EASE to A-AUTO, AND		
			RIFY 2-FCV-61-96-A, GLYCOL COOLED F ADER ISOL CLOSES.	LOOR SUPPLY	
	[20]	REN 2-R	MOVE Test Switch TS-6 at Terminal Board	TB 646 in Panel	
		2-13	-40.		1st
					CV
	[21]		ND wire G1H5 onto Terminal Point 9 on Ter in Panel 2-R-48.	minal Board TB	
		040			1st
					CV
	[22]		ACE 2-HS-61-96, FLOOR CLG SUP OUTS OPEN position, THEN	DE CIV-ØA in	
		REL	EASE to A-AUTO, AND		
			RIFY 2-FCV-61-96-A, GLYCOL COOLED F ADER ISOL OPENS.	LOOR SUPPLY	
	[23]	com	RIFY no excessive vibration of the piping sy ponents associated with the performance of section was observed.		
	[24]		RIFY the successful completion of this Subs C CRIT).	ection 6.5	

,

Date _____

6.6 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL Functional Test

NOTES

- 1) This subsection will test 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL from its control station and verify operability of all interlocks, indicating lights, and annunciators.
- 2) During the performance of this subsection, visual observation of transient and steady state vibrations is required.
 - [1] **ENSURE** prerequisites listed in Section 4.0 have been completed.
 - [2] **ENSURE** the following Glycol Floor Pump(s) are STOPPED
 - A. 2-PMP-61-51, GLYCOL COOLED FLOOR PUMP 2A
 - B. 2-PMP-61-61, GLYCOL COOLED FLOOR PUMP 2B
 - [3] ENSURE 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL, is CLOSED by Green Light ON at 2-HS-61-97, FLOOR CLG SUP OUTSIDE CIV-ØA, at 2-M-9.
 - [4] **PLACE** 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-97-B is FULLY OPEN, **THEN**

RELEASE to A-AUTO.

- [5] **VERIFY** the following for 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL:
 - A. 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA Red Light ON.
 - B. 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA Green Light OFF.
 - C. 2-XX-55-6F Window 50, FCV-61-97, Red Light ON.
 - D. 2-XX-55-6F Window 50, FCV-61-97, Green Light OFF.

Date ____

6.6 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL Functional Test (continued)

E. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL OPEN (EL 775/AZ 303).

NOTE

Steps 6.6[6] and 6.6[7] will verify that 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[6] **PLACE** Test Switch TS-7 at Terminal Board TB 646 in Panel 2-R-51 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 50, FCV-61-97, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 50, FCV-61-97, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [7] **PLACE** Test Switch TS-7 at Terminal Board TB 646 in Panel 2-R-51 to the ON position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 50, FCV-61-97, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 50, FCV-61-97, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [8] PLACE 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL is FULLY OPEN, THEN

RELEASE to A-AUTO

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 73 of 130		
	Data	Pack	age: Page of	Date		
6.6			97-B, GLYCOL COOLED FLOOR SUP ctional Test (continued)	PLY HEADER		
	[9]		/ERIFY the following for 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL:			
		Α.	2-HS-61-97, FLOOR CLG SUP INSIDE ON	E CIV-ØA Red Light		
		Б				

- 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA Green Β. Light OFF
- C. 2-XX-55-6F Window 50, FCV-61-97, Red Light ON
- D. 2-XX-55-6F Window 50, FCV-61-97, Green Light OFF
- E. 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY **HEADER ISOL OPEN (Local)**

NOTES

- Steps 6.6[10] and 6.6[12] require valve stroke timing locally at the valve and remotely 1) at the Control Switch in both the Open and Closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - PLACE 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA in the [10] CLOSE position, AND

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[10.1] **RECORD** remote closing time at, 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA. (ACC CRIT)

seconds

 $(\leq 30 \text{ seconds})$

M&TE _____ Cal Due Date _____

WBN Unit 2			ICE CONDENSER S	YSTEM	2-PTI-061-01 Rev. 0000 Page 74 of 130	
	Data	Pack	age: Page of		Da	nte
6.6			97-B, GLYCOL COOLED F ctional Test (continued)	LOOR SUPPLY	Y HEADER	
	[10.2]		RECORD local closing time at 2-FCV-61-97-B, GLYCOL COOLED FLOOR SUPPLY HEADER ISOL. (ACC CRIT)			
			seconds	(≤ 30 s	econds)	
		M&	TE	_ Cal Due Dat	e	
	[11]		RIFY the following for 2-FCV OOR SUPPLY HEADER ISO		COL COOLED	
		A.	2-HS-61-97, FLOOR CLG S OFF.	SUP INSIDE CI	V-ØA Red Light	
		В.	2-HS-61-97, FLOOR CLG S Light ON.	SUP INSIDE CI	V-∅A Green	
		C.	2-XX-55-6F Window 50, FC	V-61-97, Red I	Light OFF.	
		D.	2-XX-55-6F Window 50, FC	V-61-97, Gree	n Light ON.	
		E.	2-FCV-61-97-B, GLYCOL (HEADER ISOL CLOSED (L		R SUPPLY	
			NO	ſE		
	the valv alve.	ve stro	oke from 2-HS-61-97, FLOO	R CLG SUP IN	SIDE CIV-ØA and	l locally at

[12] **PLACE** 2-HS-61-97, FLOOR CLG SUP INSIDE CIV-ØA in the OPEN position, **AND**

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

1	WBN Unit 2		SER SYSTEM	2-PTI-061-01 Rev. 0000 Page 75 of 130
	Data F	Package: Page of _		Date
6.6		-61-97-B, GLYCOL COO Functional Test (continu		(HEADER
	[12	.1] RECORD remote o CLG SUP INSIDE 0		51-97, FLOOR
				seconds
		M&TE	Cal Due Dat	e
	[12		ning time at 2-FCV-6 [,] FLOOR SUPPLY HE	
				seconds
		M&TE	Cal Due Dat	e
	[13]	CLOSE 2-ISV-32-3550, C TO 2-FCV-61-97-B.	CONTROL AIR ISOLA	TION VALVE
	[14]	OPEN petcock to vent co CONTROL AIR PRESSU		-
		VERIFY 2-FCV-61-97-B, HEADER ISOL CLOSES.		
	[15]	CLOSE petcock at 2-PRE PRESSURE REG FOR 2-		AIR
	[16]	OPEN 2-ISV-32-3550, CC 2-FCV-61-97-B.	ONTROL AIR ISOLAT	ION VALVE TO
	[17]	PLACE 2-HS-61-97, FLO OPEN position for severa THEN		
		RELEASE to A-AUTO, A	ND	
		VERIFY 2-FCV-61-97-B, HEADER ISOL returns to		LOOR SUPPLY

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 76 of 130	
	Data	Data Package: Page of E			
6.6			•97-B, GLYCOL COOLED FLOOR SUPPL' ctional Test (continued)	Y HEADER	
	[18]	OP FL(ACE 2-HS-61-97, FLOOR CLG SUP INSIDE EN position until 2-FCV-61-97-B, GLYCOL DOR SUPPLY HEADER ISOL is FULLY OP cation, THEN	COOLED	
		RE	LEASE to A-AUTO.		
	[19]		ACE 2-HS-61-97, FLOOR CLG SUP INSIDE DSE position, THEN	E CIV-∅A in the	
		RE	LEASE to A-AUTO, AND		
			RIFY 2-FCV-61-97-B, GLYCOL COOLED F ADER ISOL CLOSES.	LOOR SUPPLY	
	[20]		MOVE Test Switch TS-7 at Terminal Board	TB 646 in Panel	
					1st
					CV
	[21]		ND wire G1J5 onto Terminal Point 9 on Terr 6 in Panel 2-R-51.	minal Board TB	
					1st
					CV
	[22]		ACE 2-HS-61-97, FLOOR CLG SUP INSIDE EN position, THEN	E CIV-ØA in the	
		RE	LEASE to A-AUTO, AND		
			RIFY 2-FCV-61-97-B, GLYCOL COOLED F ADER ISOL OPENS.	LOOR SUPPLY	
	[23]	con	RIFY no excessive vibration of the piping sy nponents associated with the performance o section was observed.		
	[24]		RIFY the successful completion of this Subs C CRIT).	ection 6.6	

Date _____

6.7 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL Functional Test

NOTES

- 1) This subsection will test 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL from its control station and verify operability of all interlocks, indicating lights, and annunciators.
- 2) During the performance of this subsection, visual observation of transient and steady state vibrations is required.
 - [1] **ENSURE** prerequisites listed in Section 4.0 have been completed.
 - [2] **ENSURE** the following Glycol Floor Pump(s) are STOPPED
 - A. 2-PMP-61-51, GLYCOL COOLED FLOOR PUMP 2A
 - B. 2-PMP-61-61, GLYCOL COOLED FLOOR PUMP 2B
 - [3] ENSURE 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL, is CLOSED by Green Light ON at 2-HS-61-110, FLOOR CLG SUP OUTSIDE CIV-ØA, at 2-M-9.
 - [4] PLACE 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL is FULLY OPEN, THEN

RELEASE to A-AUTO.

- [5] **VERIFY** the following for 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL:
 - A. 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA Red Light ON.
 - B. 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA Green Light OFF.
 - C. 2-XX-55-6E Window 51, FCV-61-110, Red Light ON.
 - D. 2-XX-55-6E Window 51, FCV-61-110, Green Light OFF.

Date _____

6.7 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL Functional Test (continued)

E. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL OPEN (EL 768/A12W).

NOTE

Steps 6.7[6] and 6.7[7] will verify that 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[6] **PLACE** Test Switch TS-8 at Terminal Board TB 646 in Panel 2-R-48 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6E Window 51, FCV-61-110, Green Light ON (ACC CRIT)
- B. 2-XX-55-6E Window 51, FCV-61-110, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [7] **PLACE** Test Switch TS-6 at Terminal Board TB 646 in Panel 2-R-48 to the ON position, **AND**

VERIFY:

- A. 2-XX-55-6E Window 51, FCV-61-110, Green Light ON (ACC CRIT)
- B. 2-XX-55-6E Window 51, FCV-61-110, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [8] PLACE 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER ISOL is FULLY OPEN, THEN

RELEASE to A-AUTO

6.7 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN HEADER **ISOL** Functional Test (continued)

- VERIFY the following for 2-FCV-61-110-A, GLYCOL COOLED [9] FLOOR RETURN HEADER ISOL:
 - Α. 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA Red Light ON
 - Β. 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA Green Light OFF
 - C. 2-XX-55-6E Window 51, FCV-61-110, Red Light ON
 - D. 2-XX-55-6E Window 51, FCV-61-110, Green Light OFF
 - E. 2-FCV-61-110-A, GLYCOL COOLED FLOOR RETURN **HEADER ISOL OPEN (Local)**

NOTES

- Steps 6.7[10] and 6.7[12] require valve stroke timing locally at the valve and remotely 1) at the Control Switch in both the Open and Closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - PLACE 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA in [10] the CLOSE position, AND

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[10.1] **RECORD** remote closing time at, 2-HS-61-110, FLOOR CLG RET OUTSIDE CIV-ØA. (ACC CRIT)

seconds

 $(\leq 30 \text{ seconds})$

M&TE _____ Cal Due Date _____

WBN Unit 2			ICE CONDENSER SY	(STEM	2-PTI-061-01 Rev. 0000 Page 80 of 130					
	Data Package: Page of Date									
6.7			-110-A, GLYCOL COOLED F ctional Test (continued)		RN HEADER					
	[1	0.2]	RECORD local closing time GLYCOL COOLED FLOOI (ACC CRIT)							
		_	seconds	(≤ 30 s	econds)					
		M&	TE	Cal Due Dat	e					
	[11]		RIFY the following for 2-FCV- DOR RETURN HEADER ISO		COL COOLED					
		A.	2-HS-61-110, FLOOR CLG Light OFF.	RET OUTSIDE	E CIV-ØA Red					
		В.	2-HS-61-110, FLOOR CLG Green Light ON.	RET OUTSIDE	E CIV-ØA					
		C.	2-XX-55-6E Window 51, FC	V-61-110, Rec	l Light OFF.					
		D.	2-XX-55-6E Window 51, FC	V-61-110, Gre	en Light ON.					
		E.	2-FCV-61-110-A, GLYCOL HEADER ISOL CLOSED (L		OR RETURN					
			NOT	E						
	the valve.	ve str	oke from 2-HS-61-110, FLOC	OR CLG RET C	OUTSIDE CIV-ØA a	nd locally				
	[12]		ACE 2-HS-61-110, FLOOR C OPEN position, AND	LG RET OUTS	SIDE CIV-ØA in					
		SIN	IULTANEOUSLY TIME the v	alve stroke, T H	IEN					
		RE	LEASE to A-AUTO.							
	[12.1]		RECORD remote opening CLG RET OUTSIDE CIV-&		61-110, FLOOR					
					seconds					
		M&	TE	Cal Due Dat	e					

	WBN Unit 2		ICE COND	ENSER SYSTEM	Rev. (061-01)000 81 of 130
	Data	Pack	kage: Page	of		Date
6.7			-110-A, GLYCOL (ctional Test (cont	COOLED FLOOR F inued)	RETURN HE	ADER
	[1	2.2]		opening time at 2-F -ED FLOOR RETU		
					Se	econds
		M&	TE	Cal Du	ie Date	
	[13]		OSE 2-ISV-32-341 2-FCV-61-110-A.	2, CONTROL AIR	SOLATION	/ALVE
	[14]			t control air at 2-PR SURE REG FOR 2)-A, AND
				0-A, GLYCOL COC SOL CLOSES. (AC		· · ·
	[15]		•	PREG-61-110, COI R 2-FCV-61-110-A		
	[16]		EN 2-ISV-32-3412 CV-61-110-A.	12, CONTROL AIR ISOLATION VALVE TO		ALVE TO
	[17]	the		1-110, FLOOR CLG RET OUTSIDE CIV-ØA in tion for several seconds to establish valve		
		RE	LEASE to A-AUTC), AND		
				0-A, GLYCOL COC OL returns to CLO		
	[18] PLACE 2-HS-61-110, the OPEN position unt FLOOR RETURN HEA indication, THEN		til 2-FCV-61-110-A	GLYCOL CO	DOLED	
		RE	LEASE to A-AUTC) .		

	WBN Unit 2	ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 82 of 130
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5.7		/-61-110-A, GLYCOL COOLED FLOOR RE Functional Test (continued)	TURN HEADER
	[19]	PLACE 2-HS-61-110, FLOOR CLG RET O the CLOSE position, THEN	UTSIDE CIV-ØA in
		RELEASE to A-AUTO, AND	
		VERIFY 2-FCV-61-110-A, GLYCOL COOL RETURN HEADER ISOL CLOSES.	ED FLOOR
	[20]	REMOVE Test Switch TS-8 at Terminal Bo 2-R-48.	ard TB 646 in Panel
		∠- N-4 0.	1st
			CV
	[21]	LAND wire G1K5 onto Terminal Point 7 on 646 in Panel 2-R-48.	Terminal Board TB
			1st
			CV
	[22]	PLACE 2-HS-61-110, FLOOR CLG RET O the OPEN position, THEN	UTSIDE CIV-ØA in
		RELEASE to A-AUTO, AND	
		VERIFY 2-FCV-61-110-A, GLYCOL COOL RETURN HEADER ISOL OPENS.	ED FLOOR
	[23]	VERIFY no excessive vibration of the piping components associated with the performan subsection was observed.	
	[24]	VERIFY the successful completion of this S (ACC CRIT).	ubsection 6.7

Date _____

6.8 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL Functional Test

	NOTES						
1)	This subsection will test 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL from its control station and verify operability of all interlocks, indicating lights, and annunciators.						
2)			erformance of this subsection, visual observation of transient and ns is required.	l steady			
	[1]		SURE prerequisites listed in Section 4.0 have been npleted.				
	[2]	EN	SURE the following Glycol Floor Pump(s) are STOPPED				
		Α.	2-PMP-61-51, GLYCOL COOLED FLOOR PUMP 2A				
		В.	2-PMP-61-61, GLYCOL COOLED FLOOR PUMP 2B				
	[3]	RE	SURE 2-FCV-61-122-B, GLYCOL COOLED FLOOR TURN HEADER ISOL, is CLOSED by Green Light ON at 2- -61-122, FLOOR CLG RET OUTSIDE CIV-ØA, at 2-M-9.				
	[4]	PLACE 2-HS-61-122, FLOOR CLG RET INSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL is FULLY OPEN, THEN					
		RE	LEASE to A-AUTO.				
	[5]	VERIFY the following for 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL:					
		Α.	2-HS-61-122, FLOOR CLG RET INSIDE CIV-ØA Red Light ON.				
		В.	2-HS-61-122, FLOOR CLG RET INSIDE CIV-ØA Green Light OFF.				
		C.	2-XX-55-6F Window 51, FCV-61-122, Red Light ON.				
		D.	2-XX-55-6F Window 51, FCV-61-122, Green Light OFF.				

Date _____

6.8 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL Functional Test (continued)

E. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL OPEN (EL 772/AZ 303).

NOTE

Steps 6.8[6] and 6.8[7] will verify that 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

[6] **PLACE** Test Switch TS-9 at Terminal Board TB 646 in Panel 2-R-51 to the OFF position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 51, FCV-61-122, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 51, FCV-61-122, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [7] **PLACE** Test Switch TS-9 at Terminal Board TB 646 in Panel 2-R-51 to the ON position, **AND**

VERIFY:

- A. 2-XX-55-6F Window 51, FCV-61-122, Green Light ON (ACC CRIT)
- B. 2-XX-55-6F Window 51, FCV-61-122, Red Light OFF (ACC CRIT)
- C. 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL is CLOSED.(Local) (ACC CRIT)
- [8] PLACE 2-HS-61-122, FLOOR CLG RET INSIDE CIV-ØA, at 2-M-9, in the OPEN position until 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL is FULLY OPEN, THEN

RELEASE to A-AUTO

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	Data	Pack	age: Page of	Date	
6.8	2-FC ISOL	IRN HEADER			
	[9]		RIFY the following for 2-FCV-61-122-B, GI DOR RETURN HEADER ISOL:	YCOL COOLED	
		A.	2-HS-61-122, FLOOR CLG RET INSIDE Light ON	CIV-ØA Red	
		В.	2-HS-61-122, FLOOR CLG RET INSIDE Light OFF	CIV-ØA Green	
		C.	2-XX-55-6F Window 51, FCV-61-122, Re	d Light ON	
		D.	2-XX-55-6F Window 51, FCV-61-122, Gr	een Light OFF	
		E.	2-FCV-61-122-B, GLYCOL COOLED FL HEADER ISOL OPEN (Local)	OOR RETURN	

NOTES

- Steps 6.8[10] and 6.8[12] require valve stroke timing locally at the valve and remotely 1) at the Control Switch in both the Open and Closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - [10] PLACE 2-HS-61-122, FLOOR CLG RET INSIDE CIV-ØA in the CLOSE position, AND

SIMULTANEOUSLY TIME the valve stroke, THEN

RELEASE to A-AUTO.

[10.1] **RECORD** remote closing time at, 2-HS-61-122, FLOOR CLG RET INSIDE CIV-ØA. (ACC CRIT)

seconds

 $(\leq 30 \text{ seconds})$

M&TE _____ Cal Due Date _____

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6.8			-122-B, GLYCOL COOLED F ctional Test (continued)	LOOR RETU	RN HEADER			
	[1	0.2]	RECORD local closing time at 2-FCV-61-122-B, GLYCOL COOLED FLOOR RETURN HEADER ISOL. (ACC CRIT)					
		_	seconds	(≤ 30 s	econds)			
		M&	TE	Cal Due Dat	e			
	[11]		RIFY the following for 2-FCV- DOR RETURN HEADER ISO		COL COOLED			
		A.	2-HS-61-122, FLOOR CLG Light OFF.	RET INSIDE (CIV-ØA Red			
		В.	2-HS-61-122, FLOOR CLG Light ON.	RET INSIDE (CIV-ØA Green			
		C.	2-XX-55-6F Window 51, FC	V-61-122, Rec	I Light OFF.			
		D.	2-XX-55-6F Window 51, FC	V-61-122, Gre	en Light ON.			
		E.	2-FCV-61-122-B, GLYCOL HEADER ISOL CLOSED (L		OR RETURN			
·			NOT	E				
Time the v		/e str	oke from 2-HS-61-122, FLOC	OR CLG RET II	NSIDE CIV-ØA and	l locally at		
	[12]		ACE 2-HS-61-122, FLOOR C OPEN position, AND	LG RET INSIE	0E CIV-∅A in			
		SIN	IULTANEOUSLY TIME the v	alve stroke, T ł	IEN			
		RE	LEASE to A-AUTO.					
			RECORD remote opening CLG RET INSIDE CIV-ØA		61-122, FLOOR			
					seconds			
		M&	TE	Cal Due Dat	e			

	WBN Unit 2		ONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 87 of 130
	Data	Package: Page _	of	Date
6.8		/-61-122-B, GLYC Functional Test (OL COOLED FLOOR RETUR continued)	RN HEADER
	[12		ocal opening time at 2-FCV-6 [,] OOLED FLOOR RETURN HE	
			i	seconds
		M&TE	Cal Due Dat	e
	[13]	CLOSE 2-ISV-32 TO 2-FCV-61-122	-3551, CONTROL AIR ISOLA 2-B.	TION VALVE
	[14]		vent control air at 2-PREG-6 RESSURE REG FOR 2-FCV	•
			1-122-B, GLYCOL COOLED I ER ISOL CLOSES. (ACC CRI	
	[15]		at 2-PREG-61-122, CONTROI 6 FOR 2-FCV-61-122-B.	_ AIR
	[16]	OPEN 2-ISV-32-3 2-FCV-61-122-B.	3551, CONTROL AIR ISOLAT	ION VALVE TO
	[17]		122, FLOOR CLG RET INSID n for several seconds to estab	
		RELEASE to A-A	UTO, AND	
			1-122-B, GLYCOL COOLED I R ISOL returns to CLOSED.	=LOOR
	[18]	the OPEN positio	122, FLOOR CLG RET INSID n until 2-FCV-61-122-B, GLY0 I HEADER ISOL is FULLY OF	COL COOLED
		RELEASE to A-A	UTO.	

	WBN Unit 2	ICE CONDENSER SYST	EM 2-PTI-061-01 Rev. 0000 Page 88 of 130
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6.8		/-61-122-B, GLYCOL COOLED FLO Functional Test (continued)	OR RETURN HEADER
	[19]	PLACE 2-HS-61-122, FLOOR CLG the CLOSE position, THEN	RET INSIDE CIV-ØA in
		RELEASE to A-AUTO, AND	
		VERIFY 2-FCV-61-122-B, GLYCOL RETURN HEADER ISOL CLOSES.	COOLED FLOOR
	[20]	REMOVE Test Switch TS-9 at Term 2-R-51.	inal Board TB 646 in Panel
		2-11-51.	1st
			CV
	[21]	LAND wire G1L5 onto Terminal Poil 646 in Panel 2-R-51.	nt 7 on Terminal Board TB
			1st
			CV
	[22]	PLACE 2-HS-61-122, FLOOR CLG the OPEN position, THEN	RET INSIDE CIV-ØA in
		RELEASE to A-AUTO, AND	
		VERIFY 2-FCV-61-122-B, GLYCOL RETURN HEADER ISOL OPENS.	COOLED FLOOR
	[23]	VERIFY no excessive vibration of the components associated with the persubsection was observed.	
	[24]	VERIFY the successful completion of (ACC CRIT).	of this Subsection 6.8

	Data	Pack	age: Page of	Date
6.9	Lowe	er Inle	et Door Logic and Functional Testing	
	[1]		RIFY prerequisites listed in Section 4.0 for Subsection 6.9 e been completed.	
	[2]		RIFY the following light indications at 2-XI-61-187, ICE NDENSER DOOR STATUS, on 2-M-10:	
		A.	2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light ON.	
		В.	2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light ON.	
		C.	2-XI-61-187 Window 7, INLET DOORS ZONE C CLOSED, Green Light ON.	
		D.	2-XI-61-187 Window 13, INLET DOORS ZONE D CLOSED, Green Light ON.	
		E.	2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light ON.	
		F.	2-XI-61-187 Window 15, INLET DOORS ZONE F CLOSED, Green Light ON.	
		G.	2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light OFF.	
		H.	2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light OFF.	
		I.	2-XI-61-187 Window 3, INLET DOORS ZONE C OPEN, Red Light OFF.	
		J.	2-XI-61-187 Window 9, INLET DOORS ZONE D OPEN, Red Light OFF.	
		K.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN Red Light OFF.	3
		L.	2-XI-61-187 Window 11, INLET DOORS ZONE F OPEN Red Light OFF.	

Date _____

6.9 Lower Inlet Door Logic and Functional Testing (continued)

[3] **VERIFY** 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, is CLEAR.

NOTE

Steps 6.9[4] through 6.9[99] may be performed in any order to facilitate testing.

[4] **MANUALLY OPEN** Lower Inlet Door Panel 1 associated with 2-ZS-61-186A1/2-ZS-61-187A1, ICE COND CNTMT ZONE A LOWER PANEL 1 OPEN, at RB EL 746 AZ 316,**AND**

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.
- B. Event Display Legend indicates 144-A ICE COND INLET DOOR OPEN is in ALARM (Red).
- C. 2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light ON.
- D. 2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light OFF.
- [5] **MANUALLY CLOSE** Lower Inlet Door Panel 1 associated with 2-ZS-61-186A1/2-ZS-61-187A1, **AND**

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.
- B. Event Display Legend indicates 144-A ICE COND INLET DOOR OPEN is NORMAL (Blue).
- C. 2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light OFF.
- D. 2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light ON.

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6.9 Lower Inlet Door Logic and Functional Testing (continued)

NOTE

Further demonstrations of the same annunciator to Alarm Printer signal will not be performed for the remaining "Open Door" inputs in this Subsection.

[6] **MANUALLY OPEN** Lower Inlet Door Panel 2 associated with 2-ZS-61-186A2/2-ZS-61-187A2, ICE COND CNTMT ZONE A LOWER PANEL 2 OPEN, at RB EL 746, **AND**

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.
- B. 2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light ON.
- C. 2-XI-61-187 Window 5, INLET, DOORS ZONE A CLOSED, Green Light OFF.
- [7] **MANUALLY CLOSE** Lower Inlet Door Panel 2 associated with 2-ZS-61-186A2/2-ZS-61-187A2, **AND**

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.
- B. 2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light OFF.
- C. 2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light ON.

	Data I	Pack	age: Page of	Date
6.9	Lowe	r Inle	et Door Logic and Functional Testing (continued)	
	[8]	2- Z	NUALLY OPEN Lower Inlet Door Panel 3 associated with S-61-186A3/2-ZS-61-187A3, ICE COND CNTMT ZONE A WER PANEL 3 OPEN, at RB EL 746, AND	
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light ON.	
		C.	2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light OFF.	
	[9]		NUALLY CLOSE Lower Inlet Door Panel 3 associated wit S-61-186A3/2-ZS-61-187A3, AND	h
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.	
		В.	2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light OFF.	
		C.	2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light ON.	
	[10]	2-Z\$	NUALLY OPEN Lower Inlet Door Panel 4 associated with S-61-186A4/2-ZS-61-187A4, ICE COND CNTMT ZONE A WER PANEL 4 OPEN, at RB EL 746, AND	
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light ON.	
		C.	2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light OFF.	

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	Data	Pacl	kage: Page of	Date	
6.9	Lowe	er Inl	et Door Logic and Functional Testing (continued)	
	[11]		NUALLY CLOSE Lower Inlet Door Panel S-61-186A4/2-ZS-61-187A4, AND	4 associated with	
		VE	RIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DO CLEARS.	DOR OPEN,	
		В.	2-XI-61-187 Window 1, INLET DOORS 2 Red Light OFF.	ZONE A OPEN,	
		С.	2-XI-61-187 Window 5, INLET DOORS 2 CLOSED, Green Light ON.	ZONE A	
	[12]	61-	NUALLY OPEN Lower Inlet Door 5 assoc 186A5/2-ZS-61-187A5 ICE COND CNTM WER PANEL 5 OPEN, at RB EL 746, AN	T ZONE A	
		VE	RIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DO ALARMS.	DOR OPEN,	
		В.	2-XI-61-187 Window 1, INLET DOORS 2 Red Light ON.	ZONE A OPEN,	
		C.	2-XI-61-187 Window 5, INLET DOORS 2 CLOSED, Green Light OFF.	ZONE A	
	[13]		NUALLY CLOSE Lower Inlet Door Panel S-61-186A5/2-ZS-61-187A5, AND	5 associated with	
	,		VERIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DO CLEARS.	DOR OPEN,	
		В.	2-XI-61-187 Window 1, INLET DOORS 2 Red Light OFF.	ZONE A OPEN,	
		C.	2-XI-61-187 Window 5, INLET DOORS 2 CLOSED, Green Light ON.	ZONE A	

	Data I	Pack	age: Page of	Date
6.9	Lowe	r Inle	et Door Logic and Functional Testing (continued)	
	[14]	2-Z\$	NUALLY OPEN Lower Inlet Door Panel 6 associated with S-61-186A6/2-ZS-61-187A6, ICE COND CNTMT ZONE A VER PANEL 6 OPEN, at RB EL 746, AND	
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red a Light ON.	
		C.	2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light OFF.	
	[15]		NUALLY CLOSE Lower Inlet Door Panel 6 associated wit S-61-186A6/2-ZS-61-187A6, AND	h
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.	
		В.	2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light OFF.	
		C.	2-XI-61-187 Window 5. INLET DOORS ZONE A CLOSED, Green Light ON.	
	[16]	2-Z\$	NUALLY OPEN Lower Inlet Door Panel 7 associated with S-61-186A7/2-ZS-61-187A7, ICE COND CNTMT ZONE A WER PANEL 7 OPEN, at RB EL 746, AND	
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 1, INLET DOORS ZONE A OPEN, Red Light ON.	
		C.	2-XI-61-187 Window 5, INLET DOORS ZONE A CLOSED, Green Light OFF.	

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	Data	Pack	kage: Page of	Date	
6.9	Lowe	er Inle	et Door Logic and Functional Testing (c	ontinued)	
	[17]		NUALLY CLOSE Lower Inlet Door Panel 7 S-61-186A7/2-ZS-61-187A7, AND	associated with	
		VERIFY the following:			
		A.	2-XA-55-6E-144A, ICE COND INLET DO CLEARS.	OR OPEN,	
		В.	2-XI-61-187 Window 1, INLET DOORS Z Red Light OFF.	ONE A OPEN,	
		C.	2-XI-61-187 Window 5, INLET DOORS Z CLOSED, Green Light ON.	ONE A	
	[18]	2-Z	ANUALLY OPEN Lower Inlet Door Panel 8 associated with ZS-61-186A8/2-ZS-61-187A8, ICE COND CNTMT ZONE A OWER PANEL 8 OPEN, at RB EL 746, AND		
		VE	RIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DO ALARMS.	OR OPEN,	
		В.	2-XI-61-187 Window 1, INLET DOORS Z Red Light ON.		
		C.	2-XI-62-187 Window 5, INLET DOORS Z CLOSED, Green Light OFF.	ONE A	
	[19]		NUALLY CLOSE Lower Inlet Door Panel 8 S-61-186A8/2-ZS-61-187A8, AND	3 associated with	
		VE	RIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DO CLEARS.	OR OPEN,	
		B.	2-XI-61-187 Window 1, INLET DOORS Z Red Light OFF.	ONE A OPEN,	
		C.	2-XI-61-287 Window 5, INLET DOORS Z CLOSED, Green Light ON.	ONE A	

	Data	Package: Page of E	ate
6.9	Lowe	er Inlet Door Logic and Functional Testing (continued)	
	[20]	MANUALLY OPEN Lower Inlet Door Panel 1 associated with 2-ZS-61-186B1/2-ZS-61-187B1, ICE COND CNTMT ZONE B LOWER PANEL 1 OPEN, at RB EL 746, AND	
		VERIFY the following:	
		A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		B. 2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light ON.	
		C. 2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light OFF.	
	[21]	MANUALLY CLOSE Lower Inlet Door Panel 1 associated with 2-ZS-61-186B1/2-ZS-61-187B1, AND	
		VERIFY the following:	
		A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.	
		B. 2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light OFF.	
		C. 2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light ON.	<u></u>
	[22]	MANUALLY OPEN Lower Inlet Door Panel 2 associated with 2-ZS-61-186B2/2-ZS-61-187B2, ICE COND CNTMT ZONE B LOWER PANEL 2 OPEN, at RB EL 746, AND	
		VERIFY the following:	
		A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		B. 2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light ON.	
		C. 2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light OFF.	

6.9 Lower Inlet Door Logic and Functional Testing (continued)

[23] **MANUALLY CLOSE** Lower Inlet Door Panel 2 associated with 2-ZS-61-186B2/2-ZS-61-187B2, **AND**

VERIFY the following:

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- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.
- B. 2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light OFF.
- C. 2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light ON.
- [24] **MANUALLY OPEN** Lower Inlet Door Panel 3 associated with 2-ZS-61-186B3/2-ZS-61-187B3, ICE COND CNTMT ZONE B LOWER PANEL 3 OPEN, at RB EL 746, **AND**

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.
- B. 2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light ON.
- C. 2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light OFF.
- [25] **MANUALLY CLOSE** Lower Inlet Door Panel 3 associated with 2-ZS-61-186B3/2-ZS-61-187B3 **AND**

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.
- B. 2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light OFF.
- C. 2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light ON.

	Data I	Pack	age: Page of	Date
6.9	Lowe	r Inle	et Door Logic and Functional Testing (continued)	
	[26]	2-Z	NUALLY OPEN Lower Inlet Door Panel 4 associated with S-61-186B4/2-ZS-61-187B4 ICE, COND CNTMT ZONE B WER PANEL 4 OPEN, at RB EL 746, AND	
		VEF	RIFY the following:	
		Α.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
	·	В.	2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light ON.	
		C.	2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light OFF.	
	[27]		NUALLY CLOSE Lower Inlet Door Panel 4 associated wit S-61-186B4/2-ZS-61-187B4, AND	h
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.	<u> ,</u>
		В.	2-XI-61-187 Window 2, INLET DOORS ZONE B OPEN, Red Light OFF.	
		C.	2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light ON.	
	[28]	2-Z	NUALLY OPEN Lower Inlet Door Panel 5 associated with S-61-186B5/2-ZS-61-187B5, ICE COND CNTMT ZONE B WER PANEL 5 OPEN, at RB EL 746, AND	
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 2, 1NLET.DOORS ZONE B OPEN, Red Light ON.	
		C.	2-XI-61-187 Window 6, INLET DOORS ZONE B CLOSED, Green Light OFF.	

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6.9	Lowe	r Inl	et Door Logic and Functional Testing (co	ntinued)
	[29]		NUALLY CLOSE Lower Inlet Door Panel 5 S-61-186B5/2-ZS-61-187B5, AND	associated with
		VEI	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,
		В.	2-XI-61-187 Window 2, INLET DOORS ZC Red Light OFF.	
		C.	2-XI-61-187 Window 6, INLET DOORS ZO CLOSED, Green Light ON.	DNE B
	[30]	2-Z	NUALLY OPEN Lower Inlet Door Panel 6 a S-61-186B6/2-ZS-61-187B6, ICE COND CN WER PANEL 6 OPEN, at RB EL 746, AND	
		VEI	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,
		В.	2-XI-61-187 Window 2, INLET DOORS ZC Red Light ON.	DNE B OPEN,
		C.	2-XI-61-187 Window 6, INLET DOORS ZC CLOSED, Green Light OFF.	NE B
	[31]		NUALLY CLOSE Lower Inlet Door Panel 6 S-61-186B6/2-ZS-61-187B6, AND	associated with
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,
		В.	2-XI-61-187 Window 2, INLET DOORS ZC Red Light OFF.	NE B OPEN,
		C.	2-XI-61-187 Window 6, INLET DOORS ZO CLOSED, Green Light ON.	NE B

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6.9	Lowe	r Inl	et Door Logic and Functional Testing (co	ontinued)
	[32]	2-Z	NUALLY OPEN Lower Inlet Door Panel 7 a S-61-186B7/2-ZS-61-187B7. ICE COND CI WER PANEL 7 OPEN, at RB EL 746, AND	
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOO ALARMS.	DR OPEN,
		В.	2-XI-61-187 Window 2, INLET DOORS ZO Red Light ON.	ONE B OPEN,
		C.	2-XI-61-187 Window 6, INLET DOORS ZO CLOSED, Green Light OFF.	DNE B
	[33]		NUALLY CLOSE Lower Inlet Door Panel 7 S-61-186B7/2-ZS-61-187B7, AND	associated with
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOO CLEARS.	DR OPEN,
		В.	2-XI-61-187 Window 2, INLET DOORS ZO Red Light OFF.	DNE B OPEN,
		C.	2-XI-61-187 Window 6, INLET DOORS ZO CLOSED, Green Light ON.	DNE B
	[34]	2 - Z	NUALLY OPEN Lower Inlet Door Panel 8 a S-61-186B8/2-ZS-61-187B8, ICE COND CI WER PANEL 8 OPEN, at RB EL 746, AND	
		VE	RIFY the following:	· · · · · · · · · · · · · · · · · · ·
		A.	2-XA-55-6E-144A, ICE COND INLET DOO ALARMS.	DR OPEN,
		В.	2-XI-61-187 Window 2, INLET DOORS ZO Red Light ON.	DNE B OPEN,
		C.	2-XI-61-187 Window 6, INLET DOORS ZO CLOSED, Green Light OFF.	ONE B

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6.9	Lowe	r Inl	et Door Logic and Functional Testing (co	ntinued)
	[35]		NUALLY CLOSE Lower Inlet Door Panel 8 S-61-186B8/2-ZS-61-187B8, AND	associated with
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,
		В.	2-XI-61-187 Window 2, INLET DOORS ZO Red Light OFF.	DNE B OPEN,
		C.	2-XI-61-187 Window 6, INLET DOORS ZO CLOSED, Green Light ON.	DNE B
	[36]	2-Z	NUALLY OPEN Lower Inlet Door Panel 1 a S-61-186C1/2-ZS-61-187C1, ICE COND CI WER PANEL 1 OPEN, at RB EL 746, AND	
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,
		В.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light ON.	DNE C OPEN,
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light OFF.	DNE C
	[37]		NUALLY CLOSE Lower Inlet Door Panel 1 S-61-186C1/2-ZS-61-187C1, AND	associated with
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,
		В.	2-XI-61-187 Window 3, INLET.DOORS ZO Red Light OFF.	DNE C OPEN,
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light ON.	DNE C

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6.9	Lowe	er Ini	et Door Logic and Functional Testing (co	ontinued)	
	[38]	2-Z	NUALLY OPEN Lower Inlet Door Panel 2 a S-61-186C2/2-ZS-61-187C2, ICE COND C WER PANEL 2 OPEN, at RB EL 746, AND		
		VEI	RIFY the following:		
		Ą.	2-XA-55-6E-144A, ICE COND INLET DOG ALARMS.	OR OPEN,	
		В.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light ON.		
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light OFF.	DNE C	
	[39]		MANUALLY CLOSE Lower Inlet Door Panel 2 associated with 2-ZS-61-186C2/2-ZS-61-187C2, AND		
		VEI	RIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DOO CLEARS.	OR OPEN,	
		B.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light OFF.	DNE C OPEN,	
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light ON.	DNE C	
	[40]	2-Z	NUALLY OPEN Lower Inlet Door Panel 3 a S-61-186C3/2-ZS-61-187C3, ICE COND C WER PANEL 3 OPEN, at RB EL 746, AND		
		VEI	RIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DOO ALARMS.		
		B.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light ON.		
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light OFF.	DNE C	

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6.9	Lowe	ver Inlet Door Logic and Functional Testing (continued)				
	[41]	MANUALLY CLOSE Lower Inlet Door Panel 3 associated with 2-ZS-61-186C3/2-ZS-61-187C3, AND				
		VE	VERIFY the following:			
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,		
,		В.	2-XI-61-187 Window 3, INLET-DOORS ZO Red Light OFF.	DNE C OPEN,		
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light ON.	DNE C		
	[42]	MANUALLY OPEN Lower Inlet Door Panel 4 associated with 2-ZS-61-186C4/2-ZS-61-187C4, ICE COND CNTMT ZONE C LOWER PANEL 4 OPEN, at RB EL 746, AND				
		VERIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.			
		В.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light ON.	ONE C OPEN		
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light OFF.	DNE C		
	[43]	MANUALLY CLOSE Lower Inlet Door Panel 4 associated with 2-ZS-61-186C4/2-ZS-61-187C4, AND		associated with		
		VERIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,		
		В.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light OFF.			
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light ON.	DNE C		

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6.9	Lower Inlet Door Logic and Functional Testing (continued)			
	[44]	2-ZS	NUALLY OPEN Lower Inlet Door Panel 5 associated with S-61-186C5/2-ZS-61-187C5, ICE COND CNTMT ZONE C VER PANEL 5 OPEN, at RB EL 746, AND	
		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 3, INLET DOORS ZONE C OPEN, Red Light ON.	
		C.	2-XI-61-187 Window 7, INLET DOORS ZONE C CLOSED, Green Light OFF.	
	[45] MANUALLY CLOSE Lower Inlet Door Par 2-ZS-61-186C5/2-ZS-61-187C5, AND		NUALLY CLOSE Lower Inlet Door Panel 5 associated wit S-61-186C5/2-ZS-61-187C5, AND	h
VE		VEF	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.	
		В.	2-XI-61-187 Window 3, INLET DOORS ZONE C OPEN, Red Light OFF.	
		C.	2-XI-61-187 Window 7, INLET DOORS ZONE C CLOSED, Green Light ON.	<u> </u>
	[46]	MANUALLY OPEN Lower Inlet Door Panel 6 associated with 2-ZS-61-186C6/2-ZS-61-187C6, ICE COND CNTMT ZONE C LOWER PANEL 6 OPEN, at RB EL 746, AND		
		VERIFY the following:		
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 3, INLET DOORS ZONE C OPEN, Red Light ON.	
		C.	2-XI-61-187 Window 7, INLET DOORS ZONE C CLOSED, Green Light OFF.	

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6.9	Lower Inlet Door Logic and Functional Testing (continued)						
	[47]		NUALLY CLOSE Lower Inlet Door Panel 6 S-61-186C6/2-ZS-61-187C6, AND	associated with			
	·	VE	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.				
		В.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light OFF.				
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light ON.	DNE C			
	[48]	2-Z	NUALLY OPEN Lower Inlet Door Panel 7 a S-61-186C7/2-ZS-61-187C7, ICE COND CI WER PANEL 7 OPEN, at RB EL 746, AND				
		VE	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,			
		В.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light ON.				
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light OFF.	DNE C			
	[49]		NUALLY CLOSE Lower Inlet Door Panel 7 S-61-186C7/2-ZS-61-187C7, AND	associated with			
		VEI	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,			
		B.	2-XI-61-187 Window 3, INLET DOORS ZO Red Light OFF.				
		C.	2-XI-61-187 Window 7, INLET DOORS ZO CLOSED, Green Light ON.	DNE C			

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6.9	Lower Inlet Door Logic and Functional Testing (continued)						
	[50]	MANUALLY OPEN Lower Inlet Door Panel 8 associated with 2-ZS-61-186C8/2-ZS-61-187C8, ICE COND CNTMT ZONE C LOWER PANEL 8 OPEN, at RB EL 746, AND					
		VE	VERIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.				
		В.	2-XI-61-187 Window 3, INLET DOORS ZONE C OPEN Red Light ON.	l, 			
		C.	2-XI-61-187 Window 7, INLET DOORS ZONE C C CLOSED, Green Light OFF.				
	[51]		NUALLY CLOSE Lower Inlet Door Panel 8 associated v S-61-186C8/2-ZS-61-187C8, AND	vith			
		VE	RIFY the following:				
		Α.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.				
		В.	2-XI-61-187 Window 3, INLET DOORS ZONE C OPEN Red Light OFF.	J,			
		С.	2-XI-61-187 Window 7, INLET DOORS ZONE C CLOSED, Green Light ON.				
	[52]	MANUALLY OPEN Lower Inlet Door Panel 1 associated with 2-ZS-61-186D1/2-ZS-61-187D1, ICE COND CNTMT ZONE D LOWER PANEL 1 OPEN. at RB EL 746, AND					
		VERIFY the following:					
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.				
		В.	2-XI-61-187 Window 9, INLET DOORS ZONE D OPEN Red Light ON.	J,			
		C.	2-XI-61-187 Window 13, INLET DOORS ZONE D CLOSED, Green Light OFF.				

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6.9	Lowe	r Inle	et Door Logic and Functional Testing (co	ntinued)					
	[53]	MANUALLY CLOSE Lower Inlet Door Panel 1 associated with 2-ZS-61-186D1/2-ZS-61-187D1, AND							
		VEI	RIFY the following:						
	A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.								
	 B. 2-XI-61-187 Window 9, INLET DOORS ZONE D OPEN, Red Light OFF. C. 2-XI-61-187 Window 13, INLET DOORS ZONE D CLOSED, Green Light ON. 								
	[54]	2-Z	MANUALLY OPEN Lower Inlet Door Panel 2 associated with 2-ZS-61-186D2/2-ZS-61-187D2, ICE COND CNTMT ZONE D LOWER PANEL 2 OPEN, at RB EL 746, AND						
		VEI	RIFY the following:						
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,					
		В.	2-XI-61-187 Window 9, INLET DOORS ZC Red Light ON.						
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light OFF.	ONE D					
	[55]		NUALLY CLOSE Lower Inlet Door Panel 2 S-61-186D2/2-ZS-61-187D2, AND	associated with					
		VEI	RIFY the following:						
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,					
		В.	2-XI-61-187 Window 9, INLET DOORS ZC Red Light OFF.	NE D OPEN.					
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light ON.	ONE D					

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6.9	Lowe	er Inlet Door Logic and Functional Testing (continued)									
	[56]	2-Z	MANUALLY OPEN Lower Inlet Door Panel 3 associated with 2-ZS-61-186D3/2-ZS-61-187D3, ICE COND CNTMT ZONE D LOWER PANEL 3 OPEN, at RB EL 746, AND								
		VEI	RIFY the following:								
		A.	A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS. –								
		B. 2-XI-61-187 Window 9, INLET DOORS ZONE D OPEN, Red Light ON.									
	C. 2-XI-61-187 Window 13, INLET DOORS ZONE D CLOSED, Green Light OFF.										
	[57]		MANUALLY CLOSE Lower Inlet Door Panel 3 associated with 2-ZS-61-186D3/2-ZS-61-187D3, AND								
		VEI	RIFY the following:								
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,							
		В.	2-XI-61-187 Window 9, INLET DOORS ZC Red Light OFF.								
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light ON.	ONE D							
	[58]	[58] MANUALLY OPEN Lower Inlet Door Panel 4 associated with 2-ZS-61-186D4/2-ZS-61-187D4, ICE COND CNTMT ZONE D LOWER PANEL 4 OPEN, at RB EL 746, AND									
		VE	RIFY the following:								
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,							
		В.	2-XI-61-187 Window 9, INLET DOORS ZC Red Light ON.	ONE D OPEN,							
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light OFF.	ONE D							

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	Data	Pack	age: Page of	Date						
6.9	Lowe	ower Inlet Door Logic and Functional Testing (continued)								
	[59]		MANUALLY CLOSE Lower Inlet Door Panel 4 associated with 2-ZS-61-186D4/2-ZS-61-187D4, AND							
		VE	RIFY the following:							
		A .	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,						
	 B. 2-XI-61-187 Window 9, INLET DOORS ZONE D OPEN, Red Light OFF. C. 2-XI-61-187 Window 13, INLET DOORS ZONE D CLOSED, Green Light ON. 									
	[60]	[60] MANUALLY OPEN Lower Inlet Door Panel 5 associated with 2-ZS-61-186D5/2-ZS-61-187D5, ICE COND CNTMT ZONE D LOWER PANEL 5 OPEN, at RB EL 746, AND								
		VE	RIFY the following:							
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,						
		В.	2-XI-61-187 Window 9, INLET DOORS ZC Red Light ON.	NE D OPEN,						
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light OFF.	ONE D						
	[61]		NUALLY CLOSE Lower Inlet DOOR Panel a 2-ZS-61-186D5/2-ZS-61-187D5, AND	5 associated						
		VE	RIFY the following:							
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,						
		В.	2-XI-61-187 Window 9, INLET DOORS ZO Red Light OFF.	DNE D OPEN,						
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light ON.	ONE D						

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	Data	Pack	age: Page of	Date
6.9	Lowe	er Inle	et Door Logic and Functional Testing (c	continued)
	[62]	2-Z	NUALLY OPEN Lower Inlet Door Panel 6 S-61-186D6/2-ZS-61-187D6, ICE COND (WER PANEL 6 OPEN, at RB EL 746, ANI	CNTMT ZONE D
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DO ALARMS.	OOR OPEN,
		В.	2-XI-61-187 Window 9, INLET DOORS 2 Red Light ON.	CONE D OPEN,
		C.	2-XI-61-187 Window 13, INLET DOORS CLOSED, Green Light OFF.	ZONE D
	[63]		NUALLY CLOSE Lower Inlet Door Panel S-61-186D6/2-ZS-61-187D6, AND	6 associated with
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DO CLEARS.	OOR OPEN,
		B.	2-XI-61-187 Window 9, INLET DOORS 2 Red Light OFF.	ZONE D OPEN,
		C.	2-XI-61-187 Window 13, INLET DOORS CLOSED, Green Light ON.	ZONE D
	[64]	186	NUALLY OPEN Lower Inlet Door Panel 7 D7/2-ZS-61-187D7, ICE COND CNTMT Z EN, at RB EL 746, AND	
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DO ALARMS.	OOR OPEN,
		В.	2-XI-61-187 Window 9, INLET DOORS 2 Red Light ON.	ONE D OPEN,
		C.	2-XI-61-187 Window 13, INLET DOORS CLOSED, Green Light OFF.	ZONE D

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6.9	Lowe	er ini	et Door Logic and Functional Testing (co	ntinued)						
	[65]		NUALLY CLOSE Lower Inlet Door Panel 7 S-61-186D7/2-ZS-61-187D7, AND	associated with						
		VE	RIFY the following:							
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,						
		В.	2-XI-61-187 Window 9, INLET DOORS ZO Red Light OFF.	DNE D OPEN,						
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light ON.	ONE D						
	[66]	2-Z	MANUALLY OPEN Lower Inlet Door Panel 8 associated with 2-ZS-61-186D8/2-ZS-61-187D8, ICE COND CNTMT ZONE D LOWER PANEL 8 OPEN, at RB EL 746, AND							
		VE	RIFY the following:							
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS	DR OPEN,						
		В.	2-XI-61-187 Window 9, INLET DOORS ZO Red Light ON.	DNE D OPEN,						
		C.	2-XI-61-287 Window 13, INLET DOORS Z CLOSED, Green Light OFF.	ONE D						
	[67]		NUALLY CLOSE Lower Inlet Door Panel 8 S-61-186D8/2-ZS-61-187D8, AND	associated with						
		VE	RIFY the following:							
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,						
		В.	2-XI-61-187 Window 9, INLET DOORS ZO Red Light OFF.	DNE D OPEN,						
		C.	2-XI-61-187 Window 13, INLET DOORS Z CLOSED, Green Light ON.	ONE D						

	Data I	Pack	age: Page of	Date			
6.9	Lowe	r Inle					
	[68]	2-ZS	NUALLY OPEN Lower Inlet Door Panel 1 associated with S-61-186E1/2-ZS-61-187E1, ICE COND CNTMT ZONE E VER PANEL 1 OPEN, at RB EL 746, AND				
		VEF	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.				
		В.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN Red Light ON.	,			
		C.	2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light OFF.				
	[69]		NUALLY CLOSE Lower Inlet Door Panel 1 associated wit S-61-186E1/2-ZS-61-187E1, AND	h			
		VEF	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.				
		В.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN Red Light OFF.	,			
		C.	2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light ON.				
	[70]	MANUALLY OPEN Lower Inlet Door Panel 2 associated with 2-ZS-61-186E2/2-ZS-61-187E2, ICE COND CNTMT ZONE E LOWER PANEL 2 OPEN, at RB EL 746, AND					
		VEF	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.				
		В.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN Red Light ON.				
		C.	2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light OFF.				

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6.9	Lower Inlet Door Logic and Functional Te	esting (continued)
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[71] **MANUALLY CLOSE** Lower Inlet Door Panel 2 associated with 2-ZS-61-186E2/2-ZS-61-187E2, **AND**

VERIFY the following:

Data Package: Page of

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS
- B. 2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN, Red Light OFF.
- C. 2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light ON.
- [72] **MANUALLY OPEN** Lower Inlet Door Panel 3 associated with 2-ZS-61-186E3/2-ZS-61-187E3, ICE COND CNTMT ZONE E LOWER PANEL 3 OPEN, at RB EL 746, **AND**

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.
- B. 2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN, Red Light ON.
- C. 2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light OFF.
- [73] MANUALLY CLOSE Lower Inlet Door Panel 3 associated with 2-ZS-61-186E3/2-ZS-61-187E3, AND

VERIFY the following:

- A. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.
- B. 2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN, Red Light OFF.
- C. 2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light ON.

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 114 of 130							
	Data	Pack	age: Page of	Date							
9	Lowe	Lower Inlet Door Logic and Functional Testing (continued)									
	[74]	[74] MANUALLY OPEN Lower Inlet Door Panel 4 associated with 2-ZS-61-186E4/2-ZS-61-187E4, ICE COND CNTMT ZONE E LOWER PANEL 4 OPEN, at RB EL 746, AND									
		VEI	RIFY the following:								
		A.	2-XA-55-6E-144A, ICE COND INLET DO ALARMS.	OR OPEN,							
		В.	2-XI-61-187 Window 10, INLET DOORS	ZONE E OPEN,							
		C.	2-XI-61-187 Window 14, INLET DOORS CLOSED, Green Light OFF.	ZONE E							
	[75] MANUALLY CLOSE Lower Inlet Door Panel 4 associated with 2-ZS-61-186E4/2-ZS-61-187E4, AND										
		VEI	RIFY the following:								
		A.	2-XA-55-6E-144A, ICE COND INLET DO CLEARS.	OR OPEN,							
		В.	2-XI-61-187 Window 10, INLET DOORS Red Light OFF.	ZONE E OPEN,							
		C.	2-XI-61-187 Window 14, INLET DOORS CL0SED, Green Light ON.								
	[76]	2-Z	NUALLY OPEN Lower Inlet Door Panel 5 S-61-186E5/2-ZS-61-187E5, ICE, COND (WER PANEL 5 OPEN, at RB EL 746, AND	CNTMT ZONE E							
		VE	RIFY the following:								
		A.	2-XA-55-6E-144A, ICE COND INLET DO ALARMS.	OR OPEN,							
		B.	2-XI-61-187 Window 10, INLET DOORS Red Light ON.	ZONE E OPEN,							
		C.	2-XI-61-187 Window 14, INLET DOORS . CLOSED, Green Light OFF.	ZONE E							

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 115 of 130				
	Data	Pack	age: Page of	Date				
6.9	Lowe	r Inle	et Door Logic and Functional Testing (co	ntinued)				
	[77]	MANUALLY CLOSE Lower Inlet Door Panel 5 associated with 2-ZS-61-186E5/2-ZS-61-187E5, AND						
		VEI	RIFY the following:					
		DR OPEN,						
	B. 2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN, Red Light OFF.							
		C. 2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light ON.						
	[78]	[78] MANUALLY OPEN Lower Inlet Door Panel 6 associated with 2-ZS-61-186E6/2-ZS-61-187E6, ICE COND CNTMT ZONE E LOWER PANEL 6 OPEN, at RB EL 746, AND						
		VEI	RIFY the following:					
		Α.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,				
		В.	2-XI-61-187 Window 10, INLET DOORS Z Red Light ON.	ONE E OPEN,				
		C.	2-XI-61-187 Window 14, INLET DOORS Z CLOSED, Green Light OFF.	ONE E				
	[79] MANUALLY CLOSE Lower Inlet Door Panel 6 associated with 2-ZS-61-186E6/2-ZS-61-187E6, AND							
		VE	RIFY the following:					
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,				
		В.	2-XI-61-187 Window 10, INLET DOORS Z Red Light OFF.	ONE E OPEN,				
		C.	2-XI-61-197 Window 14, INLET DOORS Z CLOSED, Green Light ON.	ONE E				

	Data I	Pack	age: Page of	Date
6.9	Lowe			
	[80]	2-Z	NUALLY OPEN Lower Inlet Door Panel 7 associated with S-61-186E7/2-ZS-61-187E7, ICE COND CNTMT ZONE E WER PANEL 7 OPEN, at RB EL 746, AND	
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN Red Light ON.	,
		C.	2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light OFF.	
	[81]		NUALLY CLOSE Lower Inlet Door Panel 7 associated wit S-61-186E7/2-ZS-61-187E7, AND	h
		VE	RIFY the following:	
		A.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.	
		В.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN Red Light OFF.	,
		C.	2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light ON.	
	[82]	2-Z	NUALLY OPEN Lower Inlet Door Panel 8 associated with S-61-186E8/2-ZS-61-187E8, ICE COND CNTMT ZONE E WER PANEL 8 OPEN, at RB EL 746, AND	
		VE	RIFY the following:	
		Α.	2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, ALARMS.	
		В.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN Red Light ON.	,
		C.	2-XI-61-187 Window 14, INLET DOORS ZONE E CLOSED, Green Light OFF.	

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 117 of 130						
	Data	Pack	cage: Page of	Date						
6.9	Lowe	er Inle	et Door Logic and Functional Testing (co	ntinued)						
	[83]		MANUALLY CLOSE Lower Inlet Door Panel 8 associated with 2-ZS-61-186E8/2-ZS-61-187E8, AND							
		VEI	RIFY the following:							
		A.	. 2-XA-55-6E-144A, ICE COND INLET DOOR OPEN, CLEARS.							
		В.	2-XI-61-187 Window 10, INLET DOORS ZONE E OPEN, Red Light OFF.							
		C.	2-XI-61-187 Window 14, INLET DOORS Z CLOSED, Green Light ON.	ONE E						
	[84]	2-Z	MANUALLY OPEN Lower Inlet Door Panel 1 associated with 2-ZS-61-186F1/2-ZS-61-187F1, ICE COND CNTMT ZONE F LOWER PANEL 1 OPEN, at RB EL 746, AND							
		VEI	RIFY the following:							
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.							
		B.	2-XI-61-187 Window 11, INLET DOORS Z Red Light ON.	ONE F OPEN,						
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light OFF.	ONE F						
	[85]		NUALLY CLOSE Lower Inlet Door Panel 1 S-61-186F1/2-ZS-61-187F1, AND	associated with						
		VEI	VERIFY the following:							
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.							
		В.	2-XI-61-187 Window 11 INLET DOORS ZO Red Light OFF.	ONE F OPEN						
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light ON.	ONE F						

	Data I	Pack	age: Page_		_ 0	of .		_								Date	
6.9	Lower Inlet Door Logic and Functional Testing (continued)																
	[86]	MANUALLY OPEN Lower Inlet Door Panel 2 associated with 2-ZS-61-186F2/2-ZS-61-187F2, ICE COND CNTMT ZONE F LOWER PANEL 2 OPEN, at RB EL 746, AND															
	VERIFY the following:																
		A.	2-XA-55-6E ALARMS	-14	14A	A, I	ICE	co	DND	INLE	ET D	000	or of	PEN,			
		В.	2-XI-61-187 Red Light O			dov	w 11	, IN	NLET	DO	OR	s z	ONE	F OF	PEN,		
		C.	2-XI-61-187 CLOSED, G					•		DO	ORS	S Z	ONE	F			
	[87]		NUALLY CL S-61-186F2/2							-	Pane	el 2	asso	ciated	d with	ı	
		VE	RIFY the follo	win	ng:	:											
		A.	2-XA-55-6E CLEARS.	-14	14A	A, I	ICE	cc	DND	INLE	ET D	000	or oi	PEN,			
		В.	2-XI-61-187 Red Light O			dov	w 11	, IN	NLET	DO	OR	s z	ONE	F OF	PEN,		
		C.	2-XI-61-187 CLOSED, G							DO	OR	s z	ONE	F			
	[88]	2-Z	NUALLY OP S-61-186F3/2 WER PANEL	2-Z8	S-6	61-	-187	'F3	, ICE	E CO	ND	CN					
		VE	RIFY the follo	win	ng:	:											
		A.	2-XA-55-6E ALARMS.	-14	14A	A, I	ICE (cc	DND	INLE	ET D	000	DR OI	PEN,			
		В.	2-XI-61-187 Red Light O			dov	w 11	, IN	NLET	DO	OR	s z	ONE	F OF	PEN,		
		C.	2-XI-61-187 CLOSED, G					-		DO	OR	s z	ONE	F			

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 119 of 130			
	Data	Pack	kage: Page of	Date			
6.9	Lowe	r Inl	et Door Logic and Functional Testing (co	ntinued)			
	[89]		NUALLY CLOSE Lower Inlet Door Panel 3 S-61-186F3/2-ZS-61-187F3, AND	associated with			
		VERIFY the following:					
		Α.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,			
		В.	2-XI-61-187 Window 11, INLET DOORS Z Red Light OFF.	ONE F OPEN,			
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light ON.	ONE F			
	[90]	MANUALLY OPEN Lower Inlet Door Panel 4 associated with 2-ZS-61-186F4/2-ZS-61-187F4, ICE COND CNTMT ZONE F LOWER PANEL 4 OPEN, at RB EL 746, AND					
		VE	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,			
		В.	2-XI-61-187 Window 11, INLET DOORS Z Red Light ON.	ONE F OPEN,			
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light OFF.	ONE F			
	[91]		NUALLY CLOSE Lower Inlet Door Panel 4 S-61-186F4/2-ZS-61-187F4, AND	associated with			
		VE	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.				
		B.	2-XI-61-187 Window 11, INLET DOORS Z Red Light OFF.	ONE F OPEN,			
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light ON.	ONE F			

	Data I	Pack	kage:	Page		F	l	Date
6.9	Lowe	r Inle	et Doc	or Logic a	and	Functional Testing (continu	ed)	
	[92]	2-Z	S-61-1	86F5/2-Z	S-6	wer Inlet Door Panel 5 associa 1-187F5, ICE COND CNTMT N, at RB EL 746, AND		
		VEF	RIFY t	ne followir	ng:			
		A.	2-XA ALAF		44 <i>F</i>	ICE COND INLET DOOR OF	PEN,	
		В.		61-187 W Light ON.		w 11, INLET DOORS ZONE	F OPEN,	
		C.				w 15, INLET DOORS ZONE ight OFF.	F	
	[93]					ower inlet Door Panel 5 assoc 1-187F5, AND	ciated with	I
		VEF	RIFY t	ne followir	ng:			
		A.	2-XA CLE/		44 <i>F</i>	ICE COND INLET DOOR OF	PEN,	
		В.		61-187 W Light OFF		w 11, INLET DOORS ZONE	F OPEN,	
		C.		61-187 W SED, Gree		w 15, INLET DOORS ZONE ight ON.	F	
	[94]	2-Z	S-61-1	86F6/2-Z	S-6	wer Inlet Door Panel 6 associ 1-187F6, ICE COND CNTMT N, at RB EL 746, AND		
		VEF	RIFY t	ne followir	ng:			
		A.	2-XA Alaf		44 <i>P</i>	ICE COND INLET DOOR OF	PEN,	
		В.		61-187 W Light ON.		w 11, INLET DOORS ZONE	F OPEN,	
		C.				w 15, INLET DOORS ZONE ight OFF.	F	

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 121 of 130				
	Data	Pack	age: Page of	Date				
6.9	Lowe	r Inle	et Door Logic and Functional Testing (co	ntinued)				
	[95]		MANUALLY CLOSE Lower Inlet Door Panel 6 associated with 2-ZS-61-186F6/2-ZS-61-187F6, AND VERIFY the following:					
		VEI						
		Α.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,				
		В.	2-XI-61-187 Window 11, INLET DOORS Z Red Light OFF.					
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light ON.	ONE F				
	[96]	2-Z	NUALLY OPEN Lower Inlet Door Panel 7 a S-61-186F7/2-ZS-61-187F7, ICE COND CN WER PANEL 7 OPEN, at RB EL 746, AND					
		VE	RIFY the following:					
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,				
		В.	2-XI-61-187 Window 11, INLET DOORS Z Red Light ON.					
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light OFF.	ONE F				
	[97]		NUALLY CLOSE Lower Inlet Door Panel 7 S-61-186F7/2-ZS-61-187F7, AND	associated with				
		VE	RIFY the following:					
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS.	DR OPEN,				
		В.	2-XI-61-187 Window 11, INLET DOORS Z Red Light OFF.	ONE F OPEN,				
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light ON.	ONE F				

	WBN Unit 2		ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000 Page 122 of 130			
	Data Package: Page of Da						
6.9	Lowe	Lower Inlet Door Logic and Functional Testing (continued)					
	[98]	ssociated with ITMT ZONE F					
		VE	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC ALARMS.	DR OPEN,			
		В.	2-XI-61-187 Window 11, INLET DOORS Z Red Light ON.	ONE F OPEN,			
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light OFF.	ONE F			
	[99]		NUALLY CLOSE Lower Inlet Door Panel 8 S-61-186F8/2-ZS-61-187F8, AND	associated with			
		VE	RIFY the following:				
		A.	2-XA-55-6E-144A, ICE COND INLET DOC CLEARS	DR OPEN,			
		В.	2-XI-61-187 Window 11, INLET DOORS Z Red Light OFF.				
		C.	2-XI-61-187 Window 15, INLET DOORS Z CLOSED, Green Light ON.	ONE F			
	[100]		RIFY the successful completion of this Subs C CRIT).	ection 6.9			

Date _____

7.0 POST PERFORMANCE ACTIVITY

NOTE

Post-performance steps may be performed in any order unless otherwise stated and should be completed as close in time as practicable to the end of the instruction performance.

- [1] **ENSURE** switches are aligned per Appendix D, "Final Switch Lineup."
- [2] **ENSURE** breakers are aligned per Appendix F, "Final Electrical Breaker Lineup."
- [3] **NOTIFY** the Unit 2 US/SRO of the test completion and System alignment.

Date _____

8.0 RECORDS

A. QA Records

Completed Test Package

B. Non-QA Records

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)
Unit 2 FSAR		
Section 6.2.1		
Section 6.2.4		
Section 6.7		
Table 14.2-1 Sheets 83 & 87 of 89		
2-TSD-88-5, Containment Isolation System		
2-TSD-61, Ice Condenser System Testing		
2-45N2676-4		
2-45N2676-5		
2-45N2677-4		
2-45N2677-5		
47B601-55-3		
2-47B601-55-4		
2-47B601-55-64	· · · · · · · · · · · · · · · · · · ·	
2-45B640-155		
2-45B640-233		

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.

ITEM	TEMPORARY CONDITION		PERFORMED	RETU	RNED TO NORMAL
No.	DESCRIPTION	Step No.	Performed By/Date CV By/Date	Step No.	Returned By/Date CV By/Date
				1	
	· · · · · · · · · · · · · · · · · · ·				
	····				

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

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

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Appendix C (Page 1 of 1)

SWITCH LINEUP

Data Package: Page ____ of ____

SWITCH	LOCATION	DESCRIPTION	REQUIRED POSITION	INITIAL/DATE	CONCURRENT VERIFICATION INITIAL/DATE
2-HS-61-191A	2-M-9	GLYCOL TO AHU OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-191B	2-M-9	GLYCOL TO AHU OUTSIDE CIV-ØA	P-AUTO		
2-HS-61-193A	2-M-9	GLYCOL FRM AHU OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-193B	2-M-9	GLYCOL FRM AHU OUTSIDE CIV-ØA	P-AUTO		
2-HS-61-192	2-M-9	GLYCOL TO AHU INSIDE CIV-ØA	A-AUTO		
2-HS-61-194	2-M-9	GLYCOL TO AHU INSIDE CIV-ØA	A-AUTO		
2-HS-61-96	2-M-9	FLOOR CLG SUP OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-97	2-M-9	FLOOR CLG SUP INSIDE CIV-ØA	A-AUTO		
2-HS-61-110	2-M-9	FLOOR CLG RET OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-122	2-M-9	FLOOR CLG RET INSIDE CIV-ØA	A-AUTO		

WBN Unit 2	ICE CONDENSER SYSTEM	2-PTI-061-01 Rev. 0000
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Appendix D (Page 1 of 1)

FINAL SWITCH LINEUP

Data Package: Page ____ of ____

SWITCH	LOCATION	DESCRIPTION	REQUIRED POSITION	INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-HS-61-191A	2-M-9	GLYCOL TO AHU OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-191B	2-M-9	GLYCOL TO AHU OUTSIDE CIV-ØA	P-AUTO		
2-HS-61-193A	2-M-9	GLYCOL FRM AHU OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-193B	2-M-9	GLYCOL FRM AHU OUTSIDE CIV-ØA	P-AUTO		
2-HS-61-192	2-M-9	GLYCOL TO AHU INSIDE CIV-ØA	A-AUTO		
2-HS-61-194	2-M-9	GLYCOL TO AHU INSIDE CIV-ØA	A-AUTO		
2-HS-61-96	2-M-9	FLOOR CLG SUP OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-97	2-M-9	FLOOR CLG SUP INSIDE CIV-ØA	A-AUTO		
2-HS-61-110	2-M-9	FLOOR CLG RET OUTSIDE CIV-ØA	A-AUTO		
2-HS-61-122	2-M-9	FLOOR CLG RET INSIDE CIV-ØA	A-AUTO		

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Unit 2		Rev. 0000
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Appendix E (Page 1 of 1)

ELECTRICAL BREAKER LINEUP

Data Package: Page ____ of ____

BREAKER	BREAKER DESCRIPTION	BREAKER LOCATION	REQUIRED POSITION	INITIAL/DATE	CONCURRENT VERIFICATION INITIAL/DATE
2-BKR-278-M010/19	UNIT CNTL BD 2-M- 7B BKR 19 TO 2- PNL-278-M010	2-M-7 INST PWR RACK B, BKR 19	ON		
2-BKR-235-4/6	NSSS AUX RELAY RACK 2-R-58 BUS C	120V AC VITAL INST POWER BOARD 2-IV, BKR 6	ON		
2-BKR-235-2/7	NSSS AUX RELAY RACK C BUS TO PNL 2-R-58	120V AC VITAL INST POWER BD 2- II, BKR 7	ON		
0-DPL-236-0001	125V VITAL BATT POWER I DISTRIBUTION PANEL	CIRCUITS C14 AND D22 GLYCOL SUPPLY FROM EXPANSION TANK	ON		

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Appendix F (Page 1 of 1)

FINAL ELECTRICAL BREAKER LINEUP

Data Package: Page ____ of ____

BREAKER IDENTIFICATION	BREAKER DESCRIPTION	BREAKER LOCATION	REQUIRED POSITION	INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-BKR-278-M010/19	UNIT CNTL BD 2-M-7B BKR 19 TO 2-PNL-278- M010	2-M-7 INST PWR RACK B, BKR 19	ON		
2-BKR-235-4/6	NSSS AUX RELAY RACK 2-R-58 BUS C	120V AC VITAL INST POWER BOARD 2-IV, BKR 6	ON		
2-BKR-235-2/7	NSSS AUX RELAY RACK C BUS TO PNL 2-R-58	120V AC VITAL INST POWER BD 2-II, BKR 7	ON		
0-DPL-236-0001	125V VITAL BATT POWER I DISTRIBUTION PANEL	CIRCUITS C14 AND D22 GLYCOL SUPPLY FROM EXPANSION TANK	ON		

	WATTS BAR NUCLEAR PLANT
	UNIT 2 STARTUP
	TITLE: Gaseous Waste Disposal System
	Instruction No: 2-PTI-077-02
	Revision No: 0000
PREPARED BY:	Kur+ McComack/ Kug/luck DATE 1/5/11
	Ross Horval Print NAME/SIGNATURE DATE 1/5/11
KEVIEWED BY:	<u>ICSS [10/val · //2005][0/vu]</u> DATE <u>1/3/1/</u> PRINT NAME/ SIGNATURE
INSTRUCTION A JTG MEETING N JTG CHAIRMAN APPROVED BY:	DATE 3)31
TEST RESULTS	APPROVAL
	APPROVAL IO:
JTG MEETING N	
JTG MEETING N	IO: DATE

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

WBN	GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02	7
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Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0000	3/3/11	ALL	Initial issue based on Rev. 1 of 1-PTI-077-02

.

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Date _____

1.0 INTRODUCTION

1.1 Test Objectives

This Preoperational Test Instruction (PTI) will demonstrate the capability of the Gaseous Waste Disposal System (GWDS) to collect gaseous waste from specific Unit 2 tanks and discharge to the environment via the Unit 2 Shield Building.

1.2 Scope

Collection of gases from the following Unit 2 tanks:

- 1. Pressurizer Relief Tank (PRT)
- 2. Reactor Coolant Drain Tank (RCDT)
- 3. Volume Control Tank (VCT)

In addition to the above, this PTI also verifies flow of gases to the environment via the Unit 2 Shield Building Vent.

2.0 **REFERENCES**

2.1 **Performance References**

A. SMP-9.0, Conduct of Test

2.2 Developmental References

A. Final Safety Analysis Report

FSAR-Amendment 102

- a. Section 11.3, GASEOUS WASTE SYSTEMS
- b. Table 14.2-1, PREOPERATIONAL TESTS SUMMARIES

(SHEET 30 of 89) GASEOUS WASTE PROCESSING SYSTEM TEST SUMMARY

Date

2.2 **Developmental References (continued)**

- Β. Drawings
 - 1. Flow Diagrams
 - 2-47W830-1 Rev 2, Waste Disposal System a.
 - b. 2-47W830-4 Rev 1, Waste Disposal System
 - 2-47W830-6 Rev 4, Waste Disposal System C.
 - (1) DRA 53756-407 Rev 0
 - (2) DRA 53123-013 Rev 0
 - d. 2-47W809-1 Rev 3, Chemical and Volume Control System
 - 2-47W813-1 Rev 1, Reactor Coolant System e.
 - Electrical Control/Logic Diagrams 2.
 - 2-47W-610-77-3 Rev 0, Control Diagram Waste Disposal System a.
 - b. 2-47W-610-77-4 Rev 2, Control Diagram Waste Disposal System
 - 47W610-77-5 Rev 14, Control Diagram Waste Disposal System C.
 - 3. **Electrical Wiring Diagrams**

- 4. Vendor/Other Diagrams
 - 271C858-Sheet 1 Rev 12, Waste Disposal System-Index a.
 - b. 271C858-Sheet 11 Rev 1, Waste Disposal System-Gas Panel
- C. Documents
 - 1. 2-TSD-77-2 Rev 0, Gaseous Waste Disposal System
 - 2. WB-DC-40-31.16, Rev 2, "Displacement Criteria for Vibration Qualification of Piping" Appendix A.

Date _____

3.0 PRECAUTIONS AND LIMITATIONS

- A. Test must be coordinated with Unit 1 Operations to mitigate any adverse impact to Unit 1.
- B. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Manual Procedure 1021.
- C. 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.
- D. Discrepancies between component ID tags and the description in a procedure/instruction if the UNIDs match, exclusive of place keeping zeros and train designators (e.g.; 2-HS-31-468 vs. 2-HS-031-0468) and the noun description is sufficient to identify the component. This condition does not require a TDN in accordance SMP-14.0. If the component label needs to be changed, a Tag Request Form (TR Card) should be processed in accordance with TI-12.14. Make an entry in the CTL and continue testing.
- E. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- F. Problems identified during the test shall be annotated on the Chronological Test Log (CTL) from SMP-9.0 including a description of the problem, the procedure step when/where the problem was identified, corrective action steps taken to resolve the problem, and the number of the corrective action document, if one was required.
- G. Observe all Radiation Protection (RP) requirements when working in or near contaminated areas.
- H. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.
- I. Test personnel will coordinate with Unit 1 Operations when manipulating Unit 1 equipment.
- J. If a pressure increase in the Gaseous Waste Vent Header makes venting necessary during the performance of this test, any steps that involve venting to detect a pressure increase will need to be repeated.
- K. During the performance of this procedure visual observation of piping and components is required. This includes steady state and transient operations with visual confirmation that vibration is not excessive.

WBN	GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02
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Date _____

3.0 **PRECAUTIONS AND LIMITATIONS (continued)**

L. If the vibration is determined to be excessive the Test Engineer shall initiate a Test Deficiency Notice (TDN).

Date _____

4.0 PREREQUISITE ACTIONS

NOTE

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

4.1 **Preliminary Actions**

[1] **EVALUATE** items on Open Watts Bar Integrated Task Equipment List (WITEL) **AND**

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

- [2] **ENSURE** changes to the references listed on Appendix A, have been reviewed, and determined **NOT** to adversely affect the test performance
- [3] **VERIFY** current revisions and change paper for referenced drawings has been reviewed and determined **NOT** to adversely affect the test performance, **AND**

ATTACH documentation of current drawing revision numbers and change paper that were reviewed to the data package.

- [4] **VERIFY** the test/performance copy of this Preoperational Test Instruction (PTI) is the current revision including any change notices and as needed, each test person assisting in this test has the current revision including any change notices.
- [5] **OBTAIN** copies of the applicable forms from the current revision in BSL, **AND**

ATTACH to this PTI for use during the performance of this PTI.

[6] **ENSURE** outstanding Design Change Notices (DCN's), Engineering Design Change Requests (EDCR's) or Temporary Alterations (TA's) do **NOT** adversely impact testing, **AND**

ATTACH documentation of DCN's, EDCR's, and TA's that were reviewed to the data package.

	WBN Unit 2		GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02 Rev. 0000 Page 9 of 30
	Data	Pacl	kage: Page of	Date
4.1	Preli	nina	ry Actions (continued)	
	[7]		SURE required Component Testing has been by to start of test.	n completed
	[8]		NDUCT a pretest briefing with Test and Opersonnel in accordance with SMP-9.0.	erations
	[9]		SURE that communications are available for ting is to be conducted.	r areas where
	[10]	tes	SURE components contained within the bout t are under the jurisdictional control of Preop artup Engineering (PSE) and/or Plant Operat	perational
	[11]	coc	SURE a review of outstanding Clearances h ordinated with U2 Operations for impact to th formance, AND	
		RE	CORD in Appendix B, Temporary Condition	Log if required.
	[12]		RFORM a pretest walkdown on equipment t sure no conditions exist that will impact test p	
	[13]		SURE the following systems are operational ced in service to the extent necessary to per	
		Α.	System 32, Control Air.	
		В.	System 30D, Auxiliary Building Gas Treatr	nent System.
		C.	System 62, Chemical and Volume Control	System.
		D.	System 68, Reactor Coolant System.	
		E.	System 77, Auxiliary Building Nitrogen Sys	stem
	[14]		SURE the Gaseous Waste Disposal System extent necessary to support performance of	
4.2	Spec Supp		ools, Measuring and Test Equipment, Pa	rts, and

	WBN Unit 2	GASE	OUS WASTE DISPO	SAL SYSTEM	2-PTI-077-02 Rev. 0000 Page 10 of 30)
	Data	Package:	Page of			Date
4.3	Field	Preparatio	ns			
	[1]	and assoc been flush	2-TANK-68-PRT, PRE iated gaseous waste o ed with Nitrogen, ANE	isposal system		
	[2]	and assoc	WO#	lisposal system		
		RECORD	WO#			
	[3]	associated	2-TANK-62-129, VOLI d gaseous waste dispo th Nitrogen, AND			
		RECORD	WO#			
	[4]		2-TANK-68-PRT, PRE and available with leve			;
	[5]		2-TANK-77-1, REACT ce and available with le			
	[6]		2-TANK-62-129, VOLI d available with level l			
	[7]		0-RE-90-118, WDS G R is operable and in se		RADIATION	
	[8]	Penetratio	a ladder has been stag n room to access the ume Control Tank Roo	mezzanine abo		e
	[9]		switches are aligned p tch Lineup."	er Appendix C		
	[10]		valves are aligned per ve Lineup."	Appendix D,		

	WBN Unit 2	GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02 Rev. 0000 Page 11 of 30	
	Data	Package: Page of	C)ate
.4	Appr	ovals and Notifications		·
	[1]	OBTAIN permission of the Preoperational Start start the test.	up Manager to	
		Preoperational Startup	Manager	Date
	[2]	OBTAIN the Unit 1 Supervisor's (US/SRO) or S (SM) authorization to start the test.	Shift Manager's	
		Unit 1 US/SRO/S	SM	Date
	[3]	OBTAIN the Unit 2 Supervisor's (US/SRO) or S (SM) authorization to start the test.	Shift Manager's	
		Unit 2 US/SRO/S	M	Date

WBN	GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02
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Date _____

5.0 ACCEPTANCE CRITERIA

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Date _____

6.0 **PERFORMANCE**

6.1 Waste Gas System Operational Tests

CAUTION

In the event of a HI or HI-HI Oxygen content alarm on Panel 0-L-2 or in the MCR during the performance of this subsection, the test shall be stopped immediately. Operating procedures will be relied upon to prevent the formation of a combustible gas mixture.

[1] **ENSURE** prerequisites listed in Section 4.0 have been completed.

NOTES

- 1) During the performance of this subsection, visual observation of transient and steady state vibrations is required.
- 2) Steps 6.1[2] through 6.1[7] will demonstrate collecting waste gas from the PRT.

CAUTION

Gaseous Waste Vent Header pressure is maintained between 1.0 and 3.5 psig. If any observed header pressure is outside of that range, the test shall be stopped and Unit 1 Operations shall be notified.

- PLACE 2-HS-68-305A, N2 TO PRT CIV-ØA, to the CLOSE position (2-M-5).
- [3] **RECORD** vent header pressure from 0-PIS-77-88A/B, VENT HDR PRESS HI ALARM SWITCH (0-L-2).

_____psig

- [4] **PLACE** 2-HS-68-305A, N2 TO PRT CIV-ØA, in the OPEN position (2-M-5).
- [5] CONTINUE to purge PRT until a pressure increase is detected by 0-PIS-77-88A/B, VENT HDR PRESS HI ALARM SWITCH (0-L-2), AND

RECORD the pressure

_____ psig

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Data Package: Page ____ of ____ Date ____

6.1 Waste Gas System Operational Tests (continued)

- [6] **PLACE** 2-HS-68-305A, N2 TO PRT CIV-ØA, to the CLOSE position (2-M-5).
- [7] **PLACE** 2-HS-68-301A, PRT VENT TO WDS VENT HEADER, to the CLOSE position (2-M-5).

NOTE

Steps 6.1[8] through 6.1[18] will demonstrate collecting waste gas from the RCDT.

- [8] **PLACE** 2-HS-77-19, RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT, to the CLOSE position (2-M-15).
- [9] **ENSURE** 2-HS-77-18A, RCDT TO WDS VENT HDR CIV-ØA IN CNTMT, in the OPEN position (2-M-15).

CAUTION

Do not allow Reactor Coolant Drain Tank pressure to exceed 5 psig as read on 2-PI-77-2 (0-L-2).

- [10] **PLACE** 2-HS-77-20, N2 to RCDT CIV-ØA OUT CNTMT, in the **OPEN** position (2-M-15).
- [11] **MARK** the present setting on 2-PIC-77-158, RCDT N2 SUPPLY CONTROLLER, (692/A5W)

__ psig

- [12] ADJUST 2-PIC-77-158, RCDT N2 SUPPLY CONTROLLER, (692/A5W) to the OPEN position taking care to not exceed 5 psig as read on 2-PI-77-2, RCDT PRESS (0-L-2).
- [13] **RECORD** vent header pressure from 0-PIS-77-88A/B, VENT HDR PRESS HI ALARM SWITCH, (0-L-2).

__ psig

[14] **PLACE** 2-HS-77-19, RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT, in the OPEN position (2-M-15).

	WBN Unit 2	Re	PTI-077-02 ev. 0000 ige 15 of 30
	Data	Package: Page of	Date _
5.1	Wast	e Gas System Operational Tests (continued)	
	[15]	CONTINUE to pressurize RCDT until a pressure in detected by 0-PIS-77-88A/B, VENT HDR PRESS I SWITCH, (0-L-2), AND	
		RECORD the pressure	
		psig	_
	[16]	PLACE 2-HS-77-20, N2 to RCDT CIV-ØA OUT CI CLOSE position (2-M-15).	NTMT, in the
[17] RE-ADJUST 2-PIC-77-158, RCDT N2 SUPPLY CONTROLLER (692/A11W) to its original setting.			
	[18]	PLACE 2-HS-77-19, RCDT TO WDS VENT HDR OUT CNTMT, in the CLOSE position (2-M-15).	CIV-ØA
	· · · · · · · · · · · · · · · · · · ·	NOTE	
Step	os 6.1[19]	through 6.1[31] will demonstrate collecting waste ga	as from the VCT.
	[19]	ENSURE the following are OPEN :	
		A. 2-ISV-62-690, VOLUME CONTROL TANK WI HEADER ISOL (713/A12U).	DS VENT
		B. 2-ISV-62-691, VOLUME CONTROL TANK WI HEADER ISOL (713/A12U).	DS VENT
		MARK the present setting on 2-PIC-62-119, VOL (N2 BLANKET (713/A12U)	CNTL TANK
		psig	_
	[21]	ADJUST 2-PIC-62-119, VOL CNTL TANK N2 BLA the OPEN position (713/A12U).	NKET, to
			-
	[22]	RECORD vent header pressure from 0-PIS-77-88/ HDR PRESS HI ALARM SWITCH (0-L-2).	- A/B, VENT
	[22]	•	- A/B, VENT

	WBN Unit 2		GASEOUS WASTE DISPOSAL SYSTE	EM 2-PTI-077-02 Rev. 0000 Page 16 of 30	
	Data	Pacl	kage: Page of	Date	
6.1	Wast	e Ga	s System Operational Tests (continue	d)	
	[24]		EN 2-ISV-62-692, VOLUME CONTROL [*] PPLY ISOL (713/A12U).	TANK NITROGEN	
	[25]		RK the present setting on 2-PIC-62-126, TL TO VH (713/A12U)	VCT PRESS	
			psig		
	[26]		JUST 2-PIC-62-126, VCT PRESS CNTL EN position (713/A12U).	TO VH, to the	
	[27]	by (NTINUE to purge VCT until a pressure ir 0-PIS-77-88A/B, VENT HDR PRESS HI / L-2), AND		
		RE	CORD the pressure		
			psig		
	[28]		ACE 2-HS-62-125, VCT VENT TO WDS OSE position (2-M-6).	VENT HDR, in the	
	[29]		OSE 2-ISV-62-692, VOLUME CONTROL ROGEN SUPPLY ISOL (713/A12U).	_ TANK	
	[30]		-ADJUST 2-PIC-62-119, VOL CNTL TAN 3/A12U), to its original setting marked in		
	[31]		-ADJUST 2-PIC-62-126, VCT PRESS CI ginal setting marked in step 6.1[25].	NTL TO VH, to its	

NOTE

Steps 6.1[32] through 6.1[49] will verify flow to the environment via the Unit 2 Shield Bldg.

- [32] **REQUEST** Chemistry Countroom to **PERFORM** 0-ODI-90-5.
- [33] **NOTIFY** Radiation Protection of Gas Decay Tank (GDT) release intentions in consideration of any personnel work being performed on the Reactor Building roof.

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Date

1st

IV

6.1 Waste Gas System Operational Tests (continued)

CAUTION

ABGTS should NOT be operated for testing purposes or for releases of waste decay tank at the same time both containment purge exhaust fans are in operation. Operation of one purge exhaust fan with the ABGTS is acceptable.

- ENSURE "A" train ABGT System Fan available per SOI-30.06. [34]
- ENSURE 2-RM-90-400, U2 SHIELD BUILDING VENT [35] MONITOR and its associated isokinetic sampler are in service.
- **ENSURE 2-RM-90-400, US SHIELD BUILDING VENT** [36] MONITOR isokinetic flow measurement is operable and in service.
- **OBTAIN** Decay Tank Release Permit (0-ODI-90-5) from [37] Chemistry, AND

COMPLETE in conjunction with this instruction.

NOTE

IV for Step 6.1[37] may be performed by Chemistry.

- **ENSURE** 0-ODI-90-5 Release Permit approved by [38] U1 SM/SRO.
- **OBTAIN** U1 SRO approval and verification that release is [39] authorized, and instructions are correct for release of Gas Decay Tank A. U1 SRO
- START ABGTS Fan A-A per SOI-30.06. [40]

	WBN Unit 2		GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02 Rev. 0000 Page 18 of 30	
	Data	Pacl	kage: Page of	Da	te
6.1	Wast	e Ga	s System Operational Tests (continued)		
	[41]	PL	OSE 0-FCV-77-119, PLANT VENT FLOW C ACING 0-FIC-77-119, GDT DISCHARGE IN NTROLLER, to 0% position, AND		
		VE	RIFY the following (0-L-2):		
		A.	Green light ON.		
		В.	Red light OFF.		
		C.	White light OFF.		
	[42]		ACE 0-HS-77-245, WD PLANT VENT HEAD LVE, to the UNIT 2 VENT position (0-L-2), A		
		VE	RIFY valve OPEN by red indicating light ON	(713/A11W).	

NOTE

Gas Decay Tank A is normally charged with nitrogen and should be used to verify flow to the environment via the Unit 2 Shield Bldg.

[43] **RECORD** GDT A pressure from 0-PIS-77-115, GDT A PRESS HI PRESS ALARM SWITCH (0-L-2).

_____ psig

- [44] **OPEN** the following manually operated valves:
 - A. 0-ISV-77-742A, GAS DECAY TANK A INLET ISOL.
 - B. 0-ISV-77-748A, GAS DECAY TANK A PLANT VENT HDR ISOL.

WBN Unit 2			GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02 Rev. 0000 Page 19 of 30	
	Data	Pack	age: Page of	Date _	
6.1	Wast	te Ga	s System Operational Tests (continued)		
	[45]	PL/	EN 0-FCV-77-119, PLANT VENT FLOW CC ACING 0-FIC-77-119, GDT DISCHARGE IN NTROLLER, to 100% position, AND		
		VEI	RIFY the following (0-L-2):		
		Α.	Green light OFF.	-	
		В.	Red light ON.	-	
		C.	White light OFF.	-	
	[46]	CO	SURE 0-PCV-77-117, PLANT VENT FILTER NTROL (0-L-2) is maintained between 4 and I-77-117 (0-L-269).		
	[47]	VEI	RIFY GDT A pressure decreasing, AND		
			CORD GDT A pressure from 0-PIS-77-115, PRESS ALARM SWITCH (0-L-2).	GDT A PRESS	
			psig	-	
	[48]	PL/	DSE 0-FCV-77-119, PLANT VENT FLOW C ACING 0-FIC-77-119, GDT DISCHARGE IN NTROLLER, to 0% position, AND		
		VEI	RIFY the following (0-L-2):		
		A.	Green light ON.	-	
		В.	Red light OFF.	-	
		C.	White light OFF.	-	
	[49]	CLO	DSE the following manually operated valves	:	
		Α.	0-ISV-77-742A, GAS DECAY TANK A INL	ET ISOL	
		В.	0-ISV-77-748A, GAS DECAY TANK A PLA ISOL.	ANT VENT HDR	
	[50]	SH	UTDOWN ABGTS Fan per SOI-30.06.	-	
	[51]	RE	TURN Release Permit to Chemistry for pack	age closure.	

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Date _____

6.1 Waste Gas System Operational Tests (continued)

[52] **VERIFY** no excessive vibration of the piping system and components associated with the performance of this subsection was observed.

Data Package: Page _____ of _____

Date _____

7.0 POST PERFORMANCE ACTIVITY

NOTE

Post-performance steps may be performed in any order unless otherwise stated and should be completed as close in time as practicable to the end of the instruction performance.

[1]	ENSURE switches are aligned per Appendix E, "Final Switch Lineup."	
[2]	ENSURE valves are aligned per Appendix F, "Final Valve Lineup."	
[3]	NOTIFY Unit 1 Operations of the test completion and system alignment.	
[4]	NOTIFY the Unit 2 US/SRO of the test completion and system alignment.	

Data Package: Page _____ of _____

Date _____

8.0 **RECORDS**

A. QA Records

Completed Test Package

B. Non-QA Records

None

WBN	GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02
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Appendix A (Page 1 of 1)

TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

Date _____

Data Package: Page ____ of ____

PROCEDURE/INSTRUCTIONREVISION/CHANGESINITIAL AND DATE.
(N/A FOR NO CHANGE)FSAR Table 14.2 (Sheet 30 of 89)2-TSD-77-2WB-DC-40-31.16Image: Strain S

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 exists. Additional copies of this table may be made as necessary.

	TEMPORARY	PEI	RFORMED	RETURNED TO NORMAL		
ITEM	CONDITION	Step	Perf. By/Date	Step	Returned By/Date	
NUMBER	DESCRIPTION	Number	2nd By/Date	Number	2nd By/Date	
					· · · · · · · · · · · · · · · · · · ·	

WBN	GASEOUS WASTE DISPOSAL SYSTEM	2-PTI-077-02
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Appendix C (Page 1 of 1)

INITIAL SWITCH LINEUP

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SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION REQUIR POSITI		VERIFICATION INITIAL/DATE	CONCURRENT VERIFICATION INITIAL/DATE
2-HS-68- 301A	2-M-5	PRT VENT TO WDS VENT HEADER	OPEN		
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	OPEN		
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	OPEN		
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE		

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INITIAL VALVE LINEUP

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	REQUIRED POSITION	VERIFICATION INITIAL/DATE	CONCURRENT VERIFICATION INITIAL/DATE
2-ISV-77-503	RCDT VENT HEADER ISOL	716/AZ281	CLOSE		
2-ISV-68-572	PRESSURIZER RELIEF TANK NITROGEN SUPPLY ISOL	702/AZ89	OPEN		
2-ISV-77-591	RCD TK VENT ISOLATION	716/AZ281	OPEN		
2-ISV-68-1115	PRESSURIZER RELIEF TANK NITROGEN SUPPLY ISOL	716/ICQ4	OPEN		
2-RTV-77-307A	2-PCV-68-304 ROOT	713/A4W	OPEN		
2-ISV-77-846	PRESSURIZER TANK N2 HDR ISOL	713/A11W	OPEN		
2-ISV-77-851	VOLUME CONTROL TANK N2 SUPPLY ISOL	713/A12U	OPEN		
2-ISV-62-686	VCT ISLN	713/A12U	CLOSE		
2-ISV-62-687	VOLUME CONTROL TANK WASTE GAS SAMPLE ISOL	713/A12U	CLOSE		·

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INITIAL VALVE LINEUP

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	REQUIRED POSITION	VERIFICATION INITIAL/DATE	CONCURRENT VERIFICATION INITIAL/DATE
2-SMV-62-689	VCT SAMPLE	713/A12U	CLOSE		
2-RTV-62-412A	2-PCV-62-119 ROOT	713/A12U	OPEN		
2-ISV-62-593	VCT HYDROGEN ISLN	713/A12U	CLOSE		
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN		
2-ISV-77-854	RCDT N2 SUPPLY ISOL	692/A7W	OPEN		
2-RTV-77-872A	2-PCV-77-158 CNTL ISOL	692/A7W	OPEN		

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FINAL SWITCH LINEUP

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SWITCH NUMBER	SWITCH LOCATION			VERIFICATION INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-HS-68- 301A	2-M-5	PRT VENT TO WDS VENT HEADER	CLOSE		
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	OPEN		
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	OPEN		
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE		

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FINAL VALVE LINEUP

Data Package: Page ____ of ____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	REQUIRED POSITION	VERIFICATION INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-ISV-77-503	RCDT VENT HEADER ISOL	716/AZ281	OPEN		
2-ISV-68-572	PRESSURIZER RELIEF TANK NITROGEN SUPPLY ISOL	702/AZ89	OPEN		
2-ISV-77-591	RCD TK VENT ISOLATION	716/AZ281	OPEN		
2-ISV-68-1115	PRESSURIZER RELIEF TANK NITROGEN SUPPLY ISOL	716/ICQ4	OPEN		
2-RTV-77-307A	2-PCV-68-304 ROOT	713/A4W	OPEN		
2-ISV-77-846	PRESSURIZER TANK N2 HDR ISOL	713/A11W	OPEN		
2-ISV-77-851	VOLUME CONTROL TANK N2 SUPPLY ISOL	713/A12U	OPEN		
2-ISV-62-686	VCT ISLN	713/A12U	OPEN		

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FINAL VALVE LINEUP

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	REQUIRED POSITION	VERIFICATION INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-ISV-62-687	VOLUME CONTROL TANK WASTE GAS SAMPLE ISOL	713/A12U	OPEN		
2-SMV-62-689	VCT SAMPLE	713/A12U	CLOSE		
2-RTV-62-412A	2-PCV-62-119 ROOT	713/A12U	OPEN		
2-ISV-62-593	VCT HYDROGEN ISLN	713/A12U	CLOSE		
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN	· · · · · · · · · · · · · · · · · · ·	
2-ISV-77-854	RCDT N2 SUPPLY ISOL	692/A7W	OPEN		
2-RTV-77-872A	2-PCV-77-158 CNTL ISOL	692/A7W	OPEN		