

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

December 21, 2010

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

> Watts Bar Nuclear Plant, Unit 2 NRC Docket No. 50-391

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

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

PTI NUMBER	Rev.	TITLE
2-PTI-031B-01	0	Incore Instrument Room Air Conditioning System

NRR

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

Sincerely,

Masoud Bajestani Watts Bar Unit 2 Vice President U.S. Nuclear Regulatory Commission Page 2 December 21, 2010

cc (Enclosure):

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

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

	WATTS BAI	R NUCLEAR PLANT 2 STARTUP		
TITLE:Incor	e Instrument Roo	om Air Conditioning S	ystem	
1	nstruction No: Revision No:	<u>2-PTI-031B-01</u> 0000		
PREPARED BY: Bethany	B Merriman	BADUU E/ SIGNATURE	date <u>9</u>	-20-1
REVIEWED BY: Keith Jo	PRINT NAME	E/ SIGNATURE	DATE <u></u>	20-70
INSTRUCTION APPROV	AL			
JTG MEETING NO: 2 - JTG CHAIRMAN: 20 APPROVED BY: 10 PREOPE	10-013	DATE DATE DATE	10	
TEST RESULTS APPROV	VAL			
JTG MEETING NO: JTG CHAIRMAN: APPROVED BY:		DATE DATE	- <u></u>	
PREOPE	RATIONAL STARTUP M	ANAGER		

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Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0	12/20/10	ALL	This procedure was written using the Unit 1 test procedure PTI-031G-01 Rev 1 as a guide with CN-2 incorporated.

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1.0 INTRODUCTION

1.1 Test Objectives

The object of this test is to demonstrate that the Incore Instrument Room Air Conditioning System functions in accordance with design requirements.

1.2 Scope

This test demonstrates the operability of the Incore Instrument Room Air Conditioning System to ensure the following:

- A. The Incore Instrument Room Air Conditioning System Containment Isolation Valves function in accordance with design requirements.
 - 1. The Incore Instrument Room Air Conditioning System Containment Isolation Valves stroke close time is equal to or less than design requirements.
 - 2. The Incore Instrument Room Air Conditioning System Containment Isolation Valve Control Room alarms and indicators operate in accordance with design requirements.
 - 3. The Incore Instrument Room Air Conditioning System Containment Isolation Valves close on a simulated Phase A Containment Isolation signal and remain closed after a simulated Phase A Containment Isolation signal reset.
 - 4. The Incore Instrument Room Air Conditioning System Containment Isolation Valves fail closed on loss of electrical power.
 - 5. The Incore Instrument Room Air Conditioning System Containment Isolation Valves fail closed on loss of control air.
- B. Incore Instrument Room Air Conditioning System Air Handling Units maintain desired air flow.
- C. Incore Instrument Room Air Conditioning System controls, interlocks, and alarms function in accordance with design requirements.

D. Essential Raw Cooling Water Supply Valves automatic controls function in accordance with design requirements:

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2.0 **REFERENCES**

2.1 **Performance References**

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

2.2 Developmental References

- A. Final Safety Analysis Report
 - 1. FSAR, Amendment 100
 - a. SubSection 6.2.4, Containment Isolation System
 - b. Table 6.2.4-1, Pgs 38-39, Watts Bar Nuclear Plant Containment Penetrations and Barriers
 - c. SubSection 9.2.1, Essential Raw Cooling Water (ERCW)
 - d. SubSection 9.4.7, Containment Air Cooling System
 - e. Table 14.2-1, Sheets 4/5, Essential Raw Cooling Water System Test Summary
 - f. Table 14.2-1, Sheets 38/39, Containment Ventilation System Test Summary
 - g. Table 14.2-1, Sheet 83, Containment Isolation System Test Summary
- B. Drawings
 - 1. Flow Diagrams
 - a. 2-47W866-1, Rev 2, Flow Diagram Heating and Ventilation Air Flow
 - b. 2-47W865-5, Rev 0, Flow Diagram Air Conditioning Chilled Water, DRAs 53763-030, -032 Rev 1, and -034 Rev 0
 DRAs 53764-002 & -031 Rev 0,
 DRAs 54923-027 & -028 Rev 0, -061 thru -066 Rev 0
 - c. 2-47W845-2, Rev 0, Flow Diagram Essential Raw Cooling Water System

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2.2 Developmental References (continued)

- d. 2-47W848-9, Rev 1, Mechanical Flow Diagram Control Air, DRA 53340-001 Rev 0
- 2. Electrical
 - a. 2-45B655-5C, Rev 0, Main Control Room Annunciator Inputs Window Box XA-55-5C
 - b. 2-45B655-E5C, Rev 0, Electrical Annunciator Window Box XA-55-5C Engraving
 - c. 45N2635-15, Rev 11, Local Instrument Panels Connection Diagrams, DRAs 54172-314 & -315 Rev 0
 - d. 45N2648-2, Rev 6, Unit Control Board Panel 2-M-9 Connection Diagrams
 - e. 45N2648-3, Rev 7, Unit Control Board Panel 2-M-9 Connection Diagrams
 - f. 45N2648-4, Rev 13, Unit Control Board Panel 2-M-9 Connection Diagram
 - g. 45N2676-4, Rev 16, Solid State Protection Sys Train A Connection Diagram
 - h. 45N2676-5, Rev 10, Solid State Protection Sys Train A Connection Diagram
 - i. 45N2677-4, Rev 18, Solid State Protection Sys Train B Connection Diagram
 - j. 45N2677-5, Rev 9, Solid State Protection Sys Train B Connection Diagram
 - k. 45W2766-6, Rev 11, 480V Reactor MOV Board 2A1-A Connection Diagram, DRA 54172-310, Rev 0
 - I. 45B2766-16A, Rev 8, 480V Reactor MOV Board 2A1 Conn Diag -Compt 16A
 - m. 45B2766-18C, Rev 4, 480V Reactor MOV Board 2A1 Conn Diag -Compt 18C

2.2 Developmental References (continued)

- n. 45W2768-9, Rev 5, 480V Reac MOV Board 2B1-B Connection Diagram,
 - DRA 54172-311, Rev 0
- o. 45B2768-16A, Rev 8, 480V Reac MOV BD 2B1-B Conn Diag Compt 16A
- p. 45B2768-18C, Rev 3, 480V Reac MOV BD 2B1-B Conn Diag Compt 18C
- q. 2-45W600-31-1, Rev 0, Air Conditioning System Schematic Diagrams
- r. 2-45W600-57-11, Rev 0, Separation and Misc Aux Relays Schematic Diagrams
- s. 45W703-7, Rev 19, 125V Vital Battery Board III Panel 4 Connection Diagram
- t. 45W703-8, Rev 20, 125V Vital Battery Board IV Panel 4 Connection Diagram
- u. 2-45W751-1, Rev 1, 480V Reac MOV BD 2A1-A Single Line
- v. 2-45W751-7, Rev 1, 480V Reac MOV BDS 2B1-B Single Line, DRA 53292-092 Rev 0
- w. 2-45W760-31-6, Rev 0, Air Conditioning System Schematic Diagrams, DRAs 53287-086 & -088 Rev 0, DRAs 53292-081 & -089 Rev 0
- x. 45W2766-7, Rev 7, 480V Reactor MOV BD 2A1-A Connection Diagram
- y. 2-47B601-55-3, [LATER], Electrical Instrument Tabulation, DRA 52453-006 Rev 0
- z. 2-47B601-55-4, [LATER], Electrical Instrument Tabulation, DRA 52453-007 Rev 0
- 3. Mechanical
 - a. 2-47W600-198, Rev 0, Electrical Instruments and Controls
 - b. 2-47W600-221, Rev 0, Electrical Instruments and Controls

2.2 Developmental References (continued)

- 4. Logic/Control
 - a. 2-47W610-31-5, Rev 2, Electrical Control Diagram Air Conditioning System
 - b. 2-47W611-31-7, Rev 1, Electrical Logic Diagram Air Conditioning System
 - c. 2-47W610-67-3, Rev 3, Electrical Control Diagram ERCW System
 - d. 2-47W611-67-3, Rev 1, Electrical Logic Diagram Essential Raw Cooling Water
- C. Vendor Documents
 - 1. D02207-1, Rev 0, Schematic Wiring Diagram For PWC120S3-T4-Z (Contract Number 43993)
- D. Documents
 - 1. WBN2-30RB-4002, Rev 1, System Description Reactor Building Ventilation System
 - 2. WBN2-67-4002, Rev 1, Essential Raw Cooling Water System, System 67
 - 3. WBNP Technical Specifications, Unit 2, SubSection 3.6.3, Containment Isolation Valves
 - 4. 2-SOI-30.04, [DRAFT]
 - 5. 2-TSD-31B-01, Rev 1, Containment Instrument Room Cooling System (31)
 - 6. 2-TSD-88-05, Rev 1, Containment Isolation System
 - 7. G-37, Rev 4, General Engineering Specification for Testing and Balancing of HVAC Systems During Installation, Modification, and Maintenance
 - 8. 2-PTI-067-03, ERCW Valve Logic Test [LATER]

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. Component tags and labels may differ slightly (abbreviations, punctuation, letter case, etc.) from the description given in this test. If this situation occurs, it shall not be considered a test deficiency or procedure deviation. It shall be documented in the CTL and reconciled by way of a plant labeling request, drawing discrepancy, or pen and ink procedure change, as appropriate.
- D. All wires removed/lifted from a terminal shall be identified, grouped together, and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be labeled with the work implementing document number that required them to be lifted if left unattended.
- E. All open problems (including non Tech Spec testing acceptance criteria) 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. All terminal points and connections are to be considered energized. Instrumentation must be used to determine if the circuits are de-energized.
- I. Retermination of lifted leads requires that their restored bend radius is equal to or greater than the as found condition.

3.0 **PRECAUTIONS AND LIMITATIONS (continued)**

- J. Transients include pump starts and stops, water hammers or other fluid transients. Check valves should be observed for abnormal slam during startup or shutdown of pumps. Verification that transient conditions are NOT causing excessive vibration may be accomplished by observation during the transient or verification subsequent to the transient that resultant damage has NOT occurred.
- K. Steady-state conditions include verification that flow control valves and orifices do NOT produce excessive cavitation induced vibrations. Verification that excessive vibration from other flow induced phenomena does NOT occur is also required.
- L. The instrument room chilled water system expansion tank water level shall be inspected periodically. Water level should be above the tank midpoint. To prevent possible overpressurization of the chilled water pump discharge piping, makeup should NOT be added to the system when the chilled water pumps are running.
- M. 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.
- N. If vibration is determined to be excessive, the Startup Test Engineer (STE) shall initiate a Test Deficiency Notice (TDN).
- O. Portions of this test will simulate a high ambient room temperature using an electric heat gun. This activity shall be performed slowly to prevent damage to the temperature switch sensing bulb.
- P. During the performance of this procedure, ensure no adverse impacts to the operation of Unit 1 systems, structures, or components.

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Date _____

4.0 PREREQUISITE ACTIONS

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

4.1 **Preliminary Actions**

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

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

- [3] **ENSURE** changes to the references listed on "Test Procedures/Instructions Reference Review", Appendix A, have been reviewed, and determined NOT to adversely affect the test performance.
- [4] **VERIFY** current revisions and change papers 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 papers that were reviewed to data package.

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

ENSURE that they will NOT adversely affect the test performance.

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

WE Uni	3N it 2	Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 13 of 128	
C	Data Pa	ackage: Page of	Date	
F	Prelimi	nary Actions (continued)		
[]	7] E E T A	ENSURE outstanding Design Change Notice Engineering Document Construction Release Temporary Alterations (TAs) do NOT advers	es (DCNs), es (EDCRs), or ely impact testing,	
	/ r	ATTACH documentation of DCNs, EDCRs, a eviewed to the data package.	and TAs that were	
[{	8] E c F	ENSURE a review of outstanding Clearance coordinated with U2 Operations for impact to performance, AND	s has been o the test	
	I	F items are found, THEN		
	F	RECORD in Appendix B, Temporary Conditi	ion Log.	
[9] E ti r	ENSURE GTM-05, HVAC Air Balance, has the JTG for concurrence that it adequately s equirements of this instruction.	been submitted to atisfies the	
	J	ITG Meeting:		
[10] /	ATTACH completed GTM-05, HVAC Air Bal System 31B.	ance package for	
[11] V t	/ERIFY system cleanness as required for the his test has been completed in accordance	ne performance of with SMP-7.0.	
[12] E t	ENSURE components contained within the lest are under the jurisdictional control of Pre Startup Engineering (PSE) and/or Plant Ope	boundaries of this eoperational erations	
[13] F e	PERFORM a pretest walkdown on equipments and the second	nt to be tested tost performance.	
[[14] (CONDUCT a pretest briefing with Test and Opersonnel in accordance with SMP-9.0.	Operations	
[15] E t	ENSURE that communications are available esting is to be conducted.	e for areas where	

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Date

4.1 **Preliminary Actions (continued)**

[16] **REVIEW** preventative maintenance for systems/components covered by this test, **AND**

VERIFY no conditions exist that will impact test performance.

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

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

Digital Stopwatches	0.60 min	60 minutes	NA
[2] 0-60 min		± 0.1 sec	NA
Pocket Thermometer	0-100°F	± 2°F	
Ultrasonic Flowmeter and Transducers for 2 inch Sch 40 pipe	0-100 gpm	\pm 3% of reading	

COMPLETE the following table:

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

- [3] **OBTAIN** the following items:
 - A. electric heat gun (Subsections 6.5 and 6.6)
 - B. cardboard, approximately 3 ft x 6 ft (Subsection 6.8)
 - C. electrical jumper (Subsection 6.9)
 - D. plastic five gallon bucket (Subsection 6.9)
- [4] **ENSURE** an ice bath is available for use.

	WBN Unit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 15 of 128
	Data	Pack	cage: Page of	Date _
.3	Field	Preț	parations	
	[1]	EN pla	SURE the following systems are operable ced in service to the extent necessary to	e and have been perform this test:
		A.	System 32, Control Air - Provides contr dampers, and controllers.	ol air to valves, _
		В.	System 67, Essential Raw Cooling Wat cooling water to Incore Instrument Roo	er - Provides m Chillers
		C.	System 213, 480V AC Reactor MOV Be electrical power to Incore Instrument Re Circulation Pumps, and Chiller Compre	oards - Provides oom Cooler Fans, ssors.
		D.	System 235, 120V AC Vital Power System controls.	em - Provides -
		E.	System 236, 125V DC Vital Power Syspower to isolation valves and dampers.	tem - Provides -
	[2]	EN Ree app inp	SURE System 55, Annunciator and Sequencoding System applicable TBK switches blicable Master Switches are ON, and wir ut(s) are ENABLED for the following Ann	uential Events are ON, the ndow software unciator Windows:
		Α.	2-XA-55-5C/103-E, INSTR RM COOLE	R A/B FLOW LO
		В.	2-XA-55-5C/104-E, INSTR RM COOLII A/B LEVEL LO	NG SURGE TANK
	[3]	PE	RFORM Electrical Lineup, Table 1.	-
	[4]	PE	RFORM Valve Lineup, Table 2.	-
	[5]	ΡE	RFORM Switch Lineup, Table 3.	

V U	VBN nit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 16 of 128
	Data F	Pack	kage: Page of	Date
3	Field	Prep	parations (continued)	
	[6]	VEI acc	RIFY system piping is properly filled and ve ordance with 2-SOI-30.04.	ented in
		A.	Subsection 6.5	
		В.	Subsection 6.6	· · · · · · · · · · · · · · · · · · ·
		C.	Subsection 6.7	·
		D.	Subsection 6.8	
		E.	Subsection 6.9	
	[7]	EN	SURE required scaffold is in place.	
	[8]	VEI Lev	RIFY Incore Instrument Room Chilled Wat vel is greater than or equal to 75% for the f	er Surge Tank ollowing:
		A.	2-LG-31-304, INCORE INSTRUMENT R TANK 2A LEVEL [Pen Rm, EL 692, Col /	OOM SURGE A12W]
		В.	2-LG-31-325, INCORE INSTRUMENT R TANK 2B LEVEL [Pen Rm, EL 692, Col /	OOM SURGE A12W]
	[9]	EN: req	SURE M&TE required for test performance uired) filled, vented and placed in service,	e has been (as AND
		RE	CORD data on Appendix E of SMP-9.0.	
	[10]	EN: liste hav and	SURE plant instruments required for test p ed on Appendix C, Permanent Plant Instru- ve been (as required) filled, vented and pla d are within their calibration interval, AND	performance, mentation Log, iced in service,
		RE	CORD data on Appendix C	

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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

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5.0 ACCEPTANCE CRITERIA

Refer to Appendix D, Backup Calculations, for discussion of instrumentation uncertainties.

A. Incore Instrument Room Air Conditioning System Containment Isolation Valves:

	Stroke close time is equal to or less than 10 seconds	Control Room alarms and indicators operate in accordance with design	Close on a simulated Phase A Containment Isolation signal	Remain closed after a simulated Phase A Containment Isolation signal reset	Fail closed on the loss of electrical power	Fail closed on the loss of control air
2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL	6.1.2[5]	6.1.2[3], 6.1.2[4], 6.1.2[7], 6.1.2[8]	6.2.2[3]	6.2.2[5]	6.3.2[2]	6.4.2[3]
2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL	6.1.3[5]	6.1.3[3], 6.1.3[4], 6.1.3[7], 6.1.3[8]	6.2.3[3]	6.2.3[5]	6.3.3[2]	6.4.3[3]
2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL	6.1.4[5]	6.1.4[3], 6.1.4[4], 6.1.4[7], 6.1.4[8]	6.2.4[3]	6.2.4[5]	6.3.4[2]	6.4.4[3]
2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL	6.1.5[5]	6.1.5[3], 6.1.5[4], 6.1.5[7], 6.1.5[8]	6.2.5[3]	6.2.5[5]	6.3.5[2]	6.4.5[3]
2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL	6.1.6[5]	6.1.6[3], 6.1.6[4], 6.1.6[7], 6.1.6[8]	6.2.6[3]	6.2.6[5]	6.3.6[2]	6.4.6[3]
2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL	6.1.7[5]	6.1.7[3], 6.1.7[4], 6.1.7[7], 6.1.7[8]	6.2.7[3]	6.2.7[5]	6.3.7[2]	6.4.7[3]
2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL	6.1.8[5]	6.1.8[3], 6.1.8[4], 6.1.8[7], 6.1.8[8]	6.2.8[3]	6.2.8[5]	6.3.8[2]	6.4.8[3]
2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL	6.1.9[5]	6.1.9[3], 6.1.9[4], 6.1.9[7], 6.1.9[8]	6.2.9[3]	6.2.9[5]	6.3.9[2]	6.4.9[3]

5.0 ACCEPTANCE CRITERIA (continued)

- B. Incore Instrument Room Air Conditioning System Air Handling Units Maintain Desired Air Flow:
 - 1. Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, 5,200 CFM (minimum 4,680) (Step 6.5.4[6])
 - 2. Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, 5,200 CFM (minimum 4,680) (Step 6.5.5[6])
- C. Incore Instrument Room Air Conditioning System Chillers Recieve Desired Water Flowrate:
 - 1. Chiller 2-CHR-31-303, INCORE INSTR ROOM CHILLER 2A, minimum 22 GPM (Step 6.6.2[5])
 - 2. Chiller 2-CHR-31-324, INCORE INSTRUMENT ROOM CHILLER 2B, minimum 22 GPM (Step 6.6.3[5])
- D. Incore Instrument Room Air Cónditioning System Manual Controls Function In Accordance With Design Requirements:
 - Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A (Subsection 6.5.2)
 - 2. Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B (Subsection 6.5.3)
 - 3. Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A (Subsection 6.5.4)
 - 4. Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B (Subsection 6.5.5)
- E. Incore Instrument Room Air Conditioning System Automatic Controls Function In Accordance With Design Requirements:
 - 1. Damper 2-FCO-31-263, INCORE INSTR RM AHU 2A DISCHARGE (Subsection 6.6.2)
 - 2. Damper 2-FCO-31-264, INCORE INSTR RM AHU 2A DISCHARGE (Subsection 6.6.2)
 - 3. Damper 2-FCO-31-268, INCORE INSTR RM AHU 2B DISCHARGE (Subsection 6.6.3)

5.0 ACCEPTANCE CRITERIA (continued)

- 4. Damper 2-FCO-31-269, INCORE INSTR RM AHU 2B DISCHARGE (Subsection 6.6.3)
- 5. Temperature Control Valve 2-TCV-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL (Subsection 6.5.6)
- 6. Temperature Control Valve 2-TCV-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL (Subsection 6.5.7)
- 7. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A (Subsection 6.6.2)
- 8. Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B (Subsection 6.6.3)
- 9. Compressor 2-COMP-31-303B, INCORE INSTR RM CHILLER A COMPRESSOR (Subsection 6.6.2)
- 10. Compressor 2-COMP-31-324B, INCORE INSTR RM CHILLER B COMPRESSOR (Subsection 6.6.3)
- 11. Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A (Subsection 6.6.2)
- 12. Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B (Subsection 6.6.3)
- F. Incore Instrument Room Air Conditioning System Interlocks and Alarms Function In Accordance With Design Requirements:
 - 1. Air Handling Unit 2A Stop on Simulated Phase A Containment Isolation (Subsection 6.7.2)
 - 2. Air Handling Unit 2B Stop on Simulated Phase A Containment Isolation (Subsection 6.7.3)
 - 3. Redundant Unit Start on Low Air Flow (Subsection 6.8)
 - 4. Circulation Pump 2A Trip on Low Tank Level (Subsection 6.9.2)
 - 5. Circulation Pump 2B Trip on Low Tank Level (Subsection 6.9.3)

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5.0 ACCEPTANCE CRITERIA (continued)

- G. Essential Raw Cooling Water Supply Valves Automatic Controls Function In Accordance With Design Requirements:
 - 1. Temperature Control Valve 2-TCV-67-115, INSTR RM WATER CLR 2A ERCW SUP TEMP CNTL (Subsection 6.6.2)
 - 2. Temperature Control Valve 2-TCV-67-118, INSTR RM WATER CLR 2B ERCW SUP TEMP CNTL (Subsection 6.6.3)

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6.0 PERFORMANCE



Date _____

6.1 Incore Instrument Room Air Conditioning System Containment Isolation Valves Control Logic

6.1.1 **Preliminary Actions**

[1] **VERIFY** prerequisites listed in Section 4.0 for SubSection 6.1 have been completed.

NOTES

- 1) Subsections 6.1.2 thru 6.1.9 may be performed in any order. Steps within these subsections must be performed in the order written.
- 2) Containment Isolation Valves will be stroke timed locally at the valve, and remotely at the control switch, in the close direction. Local stroke timing begins with the initiating signal, and is concluded with the completion of limit switch actuator movement. Remote stroke timing begins with the initiating signal, and is concluded with the position indication lights status change on 2-M-9. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.

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.1.2	2-FC Logi	V-31- c	305, INCORE INSTR RM AHU 2A CWR	R ISOL, Control		
	[1]	ENS ISO	SURE 2-FCV-31-305, INCORE INSTR R L [Annulus, EL 736, AZ 64], is CLOSED ervation).	RM AHU 2A CWR (local		
	[2]	PLA CIV	ACE Handswitch 2-HS-31-305, CIRC PM -PHASE A [2-M-9], to the OPEN position	1P A SUCT n, AND		
VERIFY Valve 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL, OPENS (local observation), THEN			TR RM AHU 2A EN			
		REI	LEASE to A AUTO.			
[3]		VEF A S	RIFY status lights on Handswitch 2-HS-3 UCT CIV-PHASE A, are:	31-305, CIRC PMP		
		Α.	Red Light ON, 2-M-9 (Acc Crit)			
		В.	Green Light OFF, 2-M-9 (Acc Crit)			
[4] VEI COI FCV		VEF COI FC\	RIFY status lights on 2-XX-55-6F, Windo NTAINMENT ISOLATION STATUS PAN √-31-305 [2-M-6], are:	ow 19, IEL (TRAIN-B),		
		A .	Red Light ON, 2-M-6 (Acc Crit)			
		В.	Green Light OFF, 2-M-6 (Acc Crit)	·		

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6.1.2 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL, Control Logic (continued)

NOTE

The following step requires stroke timing both locally and in the Main Control Room. All M&TE (stopwatches) should be readied and personnel should agree on a countdown method.

[5] **PLACE** Handswitch 2-HS-31-305, CIRC PMP A SUCT CIV-PHASE A, to the CLOSE position, **AND**

RECORD:

A. Stroke CLOSE time of Valve 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL (local observation)

seconds	M&TE:	

Acc Crit: ≤ 10 sec

B. Stroke CLOSE time of Valve 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL (indication lights)

seconds M&TE:

Acc Crit: ≤ 10 sec

- [6] **VERIFY** Valve 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL, is CLOSED (local observation).
- [7] **VERIFY** status lights on Handswitch 2-HS-31-305, CIRC PMP A SUCT CIV-PHASE A, are:
 - A. Green Light ON, 2-M-9 (Acc Crit)

B. Red Light OFF, 2-M-9 (Acc Crit)

- [8] VERIFY status lights on 2-XX-55-6F, Window 19, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-B), FCV-31-305, are:
 - A. Green Light ON, 2-M-6 (Acc Crit)

B. Red Light OFF, 2-M-6 (Acc Crit)

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6.1.2 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL, Control Logic (continued)

[9] **PLACE** Handswitch 2-HS-31-305, CIRC PMP A SUCT CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

Date _____

6.1.3 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL, Control Logic

- [1] **ENSURE** 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL [Inst Rm, EL 716, AZ 60], is CLOSED (local observation).
- [2] **PLACE** Handswitch 2-HS-31-306, CIRC PMP A SUCT CIV-PHASE A [2-M-9], to the OPEN position, **AND**

VERIFY Valve 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

[3] **VERIFY** status lights on Handswitch 2-HS-31-306, CIRC PMP A SUCT CIV-PHASE A, are:

A. Red Light ON, 2-M-9 (Acc Crit)

- B. Green Light OFF, 2-M-9 (Acc Crit)
- [4] **VERIFY** status lights on 2-XX-55-6E, Window 19, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-A), FCV-31-306 [2-M-6], are:

A. Red Light ON, on 2-M-6 (Acc Crit)

B. Green Light OFF, on 2-M-6 (Acc Crit)

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5.1.3	2-FC Cont	CV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL, Itrol Logic (continued)				
			NOTE		·	
The for M&TE metho	ollowing E (stopv od.	j step vatch	erequires stroke timing both locall es) should be readied and person	y and in the nel should a	Main Control Ro agree on a count	oom. All down
	[5]	PL/ CIV	ACE Handswitch 2-HS-31-306, C /-PHASE A, to the CLOSE positio	IRC PMP A on, AND	SUCT	
		RE	CORD:			
		A .	Stroke CLOSE time of Valve 2-F INSTR RM AHU 2A CW PUMP observation)	FCV-31-306 2A ISOL (lo	, INCORE cal	
			seconds	M&TE:		
			Acc Crit: ≤ 10 sec			
		B. ⁻	Stroke CLOSE time of Valve 2-F INSTR RM AHU 2A CW PUMP	FCV-31-306 2A ISOL (ir	, INCORE	·····
			seconds	M&TE:		
			Acc Crit: ≤ 10 sec			
	[6]	VE CW	RIFY Valve 2-FCV-31-306, INCO / PUMP 2A ISOL, is CLOSED (loo	RE INSTR I cal observat	RM AHU 2A tion).	
	[7]	VE A S	RIFY status lights on Handswitch SUCT CIV-PHASE A, are:	2-HS-31-30)6, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Cr	·it)		
		В.	Red Light OFF, 2-M-9 (Acc Crit	t)		

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6.1.3 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL Control Logic (continued)

- [8] **VERIFY** status lights on 2-XX-55-6E, Window 19, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-A), FCV-31-306, are:
 - A. Green Light ON, on 2-M-6 (Acc Crit)
 - B. Red Light OFF, on 2-M-6 (Acc Crit)
- [9] **PLACE** Handswitch 2-HS-31-306, CIRC PMP A SUCT CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

Date _____

6.1.4 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL, Control Logic

- [1] **ENSURE** 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL [Inst Rm, EL 716, AZ 65], is CLOSED (local observation).
- [2] **PLACE** Handswitch 2-HS-31-308, CIRC PMP A DISCH CIV-PHASE A [2-M-9], to the OPEN position, **AND**

VERIFY Valve 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

[3] **VERIFY** status lights on Handswitch 2-HS-31-308, CIRC PMP A DISCH CIV-PHASE A, are:

A. Red Light ON, 2-M-9 (Acc Crit)

B. Green Light OFF, 2-M-9 (Acc Crit)

[4] **VERIFY** status lights on 2-XX-55-6E, Window 20, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-A), FCV-31-308 [2-M-6], are:

A. Red Light ON, on 2-M-6 (Acc Crit)

B. Green Light OFF, on 2-M-6 (Acc Crit)

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6.1.4 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL, Control Logic (continued)

NOTE The following step requires stroke timing both locally and in the Main Control Room. All M&TE (stopwatches) should be readied and personnel should agree on a countdown method. PLACE Handswitch 2-HS-31-308, CIRC PMP A DISCH [5] CIV-PHASE A, to the CLOSE position, AND **RECORD**: Α. Stroke CLOSE time of Valve 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL (local observation) M&TE: seconds Acc Crit: ≤ 10 sec Stroke CLOSE time of Valve 2-FCV-31-308, INCORE В. INSTR RM AHU 2A CWS ISOL (indication lights) M&TE: seconds Acc Crit: ≤ 10 sec VERIFY Valve 2-FCV-31-308, INCORE INSTR RM AHU 2A [6] CWS ISOL, is CLOSED (local observation). VERIFY status lights on Handswitch 2-HS-31-308, CIRC PMP [7] A DISCH CIV-PHASE A, are: A. Green Light ON, 2-M-9 (Acc Crit) Β. Red Light OFF, 2-M-9 (Acc Crit) VERIFY status lights on 2-XX-55-6E, Window 20, [8] CONTAINMENT ISOLATION STATUS PANEL (TRAIN-A), FCV-31-308, are:

A. Green Light ON, 2-M-6 (Acc Crit)

B. Red Light OFF, 2-M-6 (Acc Crit)

Date _____

6.1.4 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL, Control Logic (continued)

[9] **PLACE** Handswitch 2-HS-31-308, CIRC PMP A DISCH CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL, OPENS (local observation), THEN

RELEASE to A AUTO.

Date

6.1.5 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL, Control Logic

- ENSURE 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL [Annulus, EL 737, AZ 65], is CLOSED (local observation).
- [2] **PLACE** Handswitch 2-HS-31-309, CIRC PMP A DISCH CIV-PHASE A [2-M-9], to the OPEN position, **AND**

VERIFY Valve 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

[3] **VERIFY** status lights on Handswitch 2-HS-31-309, CIRC PMP A DISCH CIV-PHASE A, are:

A. Red Light ON, 2-M-9 (Acc Crit)

- B. Green Light OFF, 2-M-9 (Acc Crit)
- [4] **VERIFY** status lights on 2-XX-55-6F, Window 20, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-B), FCV-31-309 [2-M-6], are:
 - A. Red Light ON, 2-M-6 (Acc Crit)
 - B. Green Light OFF, 2-M-6 (Acc Crit)

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6.1.5	2-FC\ Logic	CV-31-309, INCORE INSTR RM AHU 2A CWS ISOL, Control ic (continued)					
				NOT	Ε		
The fo M&TE metho	ollowing (stopw od.	step r atches	equires strok s) should be	e timing both lo readied and per	cally and ir sonnel sho	the Main Control R uld agree on a cour	oom. All itdown
	[5]	PLA CIV-I	CE Handswit PHASE A, to	ch 2-HS-31-309 the CLOSE pos), CIRC PM sition, AND	P A DISCH	
		REC	ORD:				
	١	Α.	Stroke CLOS INSTR RM A	E time of Valve HU 2A CWS IS	2-FCV-31- OL (local o	309, INCORE bservation)	
		-	Acc Crit: ≤ 1	seconds 0 sec	M&1	Ē:	
		В.	Stroke CLOS INSTR RM A	E time of Valve HU 2A CWS IS	2-FCV-31- OL (indicat	309, INCORE ion lights)	
		_	-	seconds	M&1	É:	
			Acc Crit: ≤ 1	l0 sec			
	[6]	VER CWS	I FY Valve 2-I S ISOL, is CL	-CV-31-309, IN OSED (local ob	CORE INS servation).	TR RM AHU 2A	
	[7]	VER A DIS	I FY status lig SCH CIV-PH	hts on Handswi ASE A, are:	tch 2-HS-3	1-309, CIRC PMP	
		A.	Green Light (ON, 2-M-9 (Acc	Crit)		
		В.	Red Light OF	F, 2-M-9 (Acc	Crit)		
	[8]	VER CON FCV	IFY status lig TAINMENT I -31-309, are:	hts on 2-XX-55 ISOLATION ST	-6F, Windo ATUS PAN	w 20, EL (TRAIN-B),	
		Α.	Green Light	ON, 2-M-6 (Acc	Crit)		
		в	Red Light OF	E 2-M-6 (Acc	Crit)		

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		1	
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6.1.5 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL, Control Logic (continued)

[9] **PLACE** Handswitch 2-HS-31-309, CIRC PMP A DISCH CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL, OPENS (local observation), THEN

Date _____

6.1.6 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL, Control Logic

- ENSURE 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL [Annulus, EL 737, AZ 104], is CLOSED (local observation).
- [2] **PLACE** Handswitch 2-HS-31-326, CIRC PMP B SUCT CIV-PHASE A [2-M-9], to the OPEN position, **AND**

VERIFY Valve 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

[3] **VERIFY** status lights on Handswitch 2-HS-31-326, CIRC PMP B SUCT CIV-PHASE A, are:

A. Red Light ON, 2-M-9 (Acc Crit)

B. Green Light OFF, 2-M-9 (Acc Crit)

[4] **VERIFY** status lights on 2-XX-55-6E, Window 21, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-A), FCV-31-326 [2-M-6], are:

A. Red Light ON, on 2-M-6 (Acc Crit)

B. Green Light OFF, on 2-M-6 (Acc Crit)

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6.1.6 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL, Control Logic (continued)

		NOTE						
The following M&TE (stopw method.) step vatche	requires stroke timing both locally and in the Main Control Room. All es) should be readied and personnel should agree on a countdown						
[5]	PLACE Handswitch 2-HS-31-326, CIRC PMP B SUCT CIV-PHASE A, to the CLOSE position, AND							
	RE	CORD:						
	A.	Stroke CLOSE time of Valve 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL (local observation)						
		seconds M&TE: Acc Crit: ≤ 10 sec						
	В.	Stroke CLOSE time of Valve 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL (indication lights)						
		seconds M&TE: `Acc Crit: ≤ 10 sec						
[6]	VEI CW	RIFY Valve 2-FCV-31-326, INCORE INSTR RM AHU 2B /R ISOL, is CLOSED (local observation).						
[7]	VEI B S	RIFY status lights on Handswitch 2-HS-31-326, CIRC PMP UCT CIV-PHASE A, are:						
	A.	Green Light ON, 2-M-9 (Acc Crit)						
	В.	Red Light OFF, 2-M-9 (Acc Crit)						
[8]	VEI CO FC	RIFY status lights on 2-XX-55-6E, Window 21, NTAINMENT ISOLATION STATUS PANEL (TRAIN-A), √-31-326, are:						

A. Green Light ON, 2-M-6 (Acc Crit)

B. Red Light OFF, 2-M-6 (Acc Crit)

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6.1.6 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL, Control Logic (continued)

[9] **PLACE** Handswitch 2-HS-31-326, CIRC PMP B SUCT CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL, OPENS (local observation), **THEN**

Date _____

6.1.7 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL, Control Logic

- ENSURE 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL [Inst Rm, EL 716, AZ 104], is CLOSED (local observation).
- [2] **PLACE** Handswitch 2-HS-31-327, CIRC PMP B SUCT CIV-PHASE A [2-M-9], to the OPEN position, **AND**

VERIFY Valve 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

[3] **VERIFY** status lights on Handswitch 2-HS-31-327, CIRC PMP B SUCT CIV-PHASE A, are:

A. Red Light ON, 2-M-9 (Acc Crit)

- B. Green Light OFF, 2-M-9 (Acc Crit)
- [4] **VERIFY** status lights on 2-XX-55-6F, Window 21, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-B), FCV-31-327 [2-M-6], are:

A. Red Light ON, 2-M-6 (Acc Crit)

B. Green Light OFF, 2-M-6 (Acc Crit)

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1.7 2-F Log	2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL, Control Logic (continued)							
		NOTE		·				
he followii 1&TE (stop nethod.	ng step owatch	requires stroke timing both locaes) should be readied and personal terms and personal terms and personal terms	ally and in th onnel should	ne Main Control Room. A d agree on a countdown	.11			
[5]	PL/ CIV	ACE Handswitch 2-HS-31-327, -PHASE A, to the CLOSE posit	CIRC PMP tion, AND	B SUCT				
	RE	CORD:						
	Ч.	Stroke CLOSE time of Valve 2 INSTR RM AHU 2B CWR ISC	2-FCV-31-32)L (local obs	27, INCORE ervation)				
		seconds	M&TE	:				
		Acc Crit: ≤ 10 sec						
	В.	Stroke CLOSE time of Valve 2 INSTR RM AHU 2B CWR ISC	2-FCV-31-32 DL (indication	27, INCORE n lights)				
		seconds	M&TE					
		Acc Crit: ≤ 10 sec						
[6]	VE CW	RIFY Valve 2-FCV-31-327, INC /R ISOL, is CLOSED (local obs	ORE INSTF ervation).	R RM AHU 2B				
[7]	VE B S	RIFY status lights on Handswite SUCT CIV-PHASE A, are:	ch 2-HS-31-	327, CIRC PMP	-			
	Α.	Green Light ON, 2-M-9 (Acc	Crit)					
	В.	Red Light OFF, 2-M-9 (Acc C	rit)					
[8]	VE CO FC	RIFY status lights on 2-XX-55-6 NTAINMENT ISOLATION STA V-31-327, are:	6F, Window TUS PANEI	21, _ (TRAIN-B),				
	Α.	Green Light ON, 2-M-6 (Acc	Crit)					
	В.	Red Light OFF, 2-M-6 (Acc C	rit)					

;

Date _____

6.1.7 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL, Control Logic (continued)

[9] **PLACE** Handswitch 2-HS-31-327, CIRC PMP B SUCT CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL, OPENS (local observation), **THEN**

Date _____

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6.1.8 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, Control Logic

- ENSURE 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL [Inst Rm, EL 716, AZ 105], is CLOSED (local observation).
- [2] **PLACE** Handswitch 2-HS-31-329, CIRC PMP B DISCH CIV-PHASE A [2-M-9], to the OPEN position, **AND**

VERIFY Valve 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

[3] **VERIFY** status lights on Handswitch 2-HS-31-329, CIRC PMP B DISCH CIV-PHASE A, are:

A. Red Light ON, 2-M-9 (Acc Crit)

- B. Green Light OFF, 2-M-9 (Acc Crit)
- [4] **VERIFY** status lights on 2-XX-55-6F, Window 31, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-B), FCV-31-329 [2-M-6], are:

A. Red Light ON, 2-M-6 (Acc Crit)

B. Green Light OFF, 2-M-6 (Acc Crit)

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6.1.8 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, Control Logic (continued)

NOTE The following step requires stroke timing both locally and in the Main Control Room. All M&TE (stopwatches) should be readied and personnel should agree on a countdown method.

[5] **PLACE** Handswitch 2-HS-31-329, CIRC PMP B DISCH CIV-PHASE A, to the CLOSE position, **AND**

RECORD:

A. Stroke CLOSE time of Valve 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL (local observation)

seconds M&TE:

Acc Crit: ≤ 10 sec

B. Stroke CLOSE time of Valve 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL (indication lights)

	seconds	M&TE:
Acc Crit: ≤ 2	10.sec	

- [6] **VERIFY** Valve 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, is CLOSED (local observation).
- [7] **VERIFY** status lights on Handswitch 2-HS-31-329, CIRC PMP B DISCH CIV-PHASE A, are:
 - A. Green Light ON, 2-M-9 (Acc Crit)
 - B. Red Light OFF, 2-M-9 (Acc Crit)
- [8] **VERIFY** status lights on 2-XX-55-6F, Window 31, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-B), FCV-31-329, are:

A. Green Light ON, 2-M-6 (Acc Crit)

B. Red Light OFF, 2-M-6 (Acc Crit)

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6.1.8 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, Control Logic (continued)

[9] **PLACE** Handswitch 2-HS-31-329, CIRC PMP B DISCH CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, OPENS (local observation), **THEN**

Date _____

6.1.9 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, Control Logic

- [1] **ENSURE** 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL [Annulus, EL 738, AZ 105], is CLOSED (local observation).
- [2] **PLACE** Handswitch 2-HS-31-330, CIRC PMP B DISCH CIV-PHASE A [2-M-9], to the OPEN position, **AND**

VERIFY Valve 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, OPENS (local observation), **THEN**

RELEASE to A AUTO.

[3] **VERIFY** status lights on Handswitch 2-HS-31-330, CIRC PMP B DISCH CIV-PHASE A, are:

A. Red Light ON, 2-M-9 (Acc Crit)

- B. Green Light OFF, 2-M-9 (Acc Crit)
- [4] **VERIFY** status lights on 2-XX-55-6E, Window 31, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-A), FCV-31-330 [2-M-6], are:
 - A. Red Light ON, 2-M-6 (Acc Crit)
 - B. Green Light OFF, 2-M-6 (Acc Crit)

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6.1.9 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, Control Logic (continued)

NOTE The following step requires stroke timing both locally and in the Main Control Room. All M&TE (stopwatches) should be readied and personnel should agree on a countdown method. [5] PLACE Handswitch 2-HS-31-330, CIRC PMP B DISCH CIV-PHASE A, to the CLOSE position, AND **RECORD**: Stroke CLOSE time of Valve 2-FCV-31-330, INCORE Α. INSTR RM AHU 2B CWS ISOL (local observation) M&TE: seconds Acc Crit: ≤ 10 sec B. Stroke CLOSE time of Valve 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL (indication lights) seconds M&TE: Acc Crit: ≤ 10 sec [6] VERIFY Valve 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, is CLOSED (local observation). VERIFY status lights on Handswitch 2-HS-31-330, CIRC PMP [7] B DISCH CIV-PHASE A, are: Green Light ON, 2-M-9 (Acc Crit) Α. Red Light OFF, 2-M-9 (Acc Crit) Β.

- [8] **VERIFY** status lights on 2-XX-55-6E, Window 31, CONTAINMENT ISOLATION STATUS PANEL (TRAIN-A), FCV-31-330, are:
 - A. Green Light ON, 2-M-6 (Acc Crit)
 - B. Red Light OFF, 2-M-6 (Acc Crit)

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6.1.9 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, Control Logic (continued)

[9] **PLACE** Handswitch 2-HS-31-330, CIRC PMP B DISCH CIV-PHASE A, to the OPEN position, **AND**

VERIFY 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, OPENS (local observation), THEN

Date _____

6.2 Incore Instrument Room Air Conditioning System Containment Isolation Valves Close on Simulated Phase A Containment Isolation

6.2.1 **Preliminary Actions**

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

CAUTION

Work in Solid State Protection System cabinets 2-R-48 and 2-R-51 involves energized circuits.

NOTE

Subsections 6.2.2 thru 6.2.9 may be performed in any order. Steps within these subsections must be performed in the order written.

WBN Unit 2			Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 49 of 128	
	Data	Pack	Package: Page of Dat		te
6.2.2 2-FC\ Phase		V-31- se A	305, INCORE INSTR RM AHU 2A CWR	ISOL, Simulated	
	[1]	EN: PM	SURE status lights on Handswitch 2-HS- P A SUCT CIV-PHASE A [2-M-9], are:	31-305, CIRC	
		A.	Green Light OFF, 2-M-9		
		В.	Red Light ON, 2-M-9		
	[2]	LIF ⁻	T Wire VBK5 from Terminal Point 8 on T	B 637 in 2-R-51 to	
		3111			1st
					CV
	[3]	VEF A S	RIFY status lights on Handswitch 2-HS-3 UCT CIV-PHASE A, are:	1-305, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Crit)		
		В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[4]	LAI sim	ND Wire VBK5 on Terminal Point 8 on Thur and the second se	B 637 in 2-R-51 to eset.	
		×			1st
					CV
	[5]	VEI A S	RIFY status lights on Handswitch 2-HS-3 UCT CIV-PHASE A, are:	1-305, CIRC PMP	
		⁻ A.	Green Light ON, 2-M-9 (Acc Crit)		
		В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[6]	PL/ CIV	ACE Handswitch 2-HS-31-305, CIRC PM Z-PHASE A, to the OPEN position, AND	1P A SUCT	
		VEI A S Thi	RIFY status lights on Handswitch 2-HS-3 UCT CIV-PHASE A, Green Light OFF ar E N	1-305, CIRC PMP nd Red Light ON,	
		REI	LEASE to A AUTO.		

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l	WBN Unit 2		BNIncore Instrument Room Air2-PTI-031Eit 2Conditioning SystemRev. 0000Page 50 of		2-PTI-031B-01 Rev. 0000 Page 50 of 128		
	Data	Packag	e: Page_	of	-	Da	ite
6.2.3	2-FC Simu	V-31-30 lated P	6, INCORE hase A	E INSTR RM	I AHU 2A CW PU	MP 2A ISOL,	
	[1]	ENSU PMP A	RE status A SUCT CI	lights on Ha V-PHASE A	ndswitch 2-HS-31 [2-M-9], are:	-306, CIRC	
		A. G	reen Light	OFF, 2-M-9	1		
		B. R	ed Light O	N, 2-M-9			
	[2]	LIFT V simula	Vire VBL5	from Termin	al Point 8 on TB 6	637 in 2-R-48 to	
		Cirrata					1st
							CV
	[3]	VERIF A SUC	Y status lig T CIV-PH	ghts on Han ASE A, are:	dswitch 2-HS-31-	306, CIRC PMP	
		A. G	reen Light	ON, 2-M-9	(Acc Crit)		
		B. R	ed Light O	FF, 2-M-9 (Acc Crit)		•
	[4]	LAND simula	Wire VBL te a Phase	5 on Termin e A Containr	al Point 8 on TB 6 nent Isolation rese	37 in 2-R-48 to et.	
							1st
							CV
	[5]	VERIF A SUC	Y status li T CIV-PH	ghts on Han ASE A, are:	dswitch 2-HS-31-	306, CIRC PMP	
		A. G	reen Light	ON, 2-M-9	(Acc Crit)		
		B. R	ed Light O	PFF, 2-M-9 (4	Acc Crit)		
	[6]	PLAC CIV-P	E Handswi HASE A, to	itch 2-HS-31 o the OPEN	-306, CIRC PMP position, AND	A SUCT	
		VERIF A SUC Then	Y status li ଫ CIV-PH	ghts on Han ASE A, Gre	dswitch 2-HS-31- en Light OFF and	306, CIRC PMP Red Light ON,	
		RELE	ASE to A /	AUTO.			<u></u>

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	Data	Date			
6.2.4	2-FC Phas	V-31- e A	-308, INCORE INSTR RM AHU 2A CWS IS	OL, Simulated	
	[1]	EN: PM	SURE status lights on Handswitch 2-HS-31 P A DISCH CIV-PHASE A [2-M-9], are:	-308, CIRC	
		Α.	Green Light OFF, 2-M-9		
		В.	Red Light ON, 2-M-9		
	[2]	LIF	T Wire VBN5 from Terminal Point 10 on TB	637 in 2-R-48	
		10 5	simulate a Phase A Containment Isolation.		1st
					CV
	[3]	VEI A D	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, are:	308, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Crit)		
		В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[4]	LA	ND Wire VBN5 on Terminal Point 10 on TB	637 in 2-R-48 to	D
		5111	Idiale a Fliase A Containment Isolation rese	÷l.	1st
					CV
	[5]	VEI A D	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, are:	308, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Crit)		
		В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[6]	PL/ CIV	ACE Handswitch 2-HS-31-308, CIRC PMP /-PHASE A, to the OPEN position, AND	A DISCH	
		VE A D Th	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, Green Light OFF and EN	308, CIRC PMP I Red Light ON,	
		RE	LEASE to A AUTO.		

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	WBN Unit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 52 of 128			
	Data Package: Page of Date						
6.2.5	2-FC Phas	V-31 e A	-309, INCORE INSTR RM AHU 2A CWS IS	OL, Simulated			
	[1]	EN PM	SURE status lights on Handswitch 2-HS-31 IP A DISCH CIV-PHASE A [2-M-9], are:	-309, CIRC			
		A.	Green Light OFF, 2-M-9				
		В.	Red Light ON, 2-M-9				
	[2]	LIF to s	T Wire VBM5 from Terminal Point 10 on TB simulate a Phase A Containment Isolation.	637 in 2-R-51			
					1st		
					CV		
	[3]	VE A C	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, are:	309, CIRC PMP			
		Α.	Green Light ON, 2-M-9 (Acc Crit)				
		В.	Red Light OFF, 2-M-9 (Acc Crit)				
	[4]	LA	ND Wire VBM5 on Terminal Point 10 on TB	637 in 2-R-51			
		10 8	sinulate a Fhase A Containment isolation re	561.	1st		
					CV		
· .	[5]	VE A D	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, are:	309, CIRC PMP			
		A.	Green Light ON, 2-M-9 (Acc Crit)				
		В.	Red Light OFF, 2-M-9 (Acc Crit)				
	[6]	PL CI\	ACE Handswitch 2-HS-31-309, CIRC PMP /-PHASE A, to the OPEN position, AND	A DISCH			
		VE A [TH	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, Green Light OFF and EN	309, CIRC PMP Red Light ON,	,		
		RE	LEASE to A AUTO.				

	WBN Jnit 2	Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 53 of 128	
	Data	Package: Page of	Da	nte
6.2.6	2-FC Phas	/-31-326, INCORE INSTR RM AHU 2B CV e A	WR ISOL, Simulated	
	[1]	ENSURE status lights on Handswitch 2-H PMP B SUCT CIV-PHASE A [2-M-9], are	HS-31-326, CIRC ::	
		A. Green Light OFF, 2-M-9		
		B. Red Light ON, 2-M-9		
	[2]	LIFT Wire VHG5 from Terminal Point 12 to simulate a Phase A Containment Isolat	on TB 637 in 2-R-48 tion.	
				1st
				CV
	[3]	VERIFY status lights on Handswitch 2-HS B SUCT CIV-PHASE A, are:	S-31-326, CIRC PMP	
		A. Green Light ON, 2-M-9 (Acc Crit)		
		B. Red Light OFF, 2-M-9 (Acc Crit)		
	[4]	LAND Wire VHG5 on Terminal Point 12 of to simulate a Phase A Containment Isolate	on TB 637 in 2-R-48 tion reset.	
				1st
				CV
	[5]	VERIFY status lights on Handswitch 2-HS B SUCT CIV-PHASE A, are:	S-31-326, CIRC PMP	
		A. Green Light ON, 2-M-9 (Acc Crit)		
		B. Red Light OFF, 2-M-9 (Acc Crit)		
	[6]	PLACE Handswitch 2-HS-31-326, CIRC CIV-PHASE A, to the OPEN position, AN	PMP B SUCT ID	
		VERIFY status lights on Handswitch 2-HS B SUCT CIV-PHASE A, Green Light OFF THEN	S-31-326, CIRC PMP ⁻ and Red Light ON,	
		RELEASE to A AUTO.		١

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.2.7	2-FC Phas	V-31 ie A	-327, INCORE INSTR RM AHU 2B CWR	ISOL, Simulated	
	[1]	EN PM	SURE status lights on Handswitch 2-HS- P B SUCT CIV-PHASE A [2-M-9], are:	31-327, CIRC	
		Α.	Green Light OFF, 2-M-9		
		В.	Red Light ON, 2-M-9		
	[2]	LIF	T Wire VHH5 from Terminal Point 12 on	TB 637 in 2-R-51	
		to s	simulate a Phase A Containment Isolation	1.	1st
					CV
	[3]	VE B S	RIFY status lights on Handswitch 2-HS-3 SUCT CIV-PHASE A, are:	1-327, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Crit)	· · · ·	. <u> </u>
		В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[4]	LA to s	ND Wire VHH5 on Terminal Point 12 on simulate a Phase A Containment Isolation	TB 637 in 2-R-51	
					1st
					CV
	[5]	VE B S	RIFY status lights on Handswitch 2-HS-3 SUCT CIV-PHASE A, are:	1-327, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Crit)		
		В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[6]	PL. CI\	ACE Handswitch 2-HS-31-327, CIRC PM /-PHASE A, to the OPEN position, AND	IP B SUCT	
		VE B S TH	RIFY status lights on Handswitch 2-HS-3 SUCT CIV-PHASE A, Green Light OFF ar EN	1-327, CIRC PMP nd Red Light ON,	
		RE	LEASE to A AUTO.		

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	Data	·			
6.2.8	2-FC Phas	V-31 se A	-329, INCORE INSTR RM AHU 2B CWS IS	OL, Simulated	
	[1]	EN PM	SURE status lights on Handswitch 2-HS-31 P B DISCH CIV-PHASE A [2-M-9], are:	-329, CIRC	
		Α.	Green Light OFF, 2-M-9		
		В.	Red Light ON, 2-M-9		
	[2]	LIF	T Wire VHK5 from Terminal Point 2 on TB 6	638 in 2-R-51 to	
		sim	nulate a Phase A Containment Isolation.		1st
					CV
·	[3]	VE B D	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, are:	329, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Crit)		
		В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[4]	LA sim	ND Wire VHK5 on Terminal Point 2 on TB 6 nulate a Phase A Containment Isolation rese	638 in 2-R-51 to et.	 1st
					CV
	[5]	VE B C	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, are:	329, CIRC PMP	
		Α.	Green Light ON, 2-M-9 (Acc Crit)		<u> </u>
	·	В.	Red Light OFF, 2-M-9 (Acc Crit)		
	[6]	PL CI\	ACE Handswitch 2-HS-31-329, CIRC PMP /-PHASE A, to the OPEN position, AND	B DISCH	
		VE B [TH	RIFY status lights on Handswitch 2-HS-31-3 DISCH CIV-PHASE A, Green Light OFF and EN	329, CIRC PMP I Red Light ON,	
		RE	LEASE to A AUTO.		

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6.2.9	2-FC Phas	V-31- se A	-330, INCO	REIN	STR RM /	AHU 2B CW	S ISOL, Simulated	
·	[1]	EN PM	SURE statu IP B DISCH	s light CIV-F	s on Han PHASE A	dswitch 2-HS [2-M-9], are:	S-31-330, CIRC	
		Α.	Green Lig	ht OFI	F, 2-M-9			
		В.	Red Light	ON, 2	2-M-9			
	[2]	LIF	T Wire VHJ	5 from	n Termina	I Point 2 on	TB 638 in 2-R-48 to	
		sim	iulate a Pha	se A (Containm	ent Isolation.		1st
								CV
	[3]	VE B D	RIFY status DISCH CIV-I	lights PHAS	on Hand E A, are:	switch 2-HS-	31-330, CIRC PMP	
		Α.	Green Lig	ht ON	, 2-M-9 (/	Acc Crit)		
		В.	Red Light	OFF,	2-M-9 (A	cc Crit)		
	[4]	LA	ND Wire VH	IJ5 on		Point 2 on 7	B 638 in 2-R-48 to	
		sim	iulate a Pha	se A (Containm	ent isolation	reset.	1st
								CV
	[5]	VE B D	RIFY status	lights PHAS	on Hand E A, are:	switch 2-HS-	31-330, CIRC PMP	
		Α.	Green Lig	ht ON	, 2-M-9 (/	Acc Crit)		
		В.	Red Light	OFF,	2-M-9 (A	cc Crit)		
	[6]	PL. CI\	ACE Hands /-PHASE A	witch to the	2-HS-31- e OPEN p	330, CIRC P osition, AND	MP B DISCH	
		VE B [TH	RIFY status DISCH CIV- EN	lights PHAS	on Hand E A, Gree	switch 2-HS- en Light OFF	-31-330, CIRC PMP and Red Light ON,	
		RE	LEASE to A	AUT	O.			

Date _____

6.3 Incore Instrument Room Air Conditioning System Containment Isolation Valves Close on Loss of Electrical Power

6.3.1 **Preliminary Actions**

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

CAUTION

Work in 125V DC Vital Battery Boards III and IV involves energized circuits.

NOTES

- 1) Subsections 6.3.2 thru 6.3.9 may be performed in any order. Steps within these subsections must be performed in the order written.
- 2) Removal of fuses in this section will disable handswitch indication (Red & Green Lights).
- 3) Each fuse in this section has a blown fuse indicator which must be oriented towards the annunciator circuit.
- 4) While working in 125V DC Vital Battery Boards III and IV, proceed with caution as to not impact U1 structures, systems, or components.

WBN Unit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 58 of 128	
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6.3.2	2-FC Elect	V-31-305, INCORE INSTR RM AHU 2A CWR I trical Power	SOL, Loss of	
	[1]	ENSURE 2-FCV-31-305, INCORE INSTR RM ISOL [Annulus, EL 736, AZ 64], is OPEN (loc	1 AHU 2A CWR al observation).	
	[2]	PULL Fuse 0-FU-236-4/C3, INSTR RM COO VLV [125V DC Vital Batt Bd IV, Ckt C3, EL 75	LANT UNIT A 57 A12/Q], AND	
		VERIFY Valve 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL, CLOSES (local observation) (Acc Crit).		
				1st
				CV
	[3]	INSTALL Fuse 0-FU-236-4/C3, INSTR RM C VLV.	OOLANT UNIT A	
				1st
				CV
	[4]	PLACE Handswitch 2-HS-31-305, CIRC PMF CIV-PHASE A, to the OPEN position, AND	P A SUCT	· ·
		VERIFY status lights on Handswitch 2-HS-31 A SUCT CIV-PHASE A, Green Light OFF and THEN	-305, CIRC PMP d Red Light ON,	
		RELEASE to A AUTO.		

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	WBN Unit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 59 of 128	
	Data	Pacl	kage: Page of	Da	te
6.3.3	2-FC Loss	V-31 of E	-306, INCORE INSTR RM AHU 2A CW PU lectrical Power	MP 2A ISOL,	
	[1]	EN: PU obs	SURE 2-FCV-31-306, INCORE INSTR RM MP 2A ISOL [Inst Rm, EL 716, AZ 60], is O servation).	AHU 2A CW PEN (local	
	[2]	PU VLV	LL Fuse 0-FU-236-3/C3, INSTR RM COOL √ [125V DC Vital Batt Bd III, Ckt C3, EL 757	ANT UNIT A ' A11/Q], AND	
		VE CW	RIFY Valve 2-FCV-31-306, INCORE INSTR / PUMP 2A ISOL, CLOSES (local observati	RM AHU 2A on) (Acc Crit).	1st
					CV
	[3]	INS VLV	STALL Fuse 0-FU-236-3/C3, INSTR RM CC √.	OLANT UNIT A	
					1st
					CV
	[4]	PL/ CIV	ACE Handswitch 2-HS-31-306, CIRC PMP /-PHASE A, to the OPEN position, AND	A SUCT	
		VE A S TH	RIFY status lights on Handswitch 2-HS-31-3 SUCT CIV-PHASE A, Green Light OFF and EN	806, CIRC PMP Red Light ON,	

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	Data	Package: Page	_ of	· [Date
6.3.4	2-FC Elect	/-31-308, INCORE IN rical Power	NSTR RM AHU 2A C	WS ISOL, Loss of	
	[1]	ENSURE 2-FCV-31 ISOL [Inst Rm, EL 7	-308, INCORE INSTI 716, AZ 65], is OPEN	R RM AHU 2A CWS (local observation).	
	[2]	PULL Fuse 0-FU-23 VLV [125V DC Vital	36-3/C4, INSTR RM (I Batt Bd III, Ckt C4], /	COOLANT UNIT A	
		VERIFY Valve 2-FC CWS ISOL, CLOSE	CV-31-308, INCORE I S (local observation)	NSTR RM AHU 2A (Acc Crit).	
					1st
					CV
	[3]	INSTALL Fuse 0-F VLV.	U-236-3/C4, INSTR F	RM COOLANT UNIT A	
					. 1st
					CV
	[4]	PLACE Handswitch CIV-PHASE A, to th	n 2-HS-31-308, CIRC ne OPEN position, AN	PMP A DISCH	
		VERIFY status light A DISCH CIV-PHAS THEN	ts on Handswitch 2-H SE A, Green Light OF	S-31-308, CIRC PMP F and Red Light ON,	

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	Data	Package: Page of	Date _	
6.3.5	2-FC Elect	V-31-309, INCORE INSTR RM AHU 2A CWS trical Power	SISOL, Loss of	·
	[1]	ENSURE 2-FCV-31-309, INCORE INSTR R ISOL [Annulus, EL 737, AZ 65], is OPEN (Ic	M AHU 2A CWS	
	[2]	PULL Fuse 0-FU-236-4/C4, INSTR RM COV VLV [125V DC Vital Batt Bd IV, Ckt C4], AN	OLANT UNIT A	
·		VERIFY Valve 2-FCV-31-309, INCORE INS CWS ISOL, CLOSES (local observation) (A	TR RM AHU 2A .cc Crit).	-
			-	1st
			-	CV
	[3]	INSTALL Fuse 0-FU-236-4/C4, INSTR RM VLV.	COOLANT UNIT A	
		r	-	1st
			-	CV
	[4]	PLACE Handswitch 2-HS-31-309, CIRC PM CIV-PHASE A, to the OPEN position, AND	/IP A DISCH	
		VERIFY status lights on Handswitch 2-HS-3 A DISCH CIV-PHASE A, Green Light OFF a THEN	31-309, CIRC PMP and Red Light ON,	

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	Data	Package: Page of	Date
6.3.6	2-FC Elect	V-31-326, INCORE INSTR RM AHU 2B CWR ISOL, Los trical Power	ss of
	[1]	ENSURE 2-FCV-31-326, INCORE INSTR RM AHU 2B ISOL [Annulus, EL 737, AZ 104], is OPEN (local obser	CWR vation).
	[2]	PULL Fuse 0-FU-236-3/C5, INSTR RM COOLANT UN VLV [125V DC Vital Batt Bd III, Ckt C5], AND	IIT B
		VERIFY Valve 2-FCV-31-326, INCORE INSTR RM AH CWR ISOL, CLOSES (local observation) (Acc Crit).	IU 2B
			1st
			CV
	[3]	INSTALL Fuse 0-FU-236-3/C5, INSTR RM COOLANT VLV.	UNIT B
			1st
			CV
X	[4]	PLACE Handswitch 2-HS-31-326, CIRC PMP B SUCT CIV-PHASE A, to the OPEN position, AND	-
		VERIFY status lights on Handswitch 2-HS-31-326, CIF B SUCT CIV-PHASE A, Green Light OFF and Red Lig THEN	₹C PMP ht ON,

	WBN Unit 2		N Incore Instrument Room Air t 2 Conditioning System		
	Data	Packa	age: Page of	Date	e
6.3.7	2-FC Elect	V-31-3 rical F	27, INCORE INSTR RM AHU 2B CWR IS Power	OL, Loss of	
	[1]	ENS ISOL	URE 2-FCV-31-327, INCORE INSTR RM _ [Inst Rm, EL 716, AZ 104], is OPEN (loca	AHU 2B CWR al observation).	
	[2]	PUL VLV	L Fuse 0-FU-236-4/C5, INSTR RM COOL [125V DC Vital Batt Bd IV, Ckt C5], AND	ANT UNIT B	
		VER CWF	IFY Valve 2-FCV-31-327, INCORE INSTR R ISOL, CLOSES (local observation) (Acc	RM AHU 2B Crit).	
		×			1st
	[3]	INST VLV.	「ALL Fuse 0-FU-236-4/C5, INSTR RM CC	OOLANT UNIT B	
					1st
					CV
	[4]	PLA CIV-	CE Handswitch 2-HS-31-327, CIRC PMP PHASE A, to the OPEN position, AND	B SUCT	
		VER B SL THE	IFY status lights on Handswitch 2-HS-31-3 JCT CIV-PHASE A, Green Light OFF and N	327, CIRC PMP Red Light ON,	

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	Data F	ackage: Page of		Date)
6.3.8	2-FCV Electr	31-329, INCORE INSTR RM AHU cal Power	I 2B CWS IS	OL, Loss of	
	[1]	ENSURE 2-FCV-31-329, INCORE ISOL [Inst Rm, EL 716, AZ 105], is	INSTR RM A OPEN (loca	AHU 2B CWS I observation).	
	[2]	PULL Fuse 0-FU-236-4/C6, INST VLV [125V DC Vital Batt Bd IV, Cl	R RM COOLA kt C6], AND	ANT UNIT B	
		VERIFY Valve 2-FCV-31-329, INC CWS ISOL, CLOSES (local obser	ORE INSTR vation) (Acc (RM AHU 2B Crit)	1st
	[3]	INSTALL Fuse 0-FU-236-4/C6, IN VLV.	ISTR RM CO	OLANT UNIT B	CV 1st
	[4]	PLACE Handswitch 2-HS-31-329, CIV-PHASE A. to the OPEN posit	CIRC PMP I	3 DISCH	CV
		VERIFY status lights on Handswit B DISCH CIV-PHASE A, Green Li THEN	ch 2-HS-31-3 ght OFF and	29, CIRC PMP Red Light ON,	
		RELEASE to A AUTO.			

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	WBN Unit 2	Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 65 of 128	ī
	Data	Package: Page of	Date _	
6.3.9	2-FC Elect	V-31-330, INCORE INSTR RM AHU 2B CW rical Power	S ISOL, Loss of	
	[1]	ENSURE 2-FCV-31-330, INCORE INSTR ISOL [Annulus, EL 738, AZ 105], is OPEN	RM AHU 2B CWS (local observation).	<u>.</u>
	[2]	PULL Fuse 0-FU-236-3/C6, INSTR RM CC VLV [125V DC Vital Batt Bd III, Ckt C6], AM	OLANT UNIT B ID	
		VERIFY Valve 2-FCV-31-330, INCORE IN CWS ISOL, CLOSES (local observation) (A	STR RM AHU 2B Acc Crit).	1st
			-	CV
	[3]	INSTALL Fuse 0-FU-236-3/C6, INSTR RM VLV.	COOLANT UNIT B	
		· .		1st
			-	CV
	[4]	PLACE Handswitch 2-HS-31-330, CIRC P CIV-PHASE A, to the OPEN position, AND	MP B DISCH	
		VERIFY status lights on Handswitch 2-HS- B DISCH CIV-PHASE A, Green Light OFF THEN	31-330, CIRC PMP and Red Light ON,	

Date _____

6.4 Incore Instrument Room Air Conditioning System Containment Isolation Valves Close on Loss of Control Air

6.4.1 **Preliminary Actions**

[1] **VERIFY** prerequisites listed in Section 4.0 for SubSection 6.4 have been completed.

WARNING

Control Air system pressure could be as high as 115 psig. Exercise care while venting Conrol Air at pressure regulators.

NOTE

Subsections 6.4.2 thru 6.4.9 may be performed in any order. Steps within these subsections must be performed in the order written.

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		<u> </u>	

Date _____

6.4.2 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL, Loss of Control Air

- [1] **ENSURE** Valve 2-FCV-31-305, INCORE INSTR RM AHU 2A CWR ISOL [Annulus, EL 736, AZ 64], is OPEN (local observation).
- [2] CLOSE the Control Air Valve 2-ISV-32-3492, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-305 [Annulus, EL 736, AZ 64].
- [3] SLOWLY **OPEN** the petcock on the bottom of Pressure Regulator 2-PREG-31-305, CONTROL AIR PRESSURE REG FOR 2-FCV-31-305 [Annulus, EL 736, AZ 64], **AND**

VERIFY Valve 2-FCV-31-305 INCORE INSTR RM AHU 2A CWR ISOL, CLOSES (local observation) (Acc Crit).

- [4] CLOSE the petcock on the bottom of Pressure Regulator 2-PREG-31-305, CONTROL AIR PRESSURE REG FOR 2-FCV-31-305.
- [5] SLOWLY **OPEN** the Control Air Valve 2-ISV-32-3492, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-305, **AND**

ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-305, CONTROL AIR PRESSURE REG FOR 2-FCV-31-305.

[6] **PLACE** Handswitch 2-HS-31-305, CIRC PMP A SUCT CIV-PHASE A, to the OPEN position, **AND**

> **VERIFY** status lights on Handswitch 2-HS-31-305, CIRC PMP A SUCT CIV-PHASE A, Green Light OFF and Red Light ON, **THEN**

Date ____

6.4.3 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL, Loss of Control Air

- ENSURE Valve 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL [Inst Rm, EL 716, AZ 60], is OPEN (local observation).
- [2] CLOSE the Control Air Valve 2-ISV-32-3637, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-306 [Inst Rm, EL 716, AZ 60].
- [3] SLOWLY **OPEN** the petcock on the bottom of Pressure Regulator 2-PREG-31-306, CONTROL AIR PRESSURE REG FOR 2-FCV-31-306 [Inst Rm, EL 716, AZ 60], **AND**

VERIFY Valve 2-FCV-31-306, INCORE INSTR RM AHU 2A CW PUMP 2A ISOL, CLOSES (local observation) (Acc Crit).

- [4] CLOSE the petcock on the bottom of Pressure Regulator 2-PREG-31-306, CONTROL AIR PRESSURE REG FOR 2-FCV-31-306.
- [5] SLOWLY **OPEN** the Control Air Valve 2-ISV-32-3637, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-306, **AND**

ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-306, CONTROL AIR PRESSURE REG FOR 2-FCV-31-306.

[6] **PLACE** Handswitch 2-HS-31-306, CIRC PMP A SUCT CIV-PHASE A, to the OPEN position, **AND**

> **VERIFY** status lights on Handswitch 2-HS-31-306, CIRC PMP A SUCT CIV-PHASE A, Green Light OFF and Red Light ON, **THEN**

	Data	Package: Page of	Date		
6.4.4	2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL, Loss of Control Air				
	[1]	ENSURE Valve 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL [Inst Rm, EL 716, AZ 65], is OPEN (local observation).	. <u></u> .		
	[2]	CLOSE the Control Air Valve 2-ISV-32-3638, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-308 [Inst Rm, EL 716, AZ 65].			
	[3]	SLOWLY OPEN the petcock on the bottom of Pressure Regulator 2-PREG-31-308, CONTROL AIR PRESSURE REG FOR 2-FCV-31-308 [Inst Rm, EL 716, AZ 65], AND	3		
		VERIFY Valve 2-FCV-31-308, INCORE INSTR RM AHU 2A CWS ISOL, CLOSES (local observation) (Acc Crit).			
	[4]	CLOSE the petcock on the bottom of Pressure Regulator 2-PREG-31-308, CONTROL AIR PRESSURE REC FOR 2-FCV-31-308.	3		
	[5]	SLOWLY OPEN the Control Air Valve 2-ISV-32-3638, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-308, AND			
		ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-308, CONTROL AIR PRESSURE REG FOR 2-FCV-31-308.			
	[6]	PLACE Handswitch 2-HS-31-308, CIRC PMP A DISCH CIV-PHASE A, to the OPEN position, AND			
		VERIFY status lights on Handswitch 2-HS-31-308, CIRC PM A DISCH CIV-PHASE A, Green Light OFF and Red Light ON THEN	P I,		
		RELEASE to A AUTO.			

Date ____

6.4.5 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL, Loss of Control Air

- ENSURE Valve 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL [Annulus, EL 737, AZ 65], is OPEN (local observation).
- [2] CLOSE the Control Air Valve 2-ISV-32-3493, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-309 [Annulus, EL 737, AZ 65].
- [3] SLOWLY OPEN the petcock on the bottom of Pressure Regulator 2-PREG-31-309, CONTROL AIR PRESSURE REG FOR 2-FCV-31-309 [Annulus, EL 737, AZ 65], AND

VERIFY Valve 2-FCV-31-309, INCORE INSTR RM AHU 2A CWS ISOL, CLOSES (local observation) (**Acc Crit**).

- [4] CLOSE the petcock on the bottom of Pressure Regulator 2-PREG-31-309, CONTROL AIR PRESSURE REG FOR 2-FCV-31-309.
- [5] SLOWLY **OPEN** the Control Air Valve 2-ISV-32-3493, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-309, **AND**

ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-309, CONTROL AIR PRESSURE REG FOR 2-FCV-31-309.

[6] **PLACE** Handswitch 2-HS-31-309, CIRC PMP A DISCH CIV-PHASE A, to the OPEN position, **AND**

> **VERIFY** status lights on Handswitch 2-HS-31-309, CIRC PMP A DISCH CIV-PHASE A, Green Light OFF and Red Light ON, **THEN**
Date _

6.4.6 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL, Loss of Control Air

- [1] **ENSURE** Valve 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL [Annulus, EL 737, AZ 104], is OPEN (local observation).
- [2] CLOSE the Control Air Valve 2-ISV-32-3666, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-326 [Annulus, EL 737, AZ 104].
- [3] SLOWLY OPEN the petcock on the bottom of Pressure Regulator 2-PREG-31-326, CONTROL AIR PRESSURE REG FOR 2-FCV-31-326, Annulus, Elev 737, AZ 104, AND

VERIFY Valve 2-FCV-31-326, INCORE INSTR RM AHU 2B CWR ISOL, CLOSES (local observation) (**Acc Crit**).

- [4] CLOSE the petcock on the bottom of Pressure Regulator 2-PREG-31-326, CONTROL AIR PRESSURE REG FOR 2-FCV-31-326.
- [5] SLOWLY **OPEN** the Control Air Valve 2-ISV-32-3666, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-326, **AND**

ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-326, CONTROL AIR PRESSURE REG FOR 2-FCV-31-326.

[6] **PLACE** Handswitch 2-HS-31-326, CIRC PMP B SUCT CIV-PHASE A, to the OPEN position, **AND**

> **VERIFY** status lights on Handswitch 2-HS-31-326, CIRC PMP B SUCT CIV-PHASE A, Green Light OFF- and Red Light ON, **THEN**

Date _____

6.4.7 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL, Loss of Control Air

- [1] **ENSURE** Valve 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL [Inst Rm, EL 716, AZ 104], is OPEN (local observation).
- [2] CLOSE the Control Air Valve 2-ISV-32-3646, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-327 [Inst Rm, EL 716, AZ 104].
- [3] SLOWLY **OPEN** the petcock on the bottom of Pressure Regulator 2-PREG-31-327, CONTROL AIR PRESSURE REG FOR 2-FCV-31-327 [Inst Rm, EL 716, AZ 104], **AND**

VERIFY Valve 2-FCV-31-327, INCORE INSTR RM AHU 2B CWR ISOL, CLOSES (local observation) (**Acc Crit**).

- [4] CLOSE the petcock on the bottom of Pressure Regulator 2-PREG-31-327, CONTROL AIR PRESSURE REG FOR 2-FCV-31-327.
- [5] SLOWLY **OPEN** the Control Air Valve 2-ISV-32-3646, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-327, **AND**

ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-327, CONTROL AIR PRESSURE REG FOR 2-FCV-31-327.

[6] **PLACE** Handswitch 2-HS-31-327, CIRC PMP B SUCT CIV-PHASE A, to the OPEN position, **AND**

> **VERIFY** status lights on Handswitch 2-HS-31-327, CIRC PMP B SUCT CIV-PHASE A, Green Light OFF and Red Light ON, **THEN**

Date ____

6.4.8 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, Loss of Control Air

- ENSURE Valve 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL [Inst Rm, EL 716, AZ 105], is OPEN (local observation).
- [2] CLOSE the Control Air Valve 2-ISV-32-3647, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-329 [Inst Rm, EL 716, AZ 105].
- [3] SLOWLY **OPEN** the petcock on the bottom of Pressure Regulator 2-PREG-31-329, CONTROL AIR PRESSURE REG FOR 2-FCV-31-329 [Inst Rm, EL 716, AZ 105], **AND**

VERIFY Valve 2-FCV-31-329, INCORE INSTR RM AHU 2B CWS ISOL, CLOSES (local observation) (**Acc Crit**).

- [4] **CLOSE** the petcock on the bottom of Pressure Regulator 2-PREG-31-329, CONTROL AIR PRESSURE REG FOR 2-FCV-31-329.
- [5] SLOWLY **OPEN** the Control Air Valve 2-ISV-32-3647, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-329, **AND**

ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-329, CONTROL AIR PRESSURE REG FOR 2-FCV-31-329.

[6] **PLACE** Handswitch 2-HS-31-329, CIRC PMP B DISCH CIV-PHASE A, to the OPEN position, **AND**

> **VERIFY** status lights on Handswitch 2-HS-31-329, CIRC PMP B DISCH CIV-PHASE A, Green Light OFF and Red Light ON, **THEN**

Date _____

6.4.9 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, Loss of Control Air

- ENSURE Valve 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL [Annulus, EL 738, AZ 105], is OPEN (local observation).
- [2] CLOSE the Control Air Valve 2-ISV-32-3667, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-330 [Annulus, EL 738, AZ 105].
- [3] SLOWLY OPEN the petcock on the bottom of Pressure Regulator 2-PREG-31-330, CONTROL AIR PRESSURE REG FOR 2-FCV-31-330 [Annulus, EL 738, AZ 105], AND

VERIFY Valve 2-FCV-31-330, INCORE INSTR RM AHU 2B CWS ISOL, CLOSES (local observation) (**Acc Crit**).

- [4] CLOSE the petcock on the bottom of Pressure Regulator 2-PREG-31-330, CONTROL AIR PRESSURE REG FOR 2-FCV-31-330.
- [5] SLOWLY **OPEN** the Control Air Valve 2-ISV-32-3667, CONTROL AIR ISOLATION VALVE TO 2-FCV-31-330, **AND**

ENSURE there is no leakage from the petcock on the bottom of Pressure Regulator 2-PREG-31-330, CONTROL AIR PRESSURE REG FOR 2-FCV-31-330.

[6] **PLACE** Handswitch 2-HS-31-330, CIRC PMP B DISCH CIV-PHASE A, to the OPEN position, **AND**

> **VERIFY** status lights on Handswitch 2-HS-31-330, CIRC PMP B DISCH CIV-PHASE A, Green Light OFF and Red Light ON, **THEN**

Date _____

6.5 Incore Instrument Room 2A/2B Pump and Air Handling Unit Local Operation

6.5.1 **Preliminary Actions**

[1] **VERIFY** prerequisites listed in Section 4.0 for SubSection 6.5 have been completed.

NOTE

- 1) Electrical power to Incore Instrument Room Chillers 2A and 2B was disconnected in Step 4.3[3] to prevent excessive chiller cycling.
- 2) Equipment status is to be visually verified from the field location.
- 3) Train A and Train B subsections may be performed in any order as shown in the flow diagram below:



Pump and Air Handling Unit testing for each respective Train must be completed before performing Temperature Control Valve testing for that Train. Steps within each subsection must be performed in the order written.

Date ____

6.5.2 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, Local Operation

 PRESS and HOLD START pushbutton on Handswitch
 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A [Pen Rm, EL 692, Col A12W], in 2–JB–292–835, AND

VERIFY:

- A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A [Pen Rm, EL 692, Col A12W], STARTS.
- B. Status light on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, Red Light ON.
- C. Status light on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, Green Light OFF.
- [2] **PRESS** and **HOLD** STOP pushbutton on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, **AND**

VERIFY:

- A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS.
- B. Status light on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, Green Light ON.
- C. Status light on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, Red Light OFF.
- [3] **RELEASE** STOP pushbutton on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, **AND**

VERIFY Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STARTS.

[4] **RELEASE** START pushbutton on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, **AND**

VERIFY Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS.

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6.5.2 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, Local Operation (continued)

[5] **VERIFY** successful completion of this Subsection 6.5.2. (ACC CRIT)

Date _____

6.5.3 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, Local Operation

PRESS and HOLD START pushbutton on Handswitch
 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B
 [Pen Rm, EL 692, Col A12W], in 2–JB–292–835, AND

VERIFY:

- A. Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B [Pen Rm, EL 692, Col A12W], STARTS.
- B. Status light on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, Red Light ON.
- C. Status light on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, Green Light OFF.
- [2] **PRESS** and **HOLD** STOP pushbutton on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, **AND**

VERIFY:

- A. Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, STOPS.
- B. Status light on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, Green Light ON.
- C. Status light on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, Red Light OFF.
- [3] **RELEASE** STOP pushbutton on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, **AND**

VERIFY Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, STARTS.

[4] **RELEASE** START pushbutton on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, **AND**

> **VERIFY** Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, STOPS.

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6.5.3 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, Local Operation (continued)

[5] **VERIFY** successful completion of this Subsection 6.5.3. (ACC CRIT)

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Date _____

6.5.4 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, Local Operation

	NOTE	
The electrical AIR HANDLIN	circuit for Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT IG UNIT 2A, contains a 50 second Time Delay Relay.	ROOM
[1]	PRESS and HOLD START pushbutton on Handswitch 2-HS-31-265B, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A [Inst Rm, EL 730, AZ 57], in 2-JB-293-806, AND	·
	VERIFY Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A [Inst Rm, EL 730, AZ 57], STARTS.	
[2]	PRESS and HOLD STOP pushbutton on Handswitch 2-HS-31-265B, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, AND	
	VERIFY Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, STOPS.	,
[3]	RELEASE STOP pushbutton on Handswitch 2-HS-31-265B, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, AND	
	VERIFY Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, STARTS.	
[4]	RELEASE START pushbutton on Handswitch 2-HS-31-265B, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, AND	کر
	VERIFY Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, STOPS.	
[5]	ENSURE Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, air flow measurement has been performed using GTM-05, AND	
	ATTACH completed GTM-05 data sheets.	

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6.5.4 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, Local Operation (continued)

[6] **RECORD** the air flow measurement below:

CFM

Acc Crit: 5,200 CFM (min. 4,680)

AND

VERIFY the air flow measurement meets acceptance criteria.

[7] **VERIFY** successful completion of this Subsection 6.5.4. (ACC CRIT)

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Date _____

2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING 6.5.5 UNIT 2B, Local Operation

	NOTE	
The electrica AIR HANDLII	l circuit for Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT NG UNIT 2B, contains a 50 second Time Delay Relay.	ROOM
[1]	PRESS and HOLD START pushbutton on Handswitch 2-HS-31-266B, INCORE INSTRUMENT ROOM CHILLER 2B [Inst Rm, EL 730, AZ 112], in 2–JB–293–804, AND	
	VERIFY Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B [Inst Rm, EL 730, AZ 112], STARTS.	
[2]	PRESS and HOLD STOP pushbutton on Handswitch 2-HS-31-266B, INCORE INSTRUMENT ROOM CHILLER 2B, AND	
	VERIFY Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, STOPS.	
[3]	RELEASE STOP pushbutton on Handswitch 2-HS-31-266B, INCORE INSTRUMENT ROOM CHILLER 2B, AND	
	VERIFY Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, STARTS.	
[4]	RELEASE START pushbutton on Handswitch 2-HS-31-266B, INCORE INSTRUMENT ROOM CHILLER 2B, AND	
	VERIFY Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, STOPS.	
[5]	ENSURE Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, air flow measurement has been performed using GTM-05, AND	
	ATTACH completed GTM-05 data sheets.	

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6.5.5 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, Local Operation (continued)

[6] **RECORD** the air flow measurement below:

CFM

Acc Crit: 5,200 CFM (min. 4,680)

AND

VERIFY the air flow measurement meets acceptance criteria.

[7] **VERIFY** successful completion of this Subsection 6.5.5. (ACC CRIT)

Date _____

6.5.6 2-TCV-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, Operation

		NOTE	
The de	etermina	ation of position for three-way Temperature Control Valves is:	
•	"O" i	indicates OPEN (air applied and spring retracted), or full flow through bypas	SS.
•	"S" i	indicates SHUT (air off and spring extended), or full flow through cooling coi	il.
	[1]	PRESS START pushbutton on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A [Pen Rm, EL 692, Col A12W], in 2-JB-292-835, AND	
		VERIFY Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A [Pen Rm, EL 692, Col A12W], STARTS.	
	[2]	APPLY heat to the Temperature Indicating Controller 2-TIC-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL [Inst Rm, EL 730, AZ 70], sensing bulb with a heat gun.	
	[3]	WHEN Valve 2-TCV-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL [Inst Rm, EL 730, AZ 70], moves fully to the "S" position, THEN	
		STOP applying heat to the Temperature Indicating Controller 2-TIC-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, sensing bulb.	
	[4]	COOL the Temperature Indicating Controller 2-TIC-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, sensing bulb with an ice bath.	
	[5]	WHEN Valve 2-TCV-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, moves fully to the "O" position, THEN	
		REMOVE the ice bath.	-
	[6]	APPLY heat to the Temperature Indicating Controller 2-TIC-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, sensing bulb with a heat gun.	

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6.5.6 2-TCV-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, Operation (continued)

[7] WHEN Valve 2-TCV-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, moves AWAY from the "O" position, allowing normal coil flow, THEN

STOP applying heat to the Temperature Indicating Controller 2-TIC-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, sensing bulb.

[8] **PRESS** STOP pushbutton on Handswitch 2-HS-31-303, INCORE INSTR ROOM CW PUMP 2A, **AND**

VERIFY Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS.

[9] **VERIFY** successful completion of this Subsection 6.5.6. (ACC CRIT)

Date _____

6.5.7 2-TCV-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, Operation

NOTE The determination of position for three-way Temperature Control Valves is: "O" indicates OPEN (air applied and spring retracted), or full flow through bypass. "S" indicates SHUT (air off and spring extended), or full flow through cooling coil. PRESS START pushbutton on Handswitch 2-HS-31-324, [1] INCORE INSTRUMENT ROOM CW PUMP 2B [Pen Rm, EL 692, Col A12W], in 2-JB-292-835, AND VERIFY Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B [Pen Rm, EL 692, Col A12W], STARTS. **APPLY** heat to the Temperature Indicating Controller [2] 2-TIC-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL [Inst Rm, EL 731, AZ 116], sensing bulb with a heat gun. [3] WHEN Valve 2-TCV-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL [Inst Rm, EL 731, AZ 116], moves fully to the "S" position, THEN **STOP** applying heat to the Temperature Indicating Controller 2-TIC-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, sensing bulb. [4] **COOL** the Temperature Indicating Controller 2-TIC-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, sensing bulb with an ice bath. WHEN Valve 2-TCV-31-328 INCORE INSTR RM AHU 2B CW [5] TEMP CONTROL, moves fully to the "O" position, THEN **REMOVE** the ice bath. **APPLY** heat to the Temperature Indicating Controller [6] 2-TIC-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, sensing bulb with a heat gun.

Date _____

6.5.7 2-TCV-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, Operation (continued)

[7] WHEN Valve 2-TCV-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, moves AWAY from the "O" position, allowing normal coil flow, THEN

STOP applying heat to the Temperature Indicating Controller 2-TIC-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, sensing bulb.

[8] **PRESS** STOP pushbutton on Handswitch 2-HS-31-324, INCORE INSTRUMENT ROOM CW PUMP 2B, **AND**

> **VERIFY** Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, STOPS.

[9] **VERIFY** successful completion of this Subsection 6.5.7. (ACC CRIT)

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6.6 Incore Instrument Room 2A/2B Air Handling Unit, Pump, Chiller, and Damper Normal Operation

6.6.1 **Preliminary Actions**

[1] **VERIFY** prerequisites listed in Section 4.0 for SubSection 6.6 have been completed.

NOTES

- 1) Subsections 6.6.2 and 6.6.3 may be performed in any order. Steps within these subsections must be performed in the order written.
- 2) Equipment status is to be visually verified from the field location.
 - [2] **PLACE** the following breakers in CLOSED:
 - A. Breaker 2-BKR-31-303B, INCORE INSTR RM CHLR 2A COMPR (2-COMP-303/2) [480V Rx MOV Bd 2A1-A, Compt 16F2, EL 772 A12/T]
 - B. Breaker 2-BKR-31-324B, INSTR RM A/C COMPR 2B (2-COMP-31-324/2) [480V Rx MOV Bd 2B1-B, Compt 17F2, EL 772 A12/T]
 - [3] **ENSURE** the following valves are CLOSED:
 - A. Valve 2-TCV-67-115, INSTR RM WATER CLR 2A ERCW SUP TEMP CNTL [Pen Rm, EL 692, Col A12W]
 - B. Valve 2-TCV-67-118, INSTR RM WATER CLR 2B ERCW SUP TEMP CNTL [Pen Rm, EL 692, Col A12W]

Date _____

6.6.2 Incore Instrument Room 2A Air Handling Unit, Pump, Chiller, and Damper Normal Operation

 INSTALL ultrasonic flowmeter onto 2 inch chilled water piping (Schedule 40 carbon steel, 2.38 inch OD, 0.15 inch wall thickness) immediately downstream of 2-CHR-31-303, INCORE INSTR ROOM CHILLER 2A [Pen Rm, EL 692, Col A12W].

NOTES

- Temperature Indicating Controller 2-TIC-31-307, INCORE INSTR RM AHU 2A CW TEMP CNTL, sensing bulb is to be kept above 85°F to indirectly maintain chiller operation throughout the performance of this section.
 - Use heat guns as needed to maintain temperature.
 - Use pocket thermometer as needed to verify temperature.
- 2) The electrical circuit for Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, contains a 50 second Time Delay Relay.

NOTE

During the performance of Steps 6.6.2[2] and 6.6.2[3] visual observation of transient and steady state vibrations is required.

PLACE Handswitch 2-HS-31-265A, INCORE INST RM A/C A SW [2-M-9], to START, AND

VERIFY Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A [Inst Rm, EL 730, AZ 57], STARTS, **AND**

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2 Inco Dam	re Ins per N	strument Room 2A Air Handling Unit, F Iormal Operation (continued)	Pump, Chiller, and
[3]	VE	RIFY:	
•	Α.	Pump 2-PMP-31-303/1, INCORE INST PUMP 2A [Pen Rm, EL 692, Col A12W	R ROOM CW], STARTS
	Β.	Compressor 2-COMP-31-303B, INCOR CHILLER A COMPRESSOR [Pen Rm, A12W], STARTS.	E INSTR RM EL 692, Col
	C.	Damper 2-FCO-31-263, INCORE INST DISCHARGE [Inst Rm, EL 730, AZ 57],	R RM AHU 2A , is OPEN.
	D.	Damper 2-FCO-31-264, INCORE INST DISCHARGE [Inst Rm, EL 730, AZ 57],	R RM AHU 2A , is OPEN.
	E.	Valve 2-TCV-67-115, INSTR RM WATE SUP TEMP CNTL [Pen Rm, EL 692, Co OPEN.	ER CLR 2A ERCW ol A12W], is
	F.	Red Light ON, at Breaker 2-BKR-31-26 RM COOLER FAN 2A (2-MTR-31-265) 2A1-A, Compt 16A].	5, INCORE INSTR [480V Rx MOV Bd
	G.	Red Light ON, at Breaker 2-BKR-31-30 INSTR RM CW PMP 2A (2-PMP-31-30 MOV Bd 2A1-A, Compt 18C].	3A, INCORE 3/1) [480V Rx
	Н.	Red Light ON, at Handswitch 2-HS-31- INST RM A/C A SW.	265A, INCORE
	I.	Green Light OFF, at Handswitch 2-HS- INST RM A/C A SW.	31-265A, INCORE
	J. ,	Red Light ON, Status Indication Windov INCORE INST RM A/C ISOL DMPR ST	w, 2-XI-31-263, FATUS [2-M-9].
	K.	Green Light OFF, Status Indication Wir INCORE INST RM A/C ISOL DMPR ST	ndow, 2-XI-31-263, FATUS.
	L.	Red Light ON, Status Indication Window INCORE INST RM A/C ISOL DMPR ST	w, 2-XI-31-264, FATUS [2-M-9].
	M,	Green Light OFF, Status Indication Wir INCORE INST RM A/C ISOL DMPR S	ndow, 2-XI-31-264, FATUS.

.

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6.6.2 Incore Instrument Room 2A Air Handling Unit, Pump, Chiller, and Damper Normal Operation (continued)

- [4] **WAIT** approximately 15 minutes before performing next step.
- [5] **RECORD** the chilled water flow rate from the ultrasonic flow meter:

GPM

Acc Crit: min. 22 GPM

AND

VERIFY the chilled water flow rate meets acceptance criteria.

[6] **RECORD** chilled water inlet/return temperature setpoint from local control panel of 2-CHR-31-303, INCORE INSTR ROOM CHILLER 2A:

Inlet/Return °F Temp. Setpoint

- [7] RAISE chilled water inlet/return temperature setpoint on local control panel of 2-CHR-31-303, INCORE INSTR ROOM CHILLER 2A, ABOVE current chilled water inlet/return temperature UNTIL Compressor 2-COMP-31-303B, INCORE INSTR RM CHILLER A COMPRESSOR, STOPS.
- [8] **WAIT** approximately 15 minutes before performing next step.
- [9] **RETURN** chilled water inlet/return temperature setpoint on local control panel of 2-CHR-31-303, INCORE INSTR ROOM CHILLER 2A, to the setpoint recorded in Step 6.6.2[6].
- [10] **VERIFY** Compressor 2-COMP-31-303B, INCORE INSTR RM CHILLER A COMPRESSOR, STARTS.

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6.6.2 Incore Instrument Room 2A Air Handling Unit, Pump, Chiller, and Damper Normal Operation (continued)

		NOTE	
During the pervision of	erforn requi	nance of Step 6.6.2[11] visual observation of transient and steady sta red.	te
[11]	PL/ SW	ACE Handswitch 2-HS-31-265A, INCORE INST RM A/C A /, to STOP (PULL TO LOCK), AND	
	VE	RIFY:	
	Α.	Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, STOPS.	
	В.	Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS.	
	C.	Compressor 2-COMP-31-303B, INCORE INSTR RM CHILLER A COMPRESSOR, STOPS.	
	D.	Damper 2-FCO-31-263, INCORE INSTR RM AHU 2A DISCHARGE, CLOSES.	
	E.	Damper 2-FCO-31-264, INCORE INSTR RM AHU 2A DISCHARGE, CLOSES.	
	F.	Valve 2-TCV-67-115, INSTR RM WATER CLR 2A ERCW SUP TEMP CNTL, CLOSES.	
	G.	Red Light OFF, at Breaker 2-BKR-31-265, INCORE INSTR RM COOLER FAN 2A (2-MTR-31-265).	
	H.	Red Light OFF, at Breaker 2-BKR-31-303A, INCORE INSTR RM CW PMP 2A (2-PMP-31-303/1).	
	I.	Green Light ON, at Handswitch 2-HS-31-265A, INCORE INST RM A/C A SW.	
	J.	Red Light OFF, at Handswitch 2-HS-31-265A, INCORE INST RM A/C A SW.	
	K.	Green Light ON, Status Indication Window, 2-XI-31-263, INCORE INST RM A/C ISOL DMPR STATUS.	

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	Data	Pack	age: Page of		Date
6.6.2	Incor Dami	e Ins oer N	trument Room 2A Air Handling Unit ormal Operation (continued)	, Pump, Chiller, an	d
		L.	Red Light OFF, Status Indication Win INCORE INST RM A/C ISOL DMPR	dow, 2-XI-31-263, STATUS.	
		Μ.	Green Light ON, Status Indication Wi INCORE INST RM A/C ISOL DMPR	ndow, 2-XI-31-264, STATUS.	
		N.	Red Light OFF, Status Indication Win INCORE INST RM A/C ISOL DMPR	dow, 2-XI-31-264, STATUS.	
	[12]	VEF com sub:	RIFY no excessive vibration of the pipin ponents associated with the performa section was observed.	ng system and nce of this	
	[13]	REN imm RO(MOVE ultrasonic flowmeter from 2 inch nediately downstream of 2-CHR-31-30 OM CHILLER 2A.	n chilled water piping 3, INCORE INSTR	I
	[14]	VEF (AC	RIFY successful completion of this Sub	esection 6.6.2.	
			• •	J	

Date

6.6.3 Incore Instrument Room 2B Air Handling Unit, Pump, Chiller, and Damper Normal Operation

 INSTALL ultrasonic flowmeter onto 2 inch chilled water piping (Schedule 40 carbon steel, 2.38 inch OD, 0.15 inch wall thickness) immediately downstream of 2-CHR-31-324, INCORE INSTRUMENT ROOM CHILLER 2B [Pen Rm, EL 692, Col A12W].

NOTES

- Temperature Indicating Controller 2-TIC-31-328, INCORE INSTR RM AHU 2B CW TEMP CONTROL, sensing bulb is to be kept above 85°F to indirectly maintain chiller operation throughout the performance of this section.
 - Use heat guns as needed to maintain temperature.
 - Use pocket thermometer as needed to verify temperature.
- 2) The electrical circuit for Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, contains a 50 second Time Delay Relay.

NOTE

During the performance of Steps 6.6.3[2] and 6.6.3[3] visual observation of transient and steady state vibrations is required.

[2] PLACE Handswitch 2-HS-31-266A, INCORE INST RM A/C B SW [2-M-9], to START, AND

> **VERIFY** Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B [Inst Rm, EL 730, AZ 112], STARTS, **AND**

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6.6.3	Inco Dam	Incore Instrument Room 2B Air Handling Unit, Pump, Chiller, and Damper Normal Operation (continued)			
·	[3]	VEI	RIFY:		`
		Α.	Pump 2-PMP-31-324/1, INCORE INSTI CW PUMP 2B [Pen Rm, EL 692, Col A	RUMENT ROOM 12W], STARTS.	
·		В.	Compressor 2-COMP-31-324B, INCOR CHILLER B COMPRESSOR [Pen Rm, A12W], STARTS.	E INSTR RM EL 692, Col	
		C.	Damper 2-FCO-31-268, INCORE INST DISCHARGE [Inst Rm, EL 730, AZ 112	R RM AHU 2B 2], is OPEN	
		D.	Damper 2-FCO-31-269, INCORE INST DISCHARGE [Inst Rm, EL 730, AZ 112	R RM AHU 2B 2], is OPEN.	
		E.	Valve 2-TCV-67-118, INSTR RM WATE SUP TEMP CNTL [Pen Rm, EL 692, Co OPEN.	ER CLR 2B ERCW ol A12W], is	
		F.	Red Light ON, at Breaker 2-BKR-31-26 RM AHU 2B (2-AHU-31-266-B) [480V F Compt 16A].	6, INCORE INSTR Rx MOV Bd 2B1-B, 	
·		G.	Red Light ON, at Breaker 2-BKR-31-32 INSTR RM CW PMP 2B (2-MTR-31-32 MOV Bd 2B1-B, Compt 18C].	4A, INCORE 4/1) [480V Rx 	
		н.	Red Light ON, at Handswitch 2-HS-31- INST RM A/C B SW.	266A, INCORE	
		I.	Green Light OFF, at Handswitch 2-HS- INST RM A/C B SW.	31-266A, INCORE	
		J.	Red Light ON, Status Indication Windov INCORE INST RM A/C ISOL DMPR ST	w, 2-XI-31-268, FATUS [2-M-9].	
		К.	Green Light OFF, Status Indication Wir INCORE INST RM A/C ISOL DMPR ST	ndow, 2-XI-31-268, FATUS	
		L.	Red Light ON, Status Indication Windov INCORE INST RM A/C ISOL DMPR ST	w, 2-XI-31-269, FATUS [2-M-9].	
		M.	Green Light OFF, Status Indication Wir INCORE INST RM A/C ISOL DMPR ST	ndow, 2-XI-31-269, FATUS.	

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6.6.3 Incore Instrument Room 2B Air Handling Unit, Pump, Chiller, and Damper Normal Operation (continued)

- [4] **WAIT** approximately 15 minutes before performing next step.
- [5] **RECORD** the chilled water flow rate from the ultrasonic flow meter:

GPM

Acc Crit: min. 22 GPM

AND

VERIFY the chilled water flow rate meets acceptance criteria.

[6] **RECORD** chilled water inlet/return temperature setpoint from local control panel of 2-CHR-31-324, INCORE INSTRUMENT ROOM CHILLER 2B:

Inlet/Return Temp. Setpoint

٥F

- [7] **RAISE** chilled water inlet/return temperature setpoint on local control panel of 2-CHR-31-324, INCORE INSTRUMENT ROOM CHILLER 2B, ABOVE current chilled water inlet/return temperature **UNTIL** Compressor 2-COMP-31-324B, INCORE INSTR RM CHILLER B COMPRESSOR, STOPS.
- [8] **WAIT** approximately 15 minutes before performing next step.
- [9] **RETURN** chilled water inlet/return temperature setpoint on local control panel of 2-CHR-31-324, INCORE INSTRUMENT ROOM CHILLER 2B, to the setpoint recorded in Step 6.6.3[6].
- [10] **VERIFY** Compressor 2-COMP-31-324B, INCORE INSTR RM CHILLER B COMPRESSOR, STARTS.

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6.6.3 Incore Instrument Room 2B Air Handling Unit, Pump, Chiller, and Damper Normal Operation (continued)

NOTE During the performance of Step 6.6.3[11] visual observation of transient and steady state vibrations is required. PLACE Handswitch 2-HS-31-266A, INCORE INST RM A/C B [11] SW, to STOP (PULL TO LOCK), AND VERIFY: Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT Α. ROOM AIR HANDLING UNIT 2B, STOPS. B. Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, STOPS. C. Compressor 2-COMP-31-324B, INCORE INSTR RM CHILLER B COMPRESSOR, STOPS. D. Damper 2-FCO-31-268, INCORE INSTR RM AHU 2B DISCHARGE, CLOSES. E. Damper 2-FCO-31-269, INCORE INSTR RM AHU 2B DISCHARGE, CLOSES. F. Valve 2-TCV-67-118, INSTR RM WATER CLR 2B ERCW SUP TEMP CNTL, CLOSES. G. Red Light ON, at Breaker 2-BKR-31-266, INCORE INSTR RM AHU 2B (2-AHU-31-266-B). Red Light ON, at Breaker 2-BKR-31-324A, INCORE H. INSTR RM CW PMP 2B (2-MTR-31-324/1). Green Light ON, at Handswitch 2-HS-31-266A, INCORE 1. INST RM A/C B SW. Red Light OFF, at Handswitch 2-HS-31-266A, INCORE J. INST RM A/C B SW. K. Green Light ON, Status Indication Window, 2-XI-31-268, INCORE INST RM A/C ISOL DMPR STATUS.

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6.6.3	Incore Dampe	nstrument Room 2B Air Handling Un r Normal Operation (continued)	it, Pump, Chiller, and	l ·
	I	Red Light OFF, Status Indication Wi INCORE INST RM A/C ISOL DMPF	indow, 2-XI-31-268, ₹ STATUS.	
		 Green Light ON, Status Indication V INCORE INST RM A/C ISOL DMPF 	Vindow, 2-XI-31-269, ₹ STATUS.	
	. I	 Red Light OFF, Status Indication W INCORE INST RM A/C ISOL DMPF 	indow, 2-XI-31-269, R STATUS.	
	[12]	/ERIFY no excessive vibration of the pip components associated with the perform subsection was observed.	bing system and nance of this	
	[13]	REMOVE ultrasonic flowmeter from 2 incomediately downstream of 2-CHR-31-3 NSTRUMENT ROOM CHILLER 2B.	ch chilled water piping 24, INCORE	

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· · ·

Date

6.7 Incore Instrument Room 2A/2B Air Handling Unit Stop on Simulated Phase A Containment Isolation

6.7.1 Preliminary Actions

[1] **VERIFY** prerequisites listed in Section 4.0 for SubSection 6.7 have been completed.

CAUTION

Work in Solid State Protection System cabinets 2-R-48 and 2-R-51 involves energized circuits.

NOTES

- 1) Subsections 6.7.2 and 6.7.3 may be performed in any order. Steps within these subsections must be performed in the order written.
- 2) Equipment status is to be visually verified from the field location.

6.7.2 Incore Instrument Room 2A Air Handling Unit Stop on Simulated Phase A Containment Isolation

[1] **PLACE** Handswitch 2-HS-31-265A, INCORE INST RM A/C A SW [2-M-9], to START, **AND**

VERIFY Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A [Inst Rm, EL 730, AZ 57], STARTS, **AND**

RELEASE to A AUTO.

- [2] VERIFY:
 - A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW ⁺ PUMP 2A [Pen Rm, EL 692, Col A12W], STARTS.
 - B. Damper 2-FCO-31-263, INCORE INSTR RM AHU 2A DISCHARGE [Inst Rm, EL 730, AZ 57], is OPEN.
 - C. Damper 2-FCO-31-264, INCORE INSTR RM AHU 2A DISCHARGE [Inst Rm, EL 730, AZ 57], is OPEN.
- [3] **LIFT** Wire 16A6 from Terminal Point 6 on TB 612 in 2-R-48 [U2 Aux Inst Room] to simulate a Phase A Containment Isolation.

1st

CV

Date

[4] **VERIFY**:

- A. Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A, STOPS.
- B. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS.
- C. Damper 2-FCO-31-263, INCORE INSTR RM AHU 2A DISCHARGE, CLOSES.
- D. Damper 2-FCO-31-264, INCORE INSTR RM AHU 2A DISCHARGE, CLOSES.

W Ur	WBN Unit 2		Incore Instrument Room Air Conditioning System		ir	2-PTI-031B-01 Rev. 0000 Page 101 of 128			
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7.2	Incor Phase	e Instrument Room 2A Air Handling Unit Stop on Simulated e A Containment Isolation (continued)							
	[5] LAND Wire 16A6 on Terminal Point 6 on TB simulate a Phase A Containment Isolation res				on TB 61 tion rese	2 in 2-R-48 to t.			
							1st		
							CV		
	[6]	VE	RIFY:						
		Α.	Air Handling U ROOM AIR HA	Init 2-AHU-31-265, I ANDLING UNIT 2A,	NCORE is OFF.	INSTRUMENT			
	-	В.	Pump 2-PMP- PUMP 2A, is 0	31-303/1, INCORE DFF.	INSTR F	ROOM CW			
		C.	Damper 2-FC0 DISCHARGE,	O-31-263, INCORE is CLOSED.	INSTR F	RM AHU 2A			
		D	Damper 2-FC0 DISCHARGE,	O-31-264, INCORE is CLOSED.	INSTR F	RM AHU 2A			
	[7]	PL/ SW	ACE Handswitcl /, to START, AN	h 2-HS-31-265A, IN ID	CORE II	NST RM A/C A			
		VE INS AN	RIFY Air Handlin STRUMENT RO D	ng Unit 2-AHU-31-2 OM AIR HANDLING	65, INC(3 UNIT 2	DRE A, STARTS,			
		RE	LEASE to A AU	ITO.		· .			
	[8]	VE	RIFY:				-		
		A.	Pump 2-PMP- PUMP 2A, ST,	31-303/1, INCORE ARTS.	INSTR F	ROOM CW			
		В.	Damper 2-FC0 DISCHARGE,	O-31-263, INCORE is OPEN.	INSTR F	RM AHU 2A			
		C.	Damper 2-FC DISCHARGE,	O-31-264, INCORE is OPEN.	INSTR F	RM AHU 2A			

l	WBN Unit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 102 of 128		
	Data	Pack	age: Page of	Date		
6.7.2	Incor Phas	e Ins e A (strument Room 2A Air Handling Unit S Containment Isolation (continued)	nit Stop on Simulated		
	[9] PLACE Handswitch 2-HS-31-265A, IN SW, to STOP (PULL TO LOCK), AND VERIFY :		ACE Handswitch 2-HS-31-265A, INCORI , to STOP (PULL TO LOCK), AND	E INST RM A/C A		
			RIFY:			
		A.	Air Handling Unit 2-AHU-31-265, INCO ROOM AIR HANDLING UNIT 2A, STO	RE INSTRUMENT		
		В.	Pump 2-PMP-31-303/1, INCORE INST PUMP 2A, STOPS.	R ROOM CW		
		C.	Damper 2-FCO-31-263, INCORE INST DISCHARGE, CLOSES.	R RM AHU 2A		
		D.	Damper 2-FCO-31-264, INCORE INST DISCHARGE, CLOSES.	R RM AHU 2A		
	[10]	VE (AC	RIFY successful completion of this Subse CC CRIT)	ection 6.7.2.		

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l	WBN Jnit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 103 of 128	
	Data	Pack	age: Page of	Da	te
6.7.3	Incor Phas	e Ins e A C	strument Room 2B Air Handling Unit S Containment Isolation	top on Simulated	· .
	[1]	PL/ SW	ACE Handswitch 2-HS-31-266A, INCOR [2-M-9], to START, AND	E INST RM A/C B	
	· .	VEI INS 730	RIFY Air Handling Unit 2-AHU-31-266, IN TRUMENT ROOM AIR HANDLING UNI), AZ 112], STARTS, AND	ICORE T 2B [Inst Rm, EL	
		RE	LEASE to A AUTO.		
	[2]	VEI	RIFY:		·
		A.	Pump 2-PMP-31-324/1, INCORE INST CW PUMP 2B [Pen Rm, EL 692, Col A	RUMENT ROOM 12W], STARTS.	
		В.	Damper 2-FCO-31-268, INCORE INST DISCHARGE [Inst Rm, EL 730, AZ 112	R RM AHU 2B 2], is OPEN.	
		C.	Damper 2-FCO-31-269, INCORE INST DISCHARGE [Inst Rm, EL 730, AZ 112	R RM AHU 2B 2], is OPEN	
	[3]	LIF [U2	T Wire 16A6 from Terminal Point 6 on T Aux Inst Room] to simulate a Phase A (B 612 in 2-R-51 Containment	,
		1301			1st
					CV
	[4]	VE	RIFY:		
		A.	Air Handling Unit 2-AHU-31-266, INCC ROOM AIR HANDLING UNIT 2B, STO	RE INSTRUMENT PS.	
		В.	Pump 2-PMP-31-324/1, INCORE INST CW PUMP 2B, STOPS.	RUMENT ROOM	
		C.	Damper 2-FCO-31-268, INCORE INST DISCHARGE, CLOSES.	R RM AHU 2B	
	i	D.	Damper 2-FCO-31-269, INCORE INST DISCHARGE, CLOSES.	R RM AHU 2B	

WBN Unit 2			Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 104 of 128					
	Data	Pack	age: Page of	Date	 ,				
6.7.3	Incore Instrument Room 2B Air Handling Unit Stop on Simulated Phase A Containment Isolation (continued)								
	[5]	LAI sim	ND Wire 16A6 on Terminal Point 6 on TE	3 612 in 2-R-51 to eset					
		CIIII			1st				
					CV				
	[6]	VEI	RIFY:						
		A	Air Handling Unit 2-AHU-31-266, INCO ROOM AIR HANDLING UNIT 2B, is OI	RE INSTRUMENT F.					
		В.	Pump 2-PMP-31-324/1, INCORE INST CW PUMP 2B, is OFF.	RUMENT ROOM					
		C.	Damper 2-FCO-31-268, INCORE INST DISCHARGE, is CLOSED.	R RM AHU 2B	-				
		D.	Damper 2-FCO-31-269, INCORE INST DISCHARGE, is CLOSED.	R RM AHU 2B					
	[7]	PL/ SW	ACE Handswitch 2-HS-31-266A, INCOR /, to START, AND	E INST RM A/C B					
		VEI INS AN	RIFY Air Handling Unit 2-AHU-31-266, II STRUMENT ROOM AIR HANDLING UNI D	NCORE T 2B, STARTS,					
		RE	LEASE to A AUTO.						
	[8]	VE	RIFY:						
		A.	Pump 2-PMP-31-324/1, INCORE INST CW PUMP 2B, STARTS.	RUMENT ROOM					
		В.	Damper 2-FCO-31-268, INCORE INST DISCHARGE, is OPEN.	R RM AHU 2B					
		C.	Damper 2-FCO-31-269, INCORE INST DISCHARGE, is OPEN.	R RM AHU 2B					

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	WBN Unit 2		Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 105 of 128		
	Data	Pack	age: Page of	Dat	e	
6.7.3	Incor Phas	Incore Instrument Room 2B Air Handling Unit Stop on Simulated Phase A Containment Isolation (continued)				
	[9]	PL/ SW	ACE Handswitch 2-HS-31-266A, INCORE , to STOP (PULL TO LOCK), AND	INST RM A/C B		
		VE	RIFY:			
		Α.	Air Handling Unit 2-AHU-31-266, INCOF ROOM AIR HANDLING UNIT 2B, STOP	RE INSTRUMENT PS.		
		В.	Pump 2-PMP-31-324/1, INCORE INSTR CW PUMP 2B, STOPS	RUMENT ROOM	•	
		C.	Damper 2-FCO-31-268, INCORE INSTF DISCHARGE, CLOSES.	R RM AHU 2B		
		D.	Damper 2-FCO-31-269, INCORE INSTR DISCHARGE, CLOSES.	R RM AHU 2B		
	[10]	VE (AC	RIFY successful completion of this Subsec CC CRIT)	ction 6.7.3.		

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Date

6.8 Incore Instrument Room Redundant Unit Start on Low Air Flow

- [1] **VERIFY** prerequisites listed in Section 4.0 for SubSection 6.8 have been completed.
- PLACE Handswitch 2-HS-31-265A, INCORE INST RM A/C A SW [2-M-9], to START, AND

VERIFY status lights on Handswitch 2-HS-31-265A, INCORE INST RM A/C A SW, Green Light OFF and Red Light ON, **THEN**

RELEASE to A AUTO.

- [3] **ENSURE** Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B [Inst Rm, EL 730, AZ 112], is OFF (local observation).
- [4] **VERIFY** Annunciator Window 2-XA-55-5C/103-E, INSTR RM COOLER A/B FLOW LO, is CLEAR.

NOTE

In the following step, if difficulties are encountered, the Air Handling Unit should be STOPPED immediately.

[5] COMPLETELY COVER air inlet to Fan 2-FAN-31-265, INCORE INSTR RM AHU 2A FAN, Incore Inst Rm, Elev 730, AZ 57, with cardboard, AND

VERIFY:

- A. Air Handling Unit 2-AHU-31-266, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2B, STARTS (local observation).
- B. Annunciator Window 2-XA-55-5C/103-E, INSTR RM COOLER A/B FLOW LO, ALARMS.
- C. Unit 2 Alarm Events Display Screen indicates 103-E INSTR RM COOLER A/B FLOW LO (FS-31-263) is in ALARM (Red).
| WBN
Unit 2 | | | Incore Instrument Room Air
Conditioning System | 2-PTI-031B-01
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|---------------|--------------|-----------------|---|---|
| Data Pac | | | age: Page of | Date |
| 8 | Inco
(con | re Ins
tinue | strument Room Redundant Unit Start o
d) | on Low Air Flow |
| | [6] | RE | MOVE cardboard from air inlet installed ir | n Step 6.8[5]. |
| | [7] | VE | RIFY: | |
| | | A. | Annunciator Window 2-XA-55-5C/103-E
COOLER A/B FLOW LO, CLEARS. | , INSTR RM |
| | | В. | Unit 2 Alarm Events Display Screen ind
INSTR RM COOLER A/B FLOW LO (FS
NORMAL (Green). | icates 103-E,
S-31-263), is
 |
| | [8] | PL/
SW | ACE Handswitch 2-HS-31-265A, INCORE
/, to STOP, AND | E INST RM A/C A |
| | | VE
INS
TH | RIFY status lights on Handswitch 2-HS-3
ST RM A/C A SW, Green Light ON and Re
EN | 1-265A, INCORE
ed Light OFF, |
| | | RE | LEASE to A AUTO. | i |
| | [9] | VE
CO | RIFY Annunciator Window 2-XA-55-5C/1
OLER A/B FLOW LO, is CLEAR. | 03-E, INSTR RM |
| | | | NOTE | |

In the following step, if difficulties are encountered, the Air Handling Unit should be STOPPED immediately.

[10] COMPLETELY **COVER** air inlet to Fan 2-FAN-31-266, INCORE INSTR RM AHU 2B FAN, Incore Inst Rm, Elev 730, AZ 112, with cardboard, **AND**

VERIFY:

- A. Air Handling Unit 2-AHU-31-265, INCORE INSTRUMENT ROOM AIR HANDLING UNIT 2A [Inst Rm, EL 730, AZ 57], STARTS (local observation).
- B. Annunciator Window 2-XA-55-5C/103-E, INST RM COOLER A/B FLOW LO, ALARMS.

Data	Раск	age: Page	of	Date
Incor (cont	re Ins tinued	trument Roo d)	om Redundant Unit	t Start on Low Air Flow
	C.	Unit 2 Alarn RM COOLE (Red).	n Events Display Sci ER A/B FLOW LO (F	reen indicates 103-E INST S-31-263) is in ALARM
[11]	RE	MOVE cardb	oard from air inlet in	stalled in Step 6.8[10].
[12]	VEF	RIFY:		
	A.	Annunciator COOLER A	r Window 2-XA-55-5 VB FLOW LO, CLEA	C/103-E, INST RM ∖RS.
	В.	Unit 2 Alarn INSTR RM NORMAL (0	n Events Display Sci COOLER A/B FLOV Green).	reen indicates 103-E V LO (FS-31-263) is in
[13]	PL / SW	ACE Handsw [2-M-9], to S	vitch, 2-HS-31-266A, STOP (PULL TO LO	, INCORE INST RM A/C B CK), AND
	VEF INS	RIFY status li T RM A/C B	ights on Handswitch SW, Green Light Of	2-HS-31-266A, INCORE N and Red Light OFF.
[14]	PLA SW	ACE Handsw , to STOP (P	vitch 2-HS-31-265A, PULL TO LOCK), AN	INCORE INST RM A/C A
	VEF INS	RIFY status li ST RM A/C A	ights on Handswitch SW, Green Light Of	2-HS-31-265A, INCORE N and Red Light OFF.
[15]	VEF (AC	RIFY success	sful completion of thi	is Subsection 6.8.

Data Package: Page _____ of _____

Date

6.9 Incore Instrument Room 2A/2B Circulation Pump Trip on Low Tank Level

6.9.1 **Preliminary Actions**

[1] **VERIFY** prerequisites listed in Section 4.0 for SubSection 6.9 have been completed.

CAUTION

Work in 2-JB-292-835 involves energized circuits.

6.9.2	Inco Leve	Incore Instrument Room Circulation Pump 2A Trip on Low Tank Level									
	[1]	ENSURE 2-LG-31-304, INCORE INSTRUMENT ROOM SURGE TANK 2A LEVEL [Pen Rm, EL 692, Col A12W], indicates 75-100% full.									
	[2]	INSTALL jumper at terminal block TA, across wire numbers 18CX and 18CLS2, in 2-JB-292-835 [Pen Rm, EL 692, Col A12W], to simulate the air handling unit fan starting.	1st								
			CV								
4. ¹	[3]	VERIFY 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A [Pen Rm, EL 692, Col A12W], STARTS.									
	[4]	VERIFY Annunciator Window 2-XA-55-5C/104-E, INSTR RM COOLING SURGE TANK A/B LEVEL LO, is CLEAR.	<u>. </u>								
	[5]	CLOSE the following valves:									
		A. 2-RTV-31-1102A, 2-LS-31-303 ROOT [Pen Rm, EL 692, Col A12W]									
		 B. 2-RTV-31-1103A, 2-LS-31-303 ROOT [Pen Rm, EL 692, Col A12W] 									

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	Data	Package: Page of	Date
6.9.2	incor Level	e Instrument Room Circulation Pump 2A Trip on Low Tank I (continued)	C
	[6]	DISCONNECT the top test port connection between 2-RTV-31-1102A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A [Pen Rm, EL 692, Col A12W]	
			1st
			CV
		NOTES	
1) 5 ii 2) [2 p	During the During the LG-31 Dump op Dump sh	1.2[7] requires a 5 gallon bucket to capture drain water from Levent lines. The performance of Steps 6.9.2[7] and 6.9.2[8], moniter Level G -304, INCORE INSTRUMENT ROOM SURGE TANK 2A LEVE peration under dry conditions. If the level gauge indicates less hould be STOPPED immediately.	auge L, to prevent than 25%, the
	[7]		
		DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line).	
		DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line).	1st
• .		DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line).	1st CV
•	[8]	DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line).	1st CV
• .	[8]	 DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line). VERIFY: A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS. 	1st CV
•	[8]	 DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line). VERIFY: A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS. B. Annunciator Window, 2-XA-55-5C/104-E, INSTR RM COOLING SURGE TANK A/B LEVEL LO, ALARMS. 	1st
• •	[8]	 DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line). VERIFY: A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS. B. Annunciator Window, 2-XA-55-5C/104-E, INSTR RM COOLING SURGE TANK A/B LEVEL LO, ALARMS. C. Unit 2 Alarm Events Display Screen indicates 104-E INSTR RM COOLING SURGE TANK A LEVEL LO (LS-31-303) is in ALARM (Red). 	1st
•	[8]	 DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line). VERIFY: A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS. B. Annunciator Window, 2-XA-55-5C/104-E, INSTR RM COOLING SURGE TANK A/B LEVEL LO, ALARMS. C. Unit 2 Alarm Events Display Screen indicates 104-E INSTR RM COOLING SURGE TANK A/B LEVEL LO, ALARMS. C. Unit 2 Alarm Events Display Screen indicates 104-E INSTR RM COOLING SURGE TANK A/B LEVEL LO (LS-31-303) is in ALARM (Red). REMOVE jumper from terminal block TA, across wire numbers 18CX and 18CLS2, in 2-JB-292-835, to simulate th air handling unit fan stopping. 	- 1st - ⊂V
•	[8]	 DISCONNECT the bottom test port connection between 2-RTV-31-1103A, 2-LS-31-303 ROOT, and 2-LS-31-303, INCORE INSTR ROOM SURGE TANK 2A, (to drain line). VERIFY: A. Pump 2-PMP-31-303/1, INCORE INSTR ROOM CW PUMP 2A, STOPS. B. Annunciator Window, 2-XA-55-5C/104-E, INSTR RM COOLING SURGE TANK A/B LEVEL LO, ALARMS. C. Unit 2 Alarm Events Display Screen indicates 104-E INSTR RM COOLING SURGE TANK A/B LEVEL LO (LS-31-303) is in ALARM (Red). REMOVE jumper from terminal block TA, across wire numbers 18CX and 18CLS2, in 2-JB-292-835, to simulate th air handling unit fan stopping. 	

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	WBN Jnit 2	Incore Cor	Instrument Room Air nditioning System	2-PTI-031B-01 Rev. 0000 Page 111 of 128	
	Data F	Package: Page _	of	Da	ite
5.9.2	Incore Instrument Room Circulation Pump 2A Trip on Low Tank Level (continued)				
·	[10]	RECONNECT the	e following:		
		A. Bottom test p 2-LS-31-303	Dort connection between 2 ROOT, and 2-LS-31-303,	2-RTV-31-1103A, , INCORE INSTR	
					1st
				,	CV
		B. Top test port 2-LS-31-303	CONNECTION DETWEEN 2-R ROOT, and 2-LS-31-303, GE TANK 24	TV-31-1102A, , INCORE INSTR	
					1st
					CV
	[11]	OPEN 2-RTV-31-	-1102A, 2-LS-31-303 ROC	DT.	
	[12]	SLOWLY OPEN 2-LS-31-303, INC	2-RTV-31-1103A, 2-LS-31 CORE INSTR ROOM SUR	I-303 ROOT, to refill GE TANK 2A.	
	[13]	ENSURE 2-LG-3 SURGE TANK 2/	1-304, INCORE INSTRUM A LEVEL, indicates 75 - 10	/IENT ROOM 00% full.	
	[14]	VERIFY the follow	wing:		
		A. Annunciator COOLING S	Window, 2-XA-55-5C/104 URGE TANK A/B LEVEL	-E, INSTR RM LO, CLEARS.	
		B. Unit 2 Alarm INSTR RM ((LS-31-303)	Events Display Screen in COOLING SURGE TANK , is NORMAL (Green).	dicates 104-E A LEVEL LO	
	[15]	VERIFY success (ACC CRIT)	ful completion of this Subs	section 6.9.2.	

	Data	Package: Page of Dat	te							
6.9.3	Incore Instrument Room Circulation Pump 2B Trip on Low Tank Level									
	[1]	ENSURE 2-LG-31-325, INCORE INSTRUMENT ROOM SURGE TANK 2B LEVEL [Pen Rm, EL 692, Col A12W] indicates 75-100% full.								
	[2]	INSTALL jumper at terminal block TB, across wire numbers 18CX and 18CLS2, in 2-JB-292-835, to simulate the air handling unit fan starting.								
			1st							
			CV							
	[3]	VERIFY 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B [Pen Rm, EL 692, Col A12W], STARTS.								
	[4]	VERIFY Annunciator Window, 2-XA-55-5C/104-E, INSTR RM COOLING SURGE TANK A/B LEVEL LO, is CLEAR.								
	[5]	CLOSE the following valves:								
	·	A. 2-RTV-31-1112, INCORE INST RM CHILL B SURG TK LEVEL [Pen Rm, EL 692, Col A12W]								
		 B. 2-RTV-31-1113A, 2-LS-31-324 ROOT [Pen Rm, EL 692, Col A12W] 								
	[6]	DISCONNECT the top test port connection between 2-RTV-31-1112, INCORE INST RM CHILL B SURG TK LEVEL, and 2-LS-31-324, INCORE INSTRUMENT ROOM SURGE TANK 2B LEVEL [Pen Rm, EL 692, Col A12W]								
			1st							
			CV							

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Date ____

6.9.3 Incore Instrument Room Circulation Pump 2B Trip on Low Tank Level (continued)

	NOTES					
1)) Step 6.9.3[7] requires a 5 gallon bucket to capture drain water from Level Switch instrument lines.					
2)	During the performance of Steps 6.9.3[7] and 6.9.3[8], moniter Level Gauge 2-LG-31-304, INCORE INSTRUMENT ROOM SURGE TANK 2A LEVEL, to prevent pump operation under dry conditions. If the level gauge indicates less than 25%, the pump should be STOPPED immediately.					
	[7] DISCONNECT the bottom test port connection between 2-RTV-31-1113A, 2-LS-31-324 ROOT, and 2-LS-31-324, INCORE INSTRUMENT ROOM SURGE TANK 2B LEVEL. (to					

	ara	in line).	
		,	1st
			CV
[8]	VE	RIFY:	
	Α.	Pump 2-PMP-31-324/1, INCORE INSTRUMENT ROOM CW PUMP 2B, STOPS.	
	В.	Annunciator Window, 2-XA-55-5C/104-E, INSTR RM COOLING SURGE TANK A/B LEVEL LO, ALARMS.	
	C.	Unit 2 Alarm Events Display Screen indicates 104-E INST RM COOLING SURGE TANK B LEVEL LO (LS-31-324) is in ALARM (Red).	
[9]	RE nur	MOVE jumper from terminal block TB, across wire nbers 18CX and 18CLS2, in 2-JB-292-835, to simulate the bandling unit fan stopping	
	GI		1st
		·	CV

WBN Unit 2			Incore Instrument Room Air Conditioning System	2-PTI-031B-01 Rev. 0000 Page 114 of 128	
	Data	Pacl	kage: Page of	Dat	e
6.9.3	Incor Level	ore Instrument Room Circulation Pump 2B Trip on Low Tank el (continued)			
	[10]	RE	CONNECT the following:		• •
	·	A.	Bottom test port connection between 2- 2-LS-31-324 ROOT, and 2-LS-31-324,	RTV-31-1113A, INCORE	
			INSTRUMENT ROOM SURGE TAINEZ		1st
					CV
		В.	Top test port connection between 2-RT INCORE INST RM CHILL B SURG TK and 2-LS-31-324, INCORE INSTRUME SURGE TANK 2B EVEL	V-31-1112, LEVEL, NT ROOM	
				•	1st
					CV
	[11]	OP LE	EN 2-RTV-31-1112, INCORE INST RM (VEL ISOL VLV.	CHILL B SURG TK	
	[12]	SL 2-L 2B	OWLY OPEN 2-RTV-31-1113A, 2-LS-31- .S-31-324, INCORE INSTRUMENT ROO LEVEL.	324 ROOT, to refill M SURGE TANK	·
	[13]	EN Su	SURE 2-LG-31-325, INCORE INSTRUM RGE TANK 2B LEVEL, indicates 75 - 10	ENT ROOM 0% full.	
	[14]	VE	RIFY the following:		
·		A.	Annunciator Window, 2-XA-55-5C/104- COOLING SURGE TANK A/B LEVEL L	E, INSTR RM _O, CLEARS.	
		В.	Unit 2 Alarm Events Display Screen inc INSTR RM COOLING SURGE TANK E (LS-31-324) is NORMAL (Green).	licates 104-E 3 LEVEL LO	_
	[15]	VE	RIFY successful completion of this Subse	ection 6.9.3.	

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7.0 POST PERFORMANCE ACTIVITY

NOTE

Steps 7.0[1] and 7.0[2] may be identified as NA if the respective condition does not apply to this test.

[1] **VERIFY** that post-test calibration of the M&TE used to record quantitative acceptance criteria has been satisfactorily performed, **AND**

RECORD the results on Measuring and Test Equipment Log, Appendix E in SMP-9.0

[2] **VERIFY** that post-test calibration of permanent plant instruments used to record quantitative acceptance criteria has been satisfactorily performed (as required), **AND**

RECORD the results on Appendix C, Permanent Plant Instrumentation Log.

[3] **NOTIFY** the Unit 2 US/SRO of the test completion and system alignment.

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)
SMP-9.0			
FSAR			
SubSection 6.2.4			
Table 6.2.4-1, Pgs 38-39			
SubSection 9.2.1 and 9.4.7			
Table 14.2-1, Sheets 4/5, 38/39, and 83			
WBN2-30RB-4002	,		
WBN2-67-4002			
WBNP Tech Specs, Unit 2, SubSection 3.6.3		× ·	
2-SOI-30.04			
2-TSD-31B-01			
2-TSD-88-05			
G-37			
2-PTI-067-03			

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	FORMED RETURNED TO N	
No.		Step No.	Performed By/Date CV By/Date	Step No.	Returned By/Date CV By/Date
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WBN	Incore Instrument Room Air	2-PTI-031B-01
Unit 2	Conditioning System	Rev. 0000

Appendix C (Page 1 of 1)

PERMANENT PLANT INSTRUMENTATION LOG

Data Package: Page ____ of ____

1

Date ____

INSTRUMENT OR		FILLED AND VENTED ¹	PLACED IN SERVICE ¹	USED FOR QUANTITATIVE ACC CRIT			POST-TEST CALIBRATION ACCEPTABLE ²
LOOP #	CAL DUE DATE	INIT/DATE	INIT/DATE	YES	NO	DATE ²	INIT/DATE ²
2-TIC-31-307		х.			х	NA	NA
2-FS-31-263					х	NA	NA
2-LS-31-303					х	NA	NA
2-TIC-31-328					. X	NA	NA
2-FS-31-268					X	NA	NA
2-LS-31-324					х	NA	NA
	······						
	•						

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 (NA).

² May be identified as NA if instrument was NOT used to verify/record quantitative acceptance criteria data.

Table 1 (Page 1 of 2)

ELECTRICAL LINEUP

Data Package: Page ____ of ____

COMPONENT COMPONENT COMP. VERIFIED **COMPONENT LOCATION IDENTIFICATION** NOMENCLATURE POSITION **BY INITIAL** INCORE INSTR RM AHU 2A Unit 2 480V RX MOV BD 2A1-A, 2-BKR-31-265-A CLOSED (2-AHU-31-265) Compt. 16A INCORE INSTR RM CW Unit 2 480V RX MOV BD 2A1-A, CLOSED 2-BKR-31-303A-A PMP 2A (2-PMP-31-303/1) Compt. 18C **INCORE INSTR RM CHLR** Unit 2 480V RX MOV BD 2A1-A, 2-BKR-31-303B-A **OPEN** 2A COMPR (2-COMP-303/2) Compt. 16F2 INCORE INSTR RM AHU 2B Unit 2 480V RX MOV BD 2B1-B, 2-BKR-31-266-B CLOSED (2-AHU-31-266) Compt. 16A INCORE INSTR RM CW Unit 2 480V RX MOV BD 2B1-B. CLOSED 2-BKR-31-324A-B PMP 2B (2-PMP-31-324/1) Compt. 18C **INSTR RM A/C COMPR 2B** Unit 2 480V RX MOV BD 2B1-B, 2-BKR-31-324B-B OPEN Compt. 17F2 (2-COMP-31-324/2) 120V AC Vital Inst Power Bd 2-I AUX RELAY RACK 2-R-76 2-BKR-235-1/07-D CLOSED BUS A Bkr 7 120V AC Vital Inst Power Bd 2-I **SYS 31 TR A ASSOCIATED** 2-BKR-235-1/19-D CLOSED FLOW SWITCHES Bkr 19 AUX RELAY RACK 2-R-76 120V AC Vital Inst Power Bd 2-II 2-BKR-235-2/06-E CLOSED BUS B Bkr 6 SYS 31 TR B ASSOCIATED 120V AC Vital Inst Power Bd 2-II 2-BRK-235-2/14-E CLOSED FLOW SWITCHES Bkr 14 INSTR RM COOLANT UNIT 125V VITAL BATT BD III, CKT# 0-FU-236-3/C3 INSTALLED A VLV C/3 **INSTRUMENT ROOM** 125V VITAL BATT BD III, CKT# **INSTALLED** 0-FU-236-3/C4 COOLANT UNIT A VLV C/4 INSTRUMENT ROOM 125V VITAL BATT BD III, CKT# 0-FU-236-3/C5 INSTALLED COOLANT UNIT B VLV C/5 125V VITAL BATT BD III, CKT# **INSTRUMENT ROOM** 0-FU-236-3/C6 INSTALLED COOLANT UNIT B VLV C/6

Date

Table 1 (Page 2 of 2) ELECTRICAL LINEUP

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Data Package: Page _____ of _____

COMPONENT IDENTIFICATION	COMPONENT NOMENCLATURE	COMPONENT LOCATION	COMP. POSITION	VERIFIED BY INITIAL
0-FU-236-4/C3	INSTR RM COOLANT UNIT A VLV	125V VITAL BATT BD IV, CKT# C/3	INSTALLED	
0-FU-236-4/C4	INSTR RM COOLANT UNIT A VLV	125V VITAL BATT BD IV, CKT# C/4	INSTALLED	
0-FU-236-4/C5	INSTR RM COOLANT UNIT B VLV	125V VITAL BATT BD IV, CKT# C/5	INSTALLED	
0-FU-236-4/C6	INSTR RM COOLANT UNIT B VLV	125V VITAL BATT BD IV, CKT# C/6	INSTALLED	

Table 2 (Page 1 of 6)

VALVE LINEUP

Date _____

Data Package: Page ____ of ____

VALVE NUMBER	VALVE NOMENCLATURE	VALVE LOCATION	VALVE POSITION	VERIFIED BY INITIALS
	TRAIN A			
2-DRV-31-3422	INCORE INSTR RM CW AIR SEPARATOR 2A DRAIN	692 A12W	CLOSED	
2-DRV-31-3981	INCORE INSTR ROOM SURGE TANK 2A DRAIN	692 A12W	CLOSED	
2-VTV-31-3426	INCORE INSTR ROOM SURGE TANK 2A VENT	692 A12W	CLOSED	
2-RTV-31-3977A	2-LG-31-304 ROOT	692 A12W	OPEN	
2-RTV-31-3978A	2-LG-31-304 ROOT	692 A12W	OPEN	
2-RTV-31-1102A	2-LS-31-303 ROOT	692 A12W	OPEN	
2-RTV-31-1103A	2-LS-31-303 ROOT	692 A12W	OPEN	
2-ISV-31-3425	INCORE INSTR RM CHLR 2ACW MU CHECK	692 A12W	CLOSED	
2-VTV-31-3423	INCORE INSTR ROOM AIR SEPARATOR 2A VENT	692 A12W	CLOSED	
2-ISV-31-3427	INCORE INSTR ROOM CW PUMP 2A SUCTION	692 A12W	OPEN	
2-RTV-31-1101A	2-PI-31-302 ROOT	692 A12W	OPEN	
2-DRV-31-3428	INCORE INSTR ROOM CW PUMP 2A DRAIN	692 A12W	CLOSED	
2-RTV-31-1100A	2-PI-31-301 ROOT	692 A12W	OPEN	
2-ISV-31-3430	INCORE INSTR ROOM CW PUMP 2A DISCHARGE	692 A12W	OPEN	
2-VTV-31-3441	INCORE INSTR RM CHLR 2ACW IN VENT	692 A12W	CLOSED	
2-ISV-31-3431	INCORE INSTR ROOM CHLR 2A CW IN ISOL	692 A12W	OPEN	
2-RTV-31-3432A	INCORE INSTR RM CHLR 2ACW PRESS TEST	692 A12W	CLOSED	

Table 2 (Page 2 of 6) VALVE LINEUP

Data Package: Page _____ of _____

VALVE NUMBER	VALVE NOMENCLATURE	VALVE LOCATION	VALVE POSITION	VERIFIED BY INITIALS
2-DRV-31-3414	INCORE INSTR RM CHLR 2ACW DRAIN	692 A12W	CLOSED	
2-RTV-31-1104A	2-PI-31-313 ROOT	692 A12W	OPEN	
2-ISV-31-3413	INCORE INSTR RM CHLR 2ACW OUT ISOL	692 A12W	OPEN	
2-RTV-31-3999A	2-FIS-31-311 ROOT	692 A12W	OPEN	
2-RTV-31-4000A	2-FIS-31-311 ROOT	692 A12W	OPEN	
2-FCV-31-305	INCORE INSTR RM AHU 2A CWR ISOL	OC 730 AZ 70	CLOSED	
2-VTV-31-3440	INCORE INSTR RM AHU 2A CWR VENT	OC 737 Q4	CLOSED	
2-FCV-31-309	INCORE INSTR RM AHU 2A CWS ISOL	OC 730 AZ 70	CLOSED	
2-VTV-31-3446	INCORE INSTR RM AHU 2A CWS VENT	OC 737 Q4	CLOSED	
2-FCV-31-306	INCORE INSTR RM AHU 2A CW PUMP 2A ISOL	730 AZ 70	CLOSED	
2-TV-31-3451	INCORE INSTR RM AHU 2A CWR TEST VENT	716 AZ 120	CLOSED	
2-VTV-31-3435	INCORE INSTR RM AHU 2A CWR VENT	716 AZ 120	CLOSED	
2-DRV-31-3447	INCORE INSTR RM AHU 2A CWR DRAIN	716 AZ 119	CLOSED	
2-BYV-31-3416	INCORE INSTR RM AHU 2A CW BYPASS	716 AZ 119	OPEN	
2-ISV-31-3417	INCORE INSTR RM AHU 2A CW TCV-31-307 U/S ISOL	716 AZ 119	OPEN	
2-BYV-31-3418	INCORE INSTR RM AHU 2A CW TCV-31-307 BYPASS	716 AZ 122	CLOSED	
2-ISV-31-3419	INCORE INSTR RM AHU 2A CW TCV-31-307 D/S ISOL	716 AZ 121	OPEN	

Table 2 (Page 3 of 6) VALVE LINEUP

Data Package: Page ____ of ____

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VALVE NUMBER	VALVE NOMENCLATURE	VALVE LOCATION	VALVE POSITION	VERIFIED BY INITIALS
2-TCV-31-307	INCORE INSTR RM AHU 2A CW TEMP CNTL	730 AZ 70	OPERABLE	
2-FCV-31-308	INCORE INSTR RM AHU 2A CWS ISOL	730 AZ 70	CLOSED	
2-TV-31-3450	INCORE INSTR RM AHU 2A CWS TEST VENT	716 AZ 120	CLOSED	
2-VTV-31-3436	INCORE INSTR RM AHU 2A CWS VENT	716 AZ 120	CLOSED	
2-DRV-31-3445	INCORE INSTR RM AHU 2A CWS DRAIN	716 AZ 118	CLOSED	
2-DRV-31-3404	INCORE INSTR RM AHU 2A CWS DRAIN	716 AZ 120	CLOSED	
2-ISV-31-3405	INCORE INSTR RM AHU 2A CWS ISOL	716 AZ 119	OPEN	
	TRAIN B			
2-DRV-31-3393	INCORE INSTR ROOM AIR SEPARATOR 2B DRAIN	692 A12W	CLOSED	
2-DRV-31-3982	INCORE INSTR ROOM SURGE TANK 2B DRAIN	692 A12W	CLOSED	
2-VTV-31-3397	INCORE INSTR ROOM SURGE TANK 2B VENT	692 A12W	CLOSED	
2-RTV-31-3979A	2-LG-31-325 ROOT	692 A12W	OPEN	
2-RTV-31-3980A	2-LG-31-325 ROOT	692 A12W	OPEN	
2-RTV-31-1112	2-LS-31-324 ROOT	692 A12W	OPEN	
2-RTV-31-1113A	2-LS-31-324 ROOT	692 A12W	OPEN	
2-ISV-31-3396	INCORE INSTR RM CHLR 2BCW MU	692 A12W	CLOSED	
2-VTV-31-3394	INCORE INSTR ROOM AIR SEPARATOR 2B VENT	692 A12W	CLOSED	

Table 2 (Page 4 of 6) VALVE LINEUP

Data Package: Page ____ of ____

VALVE NUMBER	VALVE NOMENCLATURE	VALVE LOCATION	VALVE POSITION	VERIFIED BY INITIALS
2-ISV-31-3398	INCORE INSTR ROOM CW PUMP 28 SUCTION	692 A12W	OPEN	
2-RTV-31-1111A	2-PI-31-323 ROOT	692 A12W	OPEN	
2-DRV-31-3399	INCORE INSTR ROOM CW PUMP 2B DRAIN	692 A12W	CLOSED	
2-RTV-31-1110A	2-PI-31-322 ROOT	692 A12W	OPEN	
2-ISV-31-3401	INCORE INSTR ROOM CW PUMP 2B DISCH	692 A12W	OPEN	
2-VTV-31-3438	INCORE INSTR RM CHLR 2BCW IN VENT	692 A12W	CLOSED	
2-ISV-31-3402	INCORE INSTR ROOM CHLR 2B CW IN ISOL	692 A12W	OPEN	
2-RTV-31-3403A	INCORE INSTR RM CHLR 2BCW IN TEST POINT	692 A12W	CLOSED	-
2-DRV-31-3385	INCORE INSTR RM CHLR 2BCW DRAIN	- 692 A12W	CLOSED	
2-RTV-31-1114A	2-PI-31-334 ROOT	692 A12W	OPEN	
2-ISV-31-3384	INCORE INSTR RM CHLR 2BCW OUT ISOL	692 A12W	OPEN	
2-RTV-31-3997A	2-FIS-31-332 ROOT (692 A12W	OPEN	
2-RTV-31-3998A	2-FIS-31-332 ROOT	692 A12W	OPEN	
2-FCV-31-326	INCORE INSTR RM AHU 2B CWR ISOL	OC 735 AZ 104	CLOSED	
2-VTV-31-3437	INCORE INST RM AHU 2B CWR VENT	OC 737 Q4	CLOSED	
2-FCV-31-330	INCORE INSTR RM AHU 2B CWS ISOL	OC 734 AZ 105	CLOSED	
2-VTV-31-3434	INCORE INSTR RM AHU 2B CWS VENT	OC 737 Q4	CLOSED	

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Table 2 (Page 5 of 6) VALVE LINEUP

Data Package: Page ____ of ____

VALVE NUMBER	VALVE NOMENCLATURE	VALVE LOCATION	VALVE POSITION	VERIFIED BY INITIALS
2-FCV-31-327	INCORE INST RM AHU 2B CWR ISOL	731 AZ 107	CLOSED	
2-TV-31-3449	INCORE INSTR RM AHU 2B CWR TEST VENT	731 AZ 112	CLOSED	
2-DRV-31-3444	INCORE INSTR RM AHU 2B CWR DRAIN	731 AZ 120	CLOSED	
2-BYV-31-3387	INCORE INSTR RM AHU 2B CW BYPASS	735 AZ 90	OPEN	
2-ISV-31-3388	INCORE INSTR RM AHU 2B CW TCV-31-328 U/S ISOL	731 AZ 120	OPEN	
2-BYV-31-3389	INCORE INSTR RM AHU 2B CW TCV-31-328 BYPASS	731 AZ 120	CLOSED	
2-ISV-31-3390	INCORE INSTR RM AHU 2B CW TCV-31-328 D/S ISOL	731 Q2	OPEN	
2-TCV-31-328	INCORE INSTR RM AHU 2B CW TEMP CONTROL	731 AZ 116	OPERABLE	
2-VTV-31-3439	INCORE INSTR RM AHU 2B CWR VENT	731 AZ 123	CLOSED	
2-FCV-31-329	INCORE INSTR RM AHU 2B CWS ISOL	731 AZ 102	CLOSED	
2-TV-31-3433	INCORE INSTR RM AHU 2B CWS TEST VENT	731 AZ 112	CLOSED	
2-TV-31-3448	INCORE INSTR RM AHU 2B CWS TEST VENT	731 AZ 112	CLOSED	
2-DRV-31-3442	INCORE INSTR RM AHU 2B CWS DRAIN	731 AZ 117	CLOSED	·
2-DRV-31-3375	INCORE INSTR RM AHU 2B CWS DRAIN	731 AZ 123	CLOSED	
2-ISV-31-3376	INCORE INSTR RM AHU 2B CWS ISOL	731 Q2	OPEN	
	COMMON			
2-ISV-31-3986	INCORE INSTR ROOM CHEM TRTMT TANK A ISOL	692 A12W	CLOSED	

Table 2 (Page 6 of 6) VALVE LINEUP

Data Package: Page _____ of _____

VALVE NUMBER	VALVE NOMENCLATURE	VALVE LOCATION	VALVE POSITION	VERIFIED BY INITIALS
2-ISV-31-3987	INCORE INSTR ROOM CHEM TRTMT TANK A ISOL	692 A12W	CLOSED	
2-VTV-31-3408	INCORE INSTR RM CW CHEM TRTMT TANK 2A VENT	692 A12W	CLOSED	
2-ISV-31-3409	INCORE INSTR RM CW CHEM TRTMT TANK 2A OUT	692 A12W	CLOSED	
2-DRV-31-3410	INCORE INSTR RM CW CHEM TRTMT TNK 2A DRAIN	692 A12W	CLOSED	
2-ISV-31-3411	INCORE INSTR RM CW CHEM TRTMT TANK 2A FILL	692 A12W	CLOSED	
2-ISV-31-3412	INCORE INSTR RM CW CHEM TRTMT TNK 2A INLET	692 A12W	CLOSED	

Table 3 (Page 1 of 1) SWITCH LINEUP

, Dat	ta Package:	Page of	Date	Date	
SWITCH NUMBER	SWITCH LOCATION	SWITCH NOMENCLATURE	SWITCH POSITION	VERIFIED BY	
2-HS-31-265A	2-M-9	INCORE INST RM A/C A SW	STOP (PULL-TO-LOCK)		
2-HS-31-266A	2-M-9	INCORE INST RM A/C B SW	STOP (PULL-TO-LOCK)		
2-HS-31-305	2-M-9	CIRC PMP A SUCT CIV-ØA	CLOSE return to A AUTO		
2-HS-31-306	2-M-9	CIRC PMP A SUCT CIV-ØA	CLOSE return to A AUTO		
2-HS-31-308	2-M-9	CIRC PMP A DISCH CIV-ØA	CLOSE return to A AUTO		
2-HS-31-309	2-M-9	CIRC PMP A DISCH CIV-ØA	CLOSE return to A AUTO		
2-HS-31-326	2-M-9	CIRC PMP B SUCT CIV-ØA	CLOSE return to A AUTO		
2-HS-31-327	2-M-9	CIRC PMP B SUCT CIV-ØA	CLOSE return to A AUTO		
2-HS-31-329	2-M-9	CIRC PMP B DISCH CIV-ØA	CLOSE return to A AUTO		
2-HS-31-330	2-M-9	CIRC PMP B DISCH CIV-ØA	CLOSE return to A AUTO		
2-CHR-31-303	Chiller 2A Panel	CHILLER 2A CONTROL PANEL POWER SWITCH	ON (GREEN LIGHT ON)		
2-CHR-31-324	Chiller 2B Panel	CHILLER 2B CONTROL PANEL POWER SWITCH	ON (GREEN LIGHT ON)		

Appendix D (Page 1 of 1)

Background Calculations

A. Water Flow Instrument Uncertainties

Design Flow Rate = 21 GPM

Flowmeter Uncertainty = \pm 3% of reading

21 GPM $*1.03 \equiv 21.63$ GPM $\Rightarrow 22$ GPM

B. Air Flow Instrument Uncertainties

Air Flow Uncertainties are covered within GTM-05 and are not required to be calculated within this PTI.

C. Valve Stroke Timing Instrument Uncertainties

Design Valve Stroke Timing = 10 sec

Stopwatch Uncertainty = ± 0.1 sec

Uncertainty is negligible compared to the human error factor involved with use of a stopwatch.