

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

January 12, 2011

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

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

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

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

PTI NUMBER	Rev.	TITLE
2-PTI-074-01	0	Residual Heat Removal System Pump/Valve Logic
2-PTI-077-01	0	Liquid Waste Processing System

DO30 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 January 12, 2011

cc (Enclosures):

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

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

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	WATTS BAR NUCLEAR PLANT		
	UNIT 2 STARTUP	. •	× - 4
	TITLE: RESIDUAL HEAT REMOVAL SYSTEM PUMP/VA	LVE LOGIC	
	Instruction No: <u>2-PTI-074-01</u>		
	Revision No:0000	· · · · · · · · · · · · · · · · · · ·	
	PREPARED BY: Chris Doudreaux Uno Doudreaux	DATE 9-17-	
		DATE 9-17-11	'n
	PRINT NAME/ SIGNATURE	DATE	<u> </u>
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	INSTRUCTION APPROVAL		
		an a	
	JTG MEETING NO: 2-10-012		·
•	JTG CHAIRMAN: DOR DATE 12) MIL	-	
	APPROVED BY: DATE 1211+112		
· .	PREOPERATIONAL STARTUP MANAGER	· · ·	
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	TEST RESULTS APPROVAL		
	JTG MEETING NO:		
	JTG CHAIRMAN: DATE		
	APPROVED BY: DATE		
	PREOPERATIONAL STATTUP MANAGER		
	SMP-8.0. R4. Administration of Preoperational Test Instructions. Appendix B		
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Unit 2	PUMP/VALVE LOGIC	Rev. 0000
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Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change				
0000	12/14/10	ALL	This procedure was converted from Word 95 to Word 2002 (XP) using Rev. 0 of 1-PTI-074-01. It was then converted from Word 2003 to Word 2007. Initial Issue.				

Revision Log

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1.0 INTRODUCTION

1.1 TEST OBJECTIVES

This test is being performed to demonstrate the operability of the Residual Heat Removal System and its capability to provide recirculation flows required to remove heat from the Reactor Coolant System.

1.2 SCOPE

Verify System 74, Residual Heat Removal System (RHR) components function according to design requirements and required safety functions. Pump and valve logic will be tested. RHR pumps will be operated to verify miniflow condition.

To ensure proper operation of Residual Heat Removal System motor operated valves under no-load conditions.

To ensure proper operation of the Residual Heat Removal Pump breakers.

To ensure proper operation of Residual Heat Removal System air operated valves under static conditions.

To ensure proper operation of transfer switch alarms.

To ensure proper operation of the RHR system motor operated valves interlocks.

Date _

2.0 **REFERENCES**

2.1 **Performance References**

- SMP-9.0, CONDUCT OF TEST
- SMP-15.0, STATUS AND CONTROL OF ISOLATION DEVICES
- TVA Safety Manual Procedure 1021
- TI-300, ELECTRICAL ARC FLASH PERSONAL PROTECTIVE EQUIPMENT & PROTECTIVE BOUNDARY MATRICES
- 2-SOI-74.01, RESIDUAL HEAT REMOVAL SYSTEM OPERATING
 INSTRUCTION

2.2 Developmental References

- A. Final Safety Analysis Report
 - 1. FSAR-Amendment 101
 - a. Section 6.2 6.3, Containment Systems AND Emergency Core Cooling Systems
 - b. Section 14.2, Test Program
- B. Drawings
 - 1. Flow Diagrams
 - a. 2-47W810-1, Flow Diagram Residual Heat Removal System, Rev 3
 - (1) 53618-039
 - (2) 53618-040
 - (3) 52637-003
 - (4) 52637-004
 - (5) 52637-005
 - (6) 52637-006

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2.2 Developmental References (continued)

- b. 2-47W811-1, Flow Diagram Safety Injection System, Rev 4
- 2. Electrical Control Diagrams
 - a. 2-47W610-63-1, Electrical Control Diagram Safety Injection System, Rev 2
 - b. 2-47W610-74-1, Electrical Control Diagram Residual Heat Removal System, Rev 1
 - (1) 55707-001
 - (2) 55707-002
 - (3) 52639-090
 - (4) 53321-119
- 3. Electrical Logic Diagrams
 - a. 2-47W611-74-1, Electrical Logic Diagram Residual Heat Removal System, Rev 1
 - (1) 52639-091
 - (2) 53321-015
 - (3) 53321-016
 - b. 2-47W611-74-2, Electrical Logic Diagram Residual Heat Removal System, Rev 1
 - (1) 55707-003
 - (2) 55707-004
 - (3) 52639-092
- 4. Schematic Drawings
 - a. 45W600-57-1, Wiring Diagram Separation & Misc AUX Relays Schematic Diagrams, Rev 28
 - b. 2-45W600-57-2, Wiring Diagram Separation & Misc AUX Relays Schematic Diagrams, Sh. 2, Rev 0

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2.2 **Developmental References (continued)**

- 2-45W600-57-6, Wiring Diagram Separation & Misc AUX Relays C. Schematic Diagrams, Rev 0
- d. 2-45W600-57-8, Wiring Diagram Separation & Misc AUX Relays Schematic Diagrams, Rev 0
- 2-45W600-57-17, Wiring Diagram Separation & Misc AUX Relays e. Schematic Diagrams, Rev 0
 - (1) 53288-066
 - (2) 52639-075
- 2-45W600-57-20, Wiring Diagram Separation & Misc AUX Relays f. Schematic Diagrams, Rev 0
- 2-45W600-57-22, Wiring Diagram Separation & Misc AUX Relays g. Schematic Diagrams, Rev 1
- 2-45W600-57-23, Wiring Diagram Separation & Misc AUX Relays h. Schematic Diagrams, Rev 1
- 2-45W600-57-30, Wiring Diagram Separation & Misc AUX Relays i. Schematic Diagrams, Rev 0
- 2-45W600-57-32, Wiring Diagram Separation & Misc AUX Relays j. Schematic Diagrams, Rev 0
- 2-45W600-57-37, Wiring Diagram Separation & Misc AUX Relays k. Schematic Diagrams, Rev Anticipated
 - (1) 54172-177
 - (2) 54172-178
 - (3) 54172-179
 - (4) 54172-464
 - (5) 54172-465
 - (6) 54172-466
- I. 2-45W600-74, Wiring Diagram Residual Heat Removal System Schematic Diagram, Rev 0

Date

2.2 Developmental References (continued)

- (1) 52671-089
- (2) 52378-140
- m. 1-45W706-1, Wiring Diagram 120V AC Vital INST PWR BDS 1-I & 2-I Connection Diagram Sheet 1, Rev 68
- n. 1-45W706-2, Wiring Diagram 120V AC Vital INST PWR BDS 1-II & 2-II Connection Diagram Sheet 2, Rev 63
- o. 1-45W706-3, Wiring Diagram 120V AC Vital INST PWR BDS 1-III & 2-III Connection Diagram SH 1, Rev 48
- p. 1-45W706-4, Wiring Diagram 120V AC Vital INST PWR BDS 1-IV & 2-IV Connection Diagram SH 1, Rev 50
- q. 1-45W760-211-12, Wiring Diagram 6900V Shutdown Power-2A-A Schematic Diagram, Rev 16
 - (1) 54210-058
- r. 1-45W760-211-14, Wiring Diagram 6900V Shutdown Power-2B-B Schematic Diagram, Rev 15
 - (1) 54210-154
- s. 2-45W760-30-18, Wiring Diagrams Ventilating System Schematic Diagrams, Rev 0
 - (1) 53290-049
 - (2) 53290-066
- t. 45W760-55-2, Wiring Diagrams Annunciator System Schematic Diagrams, Rev 7
 - (1) 52639-076
- u. 45W760-55-3, Wiring Diagrams Annunciator System Schematic Diagrams, Rev 2
 - (1) 52639-074
- v. 2-45W760-63-4, Wiring Diagrams Safety Injection System Schematic Diagram, Rev 0

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2.2 Developmental References (continued)

- w. 2-45W760-63-5, Wiring Diagrams Safety Injection System Schematic Diagram, Rev 0
- x. 2-45W760-63-6, Wiring Diagrams Safety Injection System Schematic Diagram, Rev 0
- y. 2-45W760-63-7, Wiring Diagrams Safety Injection System Schematic Diagram, Rev 0
- z. 2-45W760-63-8, Wiring Diagrams Safety Injection System Schematic Diagram, Rev 0
- aa. 2-45W760-74-1, Wiring Diagrams Residual Heat Removal System Schematic Diagram, Rev 1
 - (1) 54191-032
- bb. 2-45W760-74-2, Wiring Diagrams Residual Heat Removal System Schematic Diagram Rev 0
 - (1) 53287-142
 - (2) 52639-005
 - (3) 53290-046
 - (4) 53290-062
 - (5) 53292-078
- cc. 2-45W760-74-3, Wiring Diagrams Residual Heat Removal System Schematic Diagram, Rev 0
 - (1) 53287-146
 - (2) 52639-006
 - (3) 55707-203
 - (4) 55707-204
 - (5) 53292-050
 - (6) 53292-073
 - (7) 53287-144

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2.2 **Developmental References (continued)**

- dd. 2-45W760-74-4, Wiring Diagrams Residual Heat Removal System Schematic Diagram, Rev 0
 - (1) 52639-007
 - (2) 54499-012
 - (3) 53288-052
 - (4) 53292-056
- ee. 2-45W760-270-2, Wiring Diagram Miscellaneous System Schematic Diagram, Rev 0
 - (1) 54499-013
- Single Line Diagrams 5.
 - 2-45W724-3, Wiring Diagrams 6900V Shutdown Board 2A-A Single а. Line, Rev 0
 - 2-45W724-4, Wiring Diagrams 6900V Shutdown Board 2B-B Single b. Line, Rev 0
 - 2-45W751-2, Wiring Diagrams 480V REAC MOV BD 1A1-A & 2A1-A C. Single Line SH-2, Rev 0
 - d. 2-45W751-3, Wiring Diagrams 480V REAC MOV BD 1A1-A & 2A1-A Single Line SH-3, Rev 1
 - 2-45W751-4, Wiring Diagrams 480V REAC MOV BD 1A2-A & 2A2-A е. Single Line SH-1, Rev 0
 - 2-45W751-7, Wiring Diagrams 480V REAC MOV BD 1B1-B & 2B1-B f. Single Line SH-1, Rev 1
 - g. 2-45W751-9, Wiring Diagrams 480V REAC MOV BD 1B1-B & 2B1-B Single Line SH-3, Rev 0
 - (1) 53292-094
 - (2) 55707-202
 - 2-45W756-2, Wiring Diagrams 480V CONT & AUX BLDG VT BD h. 2A1-A Single Line SH-2, Rev 0

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- 2.2 Developmental References (continued)
 - (1) 53290-096
 - i. 2-45W756-6, Wiring Diagrams 480V CONT & AUX BLDG VT BD 2B1-B Single Line SH-2, Rev 0
 - (1) 53290-104
 - 6. Connection Diagrams
 - a. 45N2635-50, Wiring Diagrams Local Instrument Panels Connection Diagram Sh-50, Rev 9
 - b. 2-45W2656-2, Unit Control Board Panel 2-M-21 Connection Diagram Sh-2, Rev 0
 - c. 2-45W2656-5, Unit Control Board Panel 2-M-21 Connection Diagram Sh-2, Rev 0
 - (1) 52630-035
 - (2) 52630-036
 - (3) 52343-271
 - d. 2-45W2656-8, Unit Control Board Panel 2-M-21 Connection Diagram Sh-2, Rev 0
 - e. 2-45W2656-9, Unit Control Board Panel 2-M-21 Connection Diagram Sh-2, Rev 0
 - f. 45B2766-5B, 480V React MOV BD 2A1-A Compt 5B, Rev 6

(1) 53287-010

g. 45B2766-10D, 480V React MOV BD 2A1-A Compt 10D, Rev 12

(1) 53287-027

- h. 45B2766-14D, 480V React MOV BD 2A1-A Compt 14D, Rev 9
 - (1) 52639-079
 - (2) 53287-042
- i. 45B2766-14E, 480V React MOV BD 2A1-A Compt 14E, Rev 6

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2.2 Developmental References (continued)

(1) 53287-043

- j. 45B2766-5B, 480V React MOV BD 2A2-A Compt 5B, Rev 6
 - (1) 53288-004
 - (2) 54499-022
- k. 45B2768-5B, 480V React MOV BD 2B1-B Compt 5B, Rev 6
 - (1) 53292-052
- I. 45B2768-5C, 480V React MOV BD 2B1-B Compt 5C, Rev 4
 - (1) 53292-031
 - (2) 52639-014
- m. 45B2768-10D, 480V React MOV BD 2B1-B Compt 10D, Rev 9
 - (1) 52639-015
 - (2) 53292-032
- n. 45B2768-15B, 480V React MOV BD 2B1-B Compt 15B, Rev 8
 - (1) 52639-081
 - (2) 53292-034
- o. 45B2768-15D, 480V React MOV BD 2B1-B Compt 15D, Rev 6
 - (1) 52639-082
 - (2) 53292-033
- p. 45B2770-7D, 480V Cont & Aux Bldg Vt BD 2A1-A Compt 7D, Rev 1
 - (1) 53290-006
- q. 45B2772-7D, 480V Cont & Aux Bldg Vt BD 2B1-B Compt 7D, Rev 0
 - (1) 52639-018
 - (2) 53290-029

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2.2 **Developmental References (continued)**

- 45N2632-11, Wiring Diagrams Miscellaneous Controls Connection r. Diagrams SH 11 Rev 5
 - (1) 53321-025
- 45N2635-11, Wiring Diagrams Local Instrument Panels Connection S. Diagrams, Sheet 11 Rev 16
- t. 45N2676-4, SOLID STATE PROT SYS TRN A CONN DIAG SH4 Rev 16
- 45N2676-5, SOLID STATE PROT SYS TRN A CONN DIAG SH5 Rev u. 10
- 45N2677-4, SOLID STATE PROT SYS TRN B CONN DIAG SH4 Rev ν. 18
- 45N2677-5, SOLID STATE PROT SYS TRN B CONN DIAG SH5 Rev W. 9
- 45N2680-3, Wiring Diagrams NSSS Aux Relay Panel 2-R-54 Х. **Connection Diagrams Rev 9**
 - (1) 52639-032
 - (2) 53756-255
 - (3) 53756-256
- 45N2681-3, Wiring Diagrams NSSS Aux Relay Panel 2-R-55 у. Connection Diagrams, SH-3, R11
- 45W2766-3, Wiring Diagrams 480V Reactor MOV BD 2A1-A Ζ. **Connection Diagrams Rev 12**
 - (1) 52639-047
- aa. 45W2768-8, Wiring Diagrams 480V Reactor MOV BD 2B1-B **Connection Diagrams Rev 7**
 - (1) 52639-061
 - (2) 52639-060
- bb. 45W2766-2, Wiring Diagrams 480V Reactor MOV BD 2A1-A 'Conn Diag Rev 20

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2.2 Developmental References (continued)

(1) 52639-045

- 7. Annuciator Drawings
 - a. 2-45B655-1B, Main Control Room Annunciator Inputs Window Box XA-55-1B Rev 0
 - b. 2-45B655-E1B, Electrical Annuciator Window Box XA-55-1B Engraving Rev 0
 - c. 2-45B655-6A, Main Control Room Annunciator Inputs Window Box XA-55-6A Rev 0

(1) 52378-227

d. 2-45B655-E6A, Electrical Annunciator Window Box XA-55-5A Engraving Rev 0

(1) 52378-238

- e. 2-45B655-6D, Main Control Room Annunciator Inputs Window Box XA-55-6D Rev 1
- f. 2-45B655-E6D, Electrical Annunciator Window Box XA-55-6D Engraving Rev 1
- g. 2-45B655-6F, Main Control Room Annunciator Inputs Window Box XA-55-6F Rev 0
 - (1) 52630-092
 - (2) 52639-077
 - (3) 52343-236
- h. 2-45B655-E6F, Electrical Annunciator Window Box XA-55-6F Engraving Rev 0
 - (1) 52630-101
 - (2) 52343-237
- 8. Vendor Drawings
 - a. E-3619E SH 1, Wiring Diagram Panel 1 6900 V Shutdown Board 2A-A Logic Relay Pnl, Contract No. 75K2-85354 Rev H

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- 2.2 Developmental References (continued)
 - (1) 54210-025
 - (2) 54210-027
 - E-3619E SH 5, Wiring Diagram Panel 1 6900 V Shutdown Board 2A-A Logic Relay Pnl, Contract No. 75K2-85354 Rev P
 - (1) 54210-039
 - c. E-3620E SH 1, Wiring Diagram Panel 1 6900 V Shutdown Board 2B-B Logic Relay Pnl, Contract No. 75K2-85354 Rev G
 - (1) 54210-120
 - (2) 54210-122
 - d. E-3620E SH 5, Wiring Diagram Panel 1 6900 V Shutdown Board 2B-B Logic Relay Pnl, Contract No. 75K2-85354 Rev S
 - (1) 54210-134
 - e. 0126D4454, Switchgear Interconnection Diagram, Contract No. 74C2-84376 Ref 909
 - f. 0126D4513, Switchgear Interconnection Diagram, Contract No. 74C2-84376 Rev 908
 - 9. Other Drawings
 - a. 2-47A615-0, Integrated Computer System Terminations and I/O List R1
 - C. Other Documents
 - 1. Test Scoping Documents
 - a. 2-TSD-030A-1, Select Auxiliary Building ESF Coolers and HELB Detection Rev 1
 - b. 2-TSD-074-1, Residual Heat Removal System Component Testing (No Heat Load) Rev 0
 - 2. Setpoint Scaling Documents
 - a. 2-F-74-12, Rev 0

Date ___

2.2 Developmental References (continued)

- b. 2-F-74-24, Rev 0
- 3. System Operating Instruction
 - a. 2-SOI-74.01, RESIDUAL HEAT REMOVAL SYSTEM OPERATING INSTRUCTION, Draft Rev 0000 Tracking Number 0002.

Date _

3.0 PRECAUTIONS AND LIMITATIONS

- A. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Manual Procedure 1021.
- B. Steps may be repeated if all components cannot be tested in a step. However, if the test has been exited, prerequisite steps must be re-verified and a Chronological Test Log (CTL) entry made.
- C. Component tags and labels may differ slightly (abbreviations, punctuation, letter case, etc.) from the description given in this test. If this situation occurs, it shall NOT be considered a test deficiency or procedure deviation. It shall be documented in the CTL and reconciled by way of a plant labeling request or drawing discrepancy or single-line date typo change in the procedure as appropriate.
- D. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.
- E. All open test deficiencies are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- F. Deficiencies 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. Exercise caution when obtaining high pressure leakage flow through the test lines.
- I. The containment sump valves 2-FCV-63-72 and 2-FCV-63-73 will be cycled during the performance of this test. If the valve 2-FCV-63-1 is open during this time it may allow a path for the RWST to drain to the sump.
- J. Portions of this test isolate the RHR pumps suction and miniflow paths. Precautions shall be taken to preclude the pumps from starting during these portions.

Date

3.0 **PRECAUTIONS AND LIMITATIONS (continued)**

- K. Treat terminal points as though they are energized whether they are or not.
- L. Exercise caution when manually actuating relays to avoid contact with control circuit power.
- M. Do NOT operate RHR pumps below 500 gpm.
- N. Unit 1 Operations should be briefed on work activities since test activities such as temporarily removing a compartment from a board could impact Unit 1 owned equipment on a Unit 2 board.
- O. Unit 1 Annunciator Window 135F is a common Unit 2 alarm window and may not clear during this test. After acknowledging any such alarm, an additional alarm input will cause the window to reflash. In such event the steady "acknowledged" light will be utilized to identify "no additional alarm occurring."
- P. Unit 1 should be briefed that the Unit 1 Annunciator Window 135F may come in while testing U2 alarms.
- Q. Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
- R. During pump operation, observe piping and components for possible vibration and ensure overheating does NOT occur during miniflow operation.
- S. RHR pumps should NOT be operated on minimum flow recirculation simultaneously with both letdown line valves open (74-530 and -531) and/or both heat exchanger bypass valves open (HCV-74-36 and -37) because of a potential pump-to-pump interaction problem that could result in back pressure from one pump being strong enough to close the pump discharge check valve of the other pump, causing it to dead-head.

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4.0 PREREQUISITE ACTIONS

NOTE

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

4.1 **Preliminary Actions**

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

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

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

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

Date _____

4.1 **Preliminary Actions (continued)**

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

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

Α. Subsection 6.1

Β. Subsection 6.2

C. Subsection 6.3

Subsection 6.4 D.

Ε. Subsection 6.5

F. Subsection 6.6

G. Subsection 6.7

Η. Subsection 6.8

1. Subsection 6.9

J. Subsection 6.10

K. Subsection 6.11

Subsection 6.12 L.

Subsection 6.13 Μ.

N. Subsection 6.14

Ο. Subsection 6.15

Ρ. Subsection 6.16

Subsection 6.17 Q.

R. Subsection 6.18

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	Data	Pack	age: Page of _		Date
4.1	Prelin	nina	y Actions (continue	ed)	
	[6]	EN: bee will	SURE Component Te n evaluated and outs NOT impact test start	est Matrix Generic Tracking Report h tanding component test exceptions t.	as
		A.	Subsection 6.1		·
		В.	Subsection 6.2	-	
		C.	Subsection 6.3		
		D.	Subsection 6.4		
		Ε.	Subsection 6.5		
		F.	Subsection 6.6		
		G.	Subsection 6.7	· · ·	
		H.	Subsection 6.8		
		I.	Subsection 6.9		
		J.	Subsection 6.10		
		K.	Subsection 6.11		
		L.	Subsection 6.12		
		М.	Subsection 6.13		
		N.	Subsection 6.14	· · · · · · · · ·	
		О.	Subsection 6.15		
		Ρ.	Subsection 6.16		
		Q.	Subsection 6.17		
		R.	Subsection 6.18		
	[7]	EN Eng Alte	SURE outstanding De ineering Design Cha rations (TA's) do NO	esign Change Notices (DCN's), nge Requests (EDCR's) or Tempora T adverselv impact testing.	ary

4.1

Data Package: Page ____ of ____ Date **Preliminary Actions (continued) ENSURE** a review of outstanding Clearances has been [8] coordinated with Operations for impact to the test performance, AND **RECORD** in Appendix B, Temporary Condition Log if required. VERIFY plant instruments, listed on Appendix C, Permanent Plant [9] Instrumentation Log, are placed in service and are within their calibration interval. Subsection 6.17 Α. [10] **VERIFY** the following systems are in service or operable to the extent necessary to perform this test: System 032, Control Air - Provide control air to all AOV's. Α. Β. Subsection 6.1 2-MCC-213-A001-A, 480V REACTOR MOV BOARD . 2A1-A is energized 2-MCC-214-A001-A, 480V Control & Aux Bldg Vent . Board 2A1-A is energized Annunciator System is energized C. Subsection 6.2 2-MCC-213-B001-B, 480V REACTOR MOV BOARD ۰ 2B1-B is energized 2-MCC-214-B001-B, 480V Control & Aux Bldg Vent • Board 2B1-B is energized Annunciator System is energized Subsection 6.3 D. 2-MCC-213-A001-A, 480V REACTOR MOV BOARD 2A1-A is energized

> 2-BD-235-0001-D, 120V AC VITAL POWER BOARD 2-I is energized

WBN F Unit 2 Data Packag		RESI	DUAL HEAT REN PUMP/VALVE	2-PTI-074-01 Rev. 0000 Page 24 of 274			
		kage: i	Page of	_	Date		
4.1	Prelimina	ary Acti	ons (continued)				
		• 4	Annunciator Syste	m is energized			
	E.	Subse	ection 6.4				
		• 2	2-MCC-213-B001- 2B1-B is energized	B, 480V REACTO	R MOV BOARD		
		• 2	2-BD-235-0001-D, 2-I is energized.	120V AC VITAL F	POWER BOARD		
		• 2	2-BD-235-0002-E, 2-II is energized	120V AC VITAL F	OWER BOARD		
F. \$		• /	Annunciator System is energized				
		Subs	ubsection 6.5				
		• 2	2-MCC-213-A002- 2A2-A is energized	A, 480V REACTO	R MOV BOARD		
		• 2	2-BD-235-0001-D, 2-I is energized	120V AC VITAL F	POWER BOARD		
		• 4	Annunciator Syste	m is energized			
	G.	Subs	ection 6.6	,			
		• 4	2-MCC-213-B001- 2B1-B is energized	B, 480V REACTO	R MOV BOARD		
		•	2-BD-235-0002-E, 2-II is energized	120V AC VITAL F	POWER BOARD		
		• /	Annunciator Syste	m is energized			
	H.	Subs	ection 6.7				
		•	2-MCC-213-A001- 2A1-A is energized	A, 480V REACTO	R MOV BOARD		
		• /	Annunciator Svste	m is eneraized			

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	WBN Unit 2	RES	IDUAL HI PUM	EAT REMO P/VALVE L	2-PTI-074-01 Rev. 0000 Page 25 of 274		
	Data Pack	age:	Page	of		C)ate
4.1	Prelimina	ry Act	ions (cor	ntinued)			
	١.	Subs	ection 6.8	3			
	. ·	•	2-MCC-21 2B1-B is €	13-B001-B, energized	480V REACTOF	R MOV BOARD	
		• /	Annunciat	tor System	is energized		
	J.	Subs	ection 6.9)			
		•	2-MCC-21 2A1-A is e	13-A001-A, energized	480V REACTOF	R MOV BOARD	
		• ,	Annuncial	tor System	is energized		
	К.	Subs	ection 6.1	10			
		•	2-MCC-21 2B1-B is e	13-B001-B, energized	480V REACTOF	R MOV BOARD	
	L.	• , Subs	Annunciat ection 6.1	tor System I 1	is energized		
	,	•	2-BD-235 2-I is ener	-0001-D, 12 rgized	20V AC VITAL P	OWER BOARD	
		•	2-BD-235 2-II is ene	-0002-E, 12 ergized	20V AC VITAL P	OWER BOARD	
		•	2-BD-235 2-III is ene	-0003-F, 12 ergized	20V AC VITAL PO	OWER BOARD	
		•	Annunciat	tor System	is energized		
	M.	Subs	ection 6.1	12			
		•	2-BD-235 2-II is ene	-0002-E, 12 ergized	20V AC VITAL P	OWER BOARD	
		•	2-BD-235 2-IV is en	-0004-G, 12 ergized	20V AC VITAL P	OWER BOARD	
	•	• ,	Annuncial	tor System	is energized		

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM 2 PUMP/VALVE LOGIC F	2-PTI-074-01 Rev. 0000 Page 26 of 274
	Data Pac	kage: Page of	Date
4.1	Prelimina	ary Actions (continued)	
	N.	Subsection 6.13	
		 2-BD-235-0003-F, 120V AC VITAL POV 2-III is energized 	WER BOARD
		Annunciator System is energized	<u></u>
	Ο.	Subsection 6.14	
	·	 2-BD-211-A-A, 6900 SHUTDOWN BOA energized 	ARD 2A-A is
		 2-BD-235-0003-F, 120V AC VITAL POV 2-III is energized 	WER BOARD
		Annunciator System is energized	
	Ρ.	Subsection 6.15	
		 2-BD-211-B-B, 6900 SHUTDOWN BOA energized 	ARD 2B-B is
		 2-BD-235-0004-G, 120V AC VITAL PO 2-IV is energized 	WER BOARD
		Annunciator System is energized	
	Q.	Subsection 6.16	
		 2-BD-235-0003-F, 120V AC VITAL PO 2-III is energized 	WER BOARD
		 2-BD-235-0004-G, 120V AC VITAL PO 2-IV is energized 	WER BOARD
		Annunciator System is energized	
	R.	Subsection 6.17	
		• 2-MCC-213-A001-A, 480V REACTOR 2A1-A is energized	MOV BOARD
		 2-MCC-213-B001-B, 480V REACTOR 2B1-B is energized 	MOV BOARD

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	WBN Unit 2	RE	SIDUAL H PUM	EAT REMOVAL SYSTEM P/VALVE LOGIC	A 2-PTI-074-01 Rev. 0000 Page 27 of 274	
	Data I	Package	Page	of	Dat	e
4.1	Prelin	ninary Ad	ctions (cor	ntinued)		
		٠	2-BD-211 energized	-A-A, 6900 SHUTDOWN	BOARD 2A-A is	
		٠	2-BD-211 energized	-B-B, 6900 SHUTDOWN	BOARD 2B-B is	
		٠	Annuncia	tor System is energized		
		S. Sub	osection 6.1	8		
		•	2-BD-235 2-I is enei	-0001-D, 120V AC VITAL rgized	POWER BOARD	
		٠	2-BD-235 2-II is ene	-0002-E, 120V AC VITAL ergized	POWER BOARD	
		٠	2-BD-235 2-III is end	-0003-F, 120V AC VITAL ergized	POWER BOARD	
		٠	2-BD-235 2-IV is en	-0004-G, 120V AC VITAL ergized	POWER BOARD	
		•	Annuncia	tor System is energized		
•	[11]	VERIFY this test	System cle has been c	eanliness as required for completed in accordance	the performance of with SMP-7.0.	
		•	Subsectio	on 6.17.		
	[12]	REQUE	ST a cleara	ance on the following com	iponents.	
		A. 2-F	CV-63-1, F	WST TO RHR SUCTION	, I	
		B. 2-F	CV-72-40,	RHR SPRAY HDR A ISC	DLATION	
		C. 2-F	CV-72-41,	RHR SPRAY HDR B ISC	DLATION	
		D. 2-P	MP-74-10,	RHR Pump 2A		
		E. 2-P	MP-74-20,	RHR Pump 2B		
	[13]	PERFO ensure l	RM a prete NO conditic	st walkdown on equipme ons exist that will impact t	nt to be tested to est performance.	
	[14]	PERFO	RM all of A	ppendix F, Valve Logic E	lectrical Checklist.	

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	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 28 of 274
	Data Pa	ckage: Page of	Date
11	Prolimi	name Actions (continued)	

NOTE

Appendix E is an initial valve lineup only to establish control of System 74 for testing. The required valve positions to perform each individual section are identified within the section.

[15]] PE	RFORM the valve lineup listed in Appendix E.	-					
[16]] EN tes Sta	ENSURE components contained within the boundaries of this test are under the jurisdictional control of Preoperational Startup Engineering (PSE) and/or Plant Operations.						
[17]] CC per	DNDUCT a pretest briefing with Test and Operations sonnel in accordance with SMP-9.0.	_					
[18]] EN tes	SURE that communications are available for areas where	-					
[19]] VE pei	RIFY the Responsible Startup Engineer (RSE) has been consulted prior to forming the following sections:	1					
	Α.	Subsection 6.1						
		• System 63	_					
		• System 72	-					
	В.	Subsection 6.2						
	,	• System 63	-					
		• System 72	_					
	C.	Subsection 6.3						
		• System 63	-					
	D.	Subsection 6.4						
		• System 63	_					

Data Package: Page of Date 4.1 Preliminary Actions (continued) E. Subsection 6.14 • System 30 F. Subsection 6.15 • System 30 G. Subsection 6.16 • System 62 • System 63 • System 70 • System 72 H. Subsection 6.17 • System 30 • System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required.	V U	VBN Init 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 29 of 274
L1 Preliminary Actions (continued) E. Subsection 6.14 • System 30 F. Subsection 6.15 • System 30 G. Subsection 6.16 • System 62 • System 63 • System 70 • System 72 H. Subsection 6.17 • System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required.		Data	Pack	age: Page of	Date
 E. Subsection 6.14 System 30 F. Subsection 6.15 System 30 G. Subsection 6.16 System 62 System 63 System 70 System 72 H. Subsection 6.17 System 30 System 63 System 63 ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [20] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [21] ENSURE that all piping supports required for testing are installed and adjusted as required.	.1	Prelin	nina	y Actions (continued)	
 System 30 F. Subsection 6.15 System 30 G. Subsection 6.16 System 62 System 63 System 70 System 72 H. Subsection 6.17 System 30 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required.			E.	Subsection 6.14	
 F. Subsection 6.15 System 30 Subsection 6.16 System 62 System 63 System 70 System 72 H. Subsection 6.17 System 30 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required.				• System 30	
 System 30 G. Subsection 6.16 System 62 System 63 System 70 System 72 H. Subsection 6.17 System 30 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 			F.	Subsection 6.15	
 G. Subsection 6.16 System 62 System 63 System 70 System 72 H. Subsection 6.17 System 30 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required.				• System 30	
 System 62 System 63 System 70 System 72 H. Subsection 6.17 System 30 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required.			G.	Subsection 6.16	
 System 63 System 70 System 72 H. Subsection 6.17 System 30 System 63 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 				• System 62	
 System 70 System 72 H. Subsection 6.17 System 30 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 				• System 63	· .
 System 72	i.			• System 70	
 H. Subsection 6.17 System 30 System 63 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 				• System 72	
 System 30 System 63 ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 			Н.	Subsection 6.17	
 System 63				• System 30	
 [20] ENSURE the RWST level is below the high level alarm, 127-C "RWST LEVEL FULL (LS-63-46A/49A)" AND above 40% as indicated on 2-M-6. A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 				• System 63	
 A. Subsection 6.17 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 		[20]	EN: "RV indi	SURE the RWST level is below the high level ST LEVEL FULL (LS-63-46A/49A)" AND a cated on 2-M-6.	vel alarm, 127-C above 40% as
 [21] ENSURE that Boundary Drawings are up to date or necessary changes accomplished prior to the start of testing and that any change to the Boundary Drawings do NOT impact the validity of the test. [22] ENSURE that all piping supports required for testing are installed and adjusted as required. 			A.	Subsection 6.17	
[22] ENSURE that all piping supports required for testing are installed and adjusted as required.		[21]	EN: cha cha of ti	SURE that Boundary Drawings are up to da nges accomplished prior to the start of testi nge to the Boundary Drawings do NOT imp ne test.	ate or necessary ing and that any pact the validity
		[22]	EN: inst	SURE that all piping supports required for te alled and adjusted as required.	esting are

Date

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

[1] **ENSURE** the following M&TE is available AND

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

- Digital Stopwatch (2), accuracy ±1.5 sec/hr
- [2] **ENSURE** the following equipment is available.
 - Jumpers, (Grabber Type with Insulated Boots)
 - Jumpers, (Momentary hand-held contact) •
 - **Test Switches**

4.3 **Field Preparations**

INSTALL a jumper with a test switch in the CLOSE position [1] across terminals TB115-9 and TB115-10 in 2-R-54 on the field side of the insulators prior to performing Subsection 6.3 (RCS Low Pressure Permissive)

[2] **INSTALL** a jumper with a test switch in the CLOSE position across terminals TB208-1 and TB208-2 in Panel 2-R-55 on the field side of the insulators prior to performing Subsection 6.4 (RCS Low Pressure Permissive)

[3] **INSTALL** a jumper with a test switch in the CLOSE position across terminals TB121-1 and TB121-2 in Panel 2-R-54 on the field side of the insulators prior to performing Subsection 6.5 (RCS Low Pressure Permissive)

CV

CV

CV

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM 2-PTI-074-01 PUMP/VALVE LOGIC Rev. 0000 Page 31 of 274	4
	Data	Package: Page of I	Date
.3	Field	Preparations (continued)	
	[4]	INSTALL a jumper with a test switch in the CLOSE position across TB219-1 and TB219-2 in Panel 2-R-55 on the field side of the insulators prior to performing Subsection 6.6 (RCS Low Pressure Permissive)	
			CV
!	[5]	LIFT the lead from TB112-1 on the field side of the insulators and INSTALL a jumper with a test switch in the OPEN position from the lifted wire to TB112-2 on the field side of the insulators in Panel 2-R-54 prior to performing the following Subsections (RCS HI Pressure):	
		A. Subsection 6.3	
			CV
,		B. Subsection 6.4	
			CV
		C. Subsection 6.5	
			CV
	,	D. Subsection 6.6	
			CV
1	[6]	LIFT the lead from TB214-10 on the field side of the insulators a jumper with a test switch in the OPEN position from the lifted TB214-11 on the field side of the insulators in Panel 2-R-55 pri performing the following Subsections (RCS HI Pressure):	and INSTALL wire to or to
		A. Subsection 6.3	

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CV

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 32 of 274	
	Data Pacl	kage: Page of	Date	
4.3	Field Pre	parations (continued)		
	В.	Subsection 6.4		
	C.	Subsection 6.5	· ·	CV
		· · · ·		CV
	D.	Subsection 6.6		
			· · ·	CV

NOTES

- 1) Any Annunciator points associated with 2-MUX-55-12 and 2-MUX-55-13 ONLY have master switches at the bottom of each terminal strip.
- 2) All points associated with 2-TBK-55-25, 2-TBK-55-26, 2-TBK-55-27, and 2-TKB-55-28 will NOT have individual switches or a master switch.
 - [7] **ENSURE** System 55, Annunciator and Sequential Events Recording System applicable TBK switches are ON, the applicable Master Switches are ON, and window software input (s) are ENABLED for the following Annunciator windows.

ANNUNCIATOR	TERMINAL BLOCK	SWITCH	TEST SUBSECTION	INITIALS/DATE
14-D	00	32	6.14	
14-D	00	32	6.15	
14-E	00	31	6.14	
14-E	00	31	6.15	
113-B	06	35	6.18	
113-C	05	97	6.17	
113-C	13	- 35	6.17	
113-C	13	36	6.17	
113-D	16	49	6.18	

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Date _____

4.3 Field Preparations (continued)

ANNUNCIATOR	TERMINAL BLOCK	SWITCH	TEST SUBSECTION	INITIALS/DATE
113-D	16	50	6.18	
113-D	16	51	6.18	
113-D	16	52	6.18	
113-E	Master Swite	h on Mux 12	6.3, 6.4, 6.5, 6.6	
131-F	05	66	6.16	
131-F	05	73	6.16	
148-B	06	10	6.11, 6.13	
148-C	06	17	6.12	
149-A	06	08	6.14	
149-B	Master Swite	h on Mux 13	6.1	
149-C	06	03	6.3, 6.7, 6.9	
150-A	06	09	6.15	
150-B	Master Swite	ch on Mux 13	6.2	
150-C	06	04	6.4, 6.8, 6.10	

- [8] **VERIFY** Grade A demineralized water is available in the RWST prior to starting Subsection 6.17.
- [9] **VERIFY** all relay trip targets are reset prior to testing the following 6900V breaker logic tests:
 - A. Subsection 6.14
 - B. Subsection 6.15

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 34 of 274	
	Data	Package: Page of	C	Date
4.4	Appro	ovals and Notifications		
	[1]	Prior to the start of the test, OBTAIN permissio Preoperational Startup Manager to start the tes	n of the t.	,
		Preoperational Startup Signature	Manager	Date
	[2]	Prior to the start of the test, OBTAIN the Unit 2 (US/SRO) or Shift Manager's (SM) or Designed authorization.	Supervisor's e's (DS)	
		U2 US/SRO/SM/DS S	gnature	Date
			.	

[3] Prior to the start of the test, **OBTAIN** the Unit 1 Supervisor's (US/SRO) or Shift Manager's (SM) or Designee's (DS) authorization.

U1 US/SRO/SM/DS Signature

Date
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Date _____

5.0 ACCEPTANCE CRITERIA

[1] The following System 74 motor operated valves will operate with the thermal overload protective device bypass in effect and will NOT operate with the overload protective device bypass reset:

VALVE NUMBER	STEP (OPERATE)	STEP (NOT OPERATE)
2-FCV-74-3	6.1[54]	6.1[51]
2-FCV-74-21	6.2[54]	6.2[51]
2-FCV-74-1	6.3[91]	6.3[88]
2-FCV-74-2	6.4[91]	6.4[88]
2-FCV-74-8	6.5[67]	6.5[64]
2-FCV-74-9	6.6[67]	6.6[64]
2-FCV-74-12	6.7[49]	6.7[46]
2-FCV-74-24	6.8[49]	6.8[46]
2-FCV-74-33	6.9[48]	6.9[45]
2-FCV-74-35	6.10[48]	6.10[45]

[2] Annunciator window 149-C, 480 RX MOV BD 2A1-A/2A2-A, ALARMS when the transfer switches are placed in the AUX position for the following valves:

VALVE NUMBER	STEP NUMBER
2-FCV-74-33	6.9[25]
2-FCV-74-12	6.7[26]
2-FCV-74-1	6.3[69]

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5.0 ACCEPTANCE CRITERIA (continued)

[3] Annunciator window 150-C, 480 RX MOV BD 2B1-B/2B2-B, ALARMS when the transfer switches are placed in the AUX position for the following valves:

VALVE NUMBER	STEP NUMBER
2-FCV-74-2	6.4[69]
2-FCV-74-24	6.8[26]
2-FCV-74-35	6.10[25]

[4] Annunciator window 148-B, ACR PNL 2-L-11A, ALARMS when the transfer switches are placed in the AUX position for the following valves:

VALVE NUMBER	STEP NUMBER
2-FCV-74-16	6.11[12]
2-FCV-74-32	6.13[11]

[5] Annunciator window 148-C, ACR PNL 2-L-11B, ALARMS when the transfer switch is placed in the AUX position for the following valve:

VALVE NUMBER	STEP NUMBER
2-FCV-74-28	6.12[12]

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5.0 ACCEPTANCE CRITERIA (continued)

[6] Annunciator window 131-F, ESF Component Not Normal, ALARMS when any of the following components are not in the normal ESF alignment:

. VALVE NUMBER	POSITION	SET NUMBER
2-FCV-74-3	CLOSE	6.16[9]
2-FCV-74-21	CLOSE	6.16[15]
2-FCV-74-33	CLOSE	6.16[26]
2-FCV-74-35	CLOSE	6.16[32]
2-FCV-74-16	NOT FULLY OPEN	6.16[38]
2-FCV-74-28	NOT FULLY OPEN	6.16[44]

- [7] Annunciator Window 149-A ALARMS when the transfer switch for RHR PUMP 2A-A is in the AUX position (Step 6.14[76]).
- [8] Annunciator Window 150-A ALARMS when the transfer switch for RHR PUMP 2B-B is in the AUX position (Step 6.15[76]).
- [9] Annunciator Window 113-C "RHR PUMP DISCH PRESS HI/MINI FLOW CONDITION" ALARMS when either of the following occur:
 - A. 2-PS-74-13 (Train A) or 2-PS-74-26 (Train B) close (Steps 6.17[75], 6.17[81]), or
 - B. 2-FS-74-12 (Train A) or 2-FS-74-24 (Train B) close indicating miniflow valves are open when the respective pump is operating. (Steps 6.17[20], 6.17[50])
- [10] The red light on 6900V Shutdown BD Relay Panel ILLUMINATES when an RHR pump is operating. (Steps 6.14[59]F, 6.15[59]F)
- [11] Annunciator 14-E, M-1 THROUGH M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds when an RHR pmp trips on instantaneous over current. (Steps 6.14[145], 6.15[145])
- [12] Annunciator 14-D, M-1 THRU M-6 MOTOR OVERLOAD, ALARMS on a simulated overload of each RHR pump (Steps 6.14[167], 6.15[167])
- [13] RHR pumps will start on receipt of "SI" signal and remain running with SI signal reset. (Steps 6.14[98], 6.14[100], 6.15[98], 6.15[100])

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5.0 ACCEPTANCE CRITERIA (continued)

- [14] Each Integrated Computer System (ICS) input for RHR pumps 2A-A and 2B-B indicates control power available, hand switch is in the NOT P-L position, and pump is running when breaker is CLOSED. (Steps 6.14[35], 6.14[40], 6.14[58], 6.15[35], 6.15[40], 6.15[58])
- [15] Annunciator Window 149-B, 480 SD BD 2A1-A/2A2-A/ CA VT BD 2A1-A, ALARMS when the transfer switch is placed in the AUX position for the following valve:

VALVE NUMBER	STEP NUMBER
2-FCV-74-3	6.1[24]

[16] Annunciator Window 150-B, 480 SD BD 2B1-B/2B2-B/ CA VT BD 2B1-B, ALARMS when the transfer switch is placed in the AUX position for the following valve:

VALVE NUMBER	STEP NUMBER
2-FCV-74-21	6.2[24]

- [17] The following apply to 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL:
 - A. Control signal is interrupted on an SI signal and valve opens fully. (Step 6.11[32])
 - B. Valve remains open while SI signal is present. (Step 6.11[34])
 - C. After reset of main SI signal, valve remains full open until reset of its individual SI signal. (Step 6.11[36])
 - D. Valve can be reset by 2-HS-74-16, RHR HX A OUTLET FCV SI SIGNAL RESET after SI signal is removed. (Step 6.11[39])

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5.0 **ACCEPTANCE CRITERIA** (continued)

- The following apply to 2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET [18] FLOW CONTROL:
 - Control signal is interrupted on an SI signal and valve opens fully. (Step Α. 6.12[32])
 - Β. Valve remains open while Si signal is present (Step 6.12[34]).
 - C. After reset of main SI signal, valve remains full open until reset of its individual SI signal. (Step 6.12[36])
 - Valve can be reset by 2-HS-74-28, RHR HX B OUTLET FCV SI SIGNAL D. RESET after SI signal is removed. (Step 6.12[39])
- [19] While in recirculation mode with the RHR loops isolated from the RCS. RHR Pump miniflow is between 500 and 1500 gpm without the miniflow control valve "HUNTING". (Steps 6.17[19], 6.17[49])
- [20] Annunciator 113-B "RHR/CVCS HI TEMP PIPE BREAK" alarms for Train A when both 2-TS-74-43 and 2-TS-74-44 close on increasing temperature. For Train B, the annunciator alarms when both 2-TS-74-45 and 2-TS-74-46 close on increasing temperature. Annunciation is accompanied by a white indicating light in the MCR. (Steps 6.18[10], 6.18[12], 6.18[25], 6.18[27])
- Annunciator 113-D "RHR PUMP A/B MECH SEAL HX TEMP HI/HI-HI alarms [21] when either 2-TIS-74-7 or 2-TIS-74-19 opens on increasing (temperature (HI). or 2-TIS-74-7 or 2-TIS-74-19 on continued increasing temperature (HI-HI). (Steps 6.18[37], 6.18[43], 6.18[50], 6.18[56])

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5.0 ACCEPTANCE CRITERIA (continued)

[22] The following valves are interlocked properly (can be opened) when RCS pressure is below the set point and (a) for valve 2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION, valves 2-FCV-63-1, RWST TO RHR SUCTION and 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL are fully closed, and (b) for valve 2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION, valves 2-FCV-63-1, RWST TO RHR SUCTION and 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP 2B-B ISOL are fully closed:

VALVE NUMBER	STEP NUMBER
2-FCV-74-1	6.3[55]E, 6.3[78]E
2-FCV-74-2	6.4[55]E, 6.4[78]E
2-FCV-74-8	6.5[50]E
2-FCV-74-9	6.6[50]E

[23] Annunciator Window 113-E, RHR SUCT FCV-74-1, -2, -8, -9 OPEN & HI PRESS, ALARMS when any of the following valves are open with RCS pressure above the set point:

VALVE NUMBER	STEP NUMBER
2-FCV-74-1	6.3[123], 6.3[133]
2-FCV-74-2	6.4[122], 6.4[130]
2-FCV-74-8	6.5[80], 6.5[86]
2-FCV-74-9	6.6[80], 6.6[86]

- [24] 2-FCV-74-3, RHR PUMP 2A-A SUCTION will close when 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL starts to open and the transfer switch is in NORMAL. (Step 6.1[63])
- [25] 2-FCV-74-21, RHR PUMP 2B-B SUCTION will close when 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP 2B-B ISOL starts to open and the transfer switch is in NORMAL. (Step 6.2[63])

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5.0 ACCEPTANCE CRITERIA (continued)

- [26] 2- FCV-74- 3 is interlocked properly (can be opened) when 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL, 2-FCV-63-8, RHR PMP 2A-A TO CHG PMP & SIP 2A-A SUCT ISOL and 2-FCV-72-40, RHR SPRAY HDR A ISOLATION are fully closed. (Step 6.1[10]E)
- [27] 2-FCV-74-21, RHR PUMP 2B-B SUCTION is interlocked properly (can be opened) when 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP 2B-B ISOL, 2-FCV-63-11, RHR HX 2B-B OUTLET TO SIP 2B-B SUCT ISOL and 2-FCV-72-41, RHR SPRAY HDR B ISOLATION are fully closed. (Step 6.2[10]E)

NOTES

- 1) The low setpoint for 2-FCV-74-12 is from NESSD 2-F-74-12 Rev 0 for 2-FS-74-12A
- 2) The high setpoint for 2-FCV-74-12 is from NESSD 2-F-74-12 Rev 0 for 2-FS-74-12B
- 3) The inaccuracy of ±22.5 is from the Acceptable As Left value for 2-FI-74-12 from NESSD 2-F-74-12 Rev 0.
 - [28] With valve 2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE closed, it will open when RHR pump 2A-A starts. With valve closed and pump running, valve will open when discharge flow falls below miniflow low set point of 750±22.5 gpm. With valve open and pump running, valve will close when discharge flow increases above miniflow high set point of 1400±22.5 gpm. (Steps 6.17[18], 6.17[23], 6.17[27])

NOTES

- 1) The low setpoint for 2-FCV-74-24 is from NESSD 2-F-74-24 Rev 0 for 2-FS-74-24A
- 2) The high setpoint for 2-FCV-74-24 is from NESSD 2-F-74-24 Rev 0 for 2-FS-74-24B
- 3) The inaccuracy of ±22.5 is from the Acceptable As Left value for 2-FI-74-24 from NESSD 2-F-74-24 Rev 0.
 - [29] With valve 2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE closed, it will open when RHR pump 2B-B starts. With valve closed and pump running, valve will open when discharge flow falls below miniflow low set point of 750 gpm. With valve open and pump running, valve will close when discharge flow increases above miniflow high set point of 1400 gpm. (Steps 6.17[48], 6.17[57], 6.17[53])

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5.0 **ACCEPTANCE CRITERIA (continued)**

- The following coolers START automatically upon receipt of pump START [30] signal from their respective pump:
 - A. 2-PMCL-30-175-A, RHR Pump 2A-A ROOM COOLER (Step 6.14[57])
 - В. 2-PMCL-30-176-B, RHR PUMP 2B-B ROOM COOLER (Step 6.15[57])

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5.0 **ACCEPTANCE CRITERIA (continued)**

The following valves have stroke times within the specified time period: [31]

Valve No.	Specific Requirements	Verificatio n Steps
2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION	Less than or equal to 120 sec. to close	6.3[63], 6.3[65]
2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION	Less than or equal to 120 sec. to close	6.4[63], 6.4[65]
2-FCV-74-3, RHR PUMP 2A-A SUCTION	Less than or equal to 60 sec. to close	6.1[18], 6.1[20]
2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION	Less than or equal to 120 sec. to close	6.5[57], 6.5[59]
2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION	Less than or equal to 120 sec. to close	6.6[57], 6.6[59]
2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE	Less than or equal to 15 sec. to close	6.7[20], 6.7[22]
2-FCV-74-21, RHR PUMP 2B-B SUCTION	Less than or equal to 60 sec. to close	6.2[18], 6.2[20]
2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE	Less than or equal to 15 sec. to close	6.8[20], 6.8[22]
2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	Less than or equal to 15 sec. to close	6.9[19], 6.9[21]
2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE	Less than or equal to 15 sec. to close	6.10[19], 6.10[21]

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5.0 ACCEPTANCE CRITERIA (continued)

[32] The following components can be operated from the main control room (MCR), switchgear (SWG), locally (LOC), and auxiliary control station (ACS) (each as applicable).

Valve No.	MCR	SWG	LOC	ACS
2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION	6.3	6.3	N/A	N/A
2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION	6.4	6.4	N/A	N/A
2-FCV-74-3, RHR PUMP 2A-A SUCTION	6.1	6.1	6.1	, N/A
2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION	N/A	6.5	N/A	N/A
2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION	N/A	6.6	N/A	N/A
2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE	6.7	6.7	N/A	N/A
2-FCV-74-21, RHR PUMP 2B-B SUCTION	6.2	6.2	6.2	N/A
2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE	6.8	6.8	N/A	N/A
2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	6.9	6.9	N/A	N/A
2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE	6.10	6.10	N/A	N/A
2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL	6.11	N/A	N/A	6.11
2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL	6.12	N/A	N/A	6.12
2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL	6.13	N/A	N/A	6.13

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5.0 ACCEPTANCE CRITERIA (continued)

Valve No.	MCR	SWG	LOC	ACS
2-PMP-74-10, RHR Pump 2A-A	6.17	6.17	N/A	N/A
2-PMP-74-20, RHR Pump 2B-B	6.17	6.17	N/A	N/A

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5.0 **ACCEPTANCE CRITERIA (continued)**

Indication lights at the main control room and switchgear (as applicable) [33] indicate the correct valve position.

Valve No.	MCR	SWG
2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION	6.3	6.3
2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION	6.4	6.4
2-FCV-74-3, RHR PUMP 2A-A SUCTION	6.1	6.1
2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION	6.5	6.5
2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION	6.6	6.6
2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE	6.7	6.7
2-FCV-74-21, RHR PUMP 2B-B SUCTION	6.2	6.2
2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE	6.8	6.8
2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	6.9	6.9
2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE	6.10	6.10
2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL	6.11	N/A
2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL	6.12	N/A
2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL	6.13	N/A
2-PMP-74-10, RHR Pump 2A-A	6.14	6.14
2-PMP-74-20, RHR Pump 2B-B	6.15	6.15

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5.0 ACCEPTANCE CRITERIA (continued)

[34] The Plant Integrated Computer System (ICS) input reflects the correct status for the following valves.

Valve No.	Section
2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION	6.3
2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION	6.4
2-FCV-74-3, RHR PUMP 2A-A SUCTION	6.1
2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION	6.5
2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION	6.6
2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE	6.7
2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL	6.11
2-FCV-74-21, RHR PUMP 2B-B SUCTION	6.2
2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE	6.8
2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL	6.12
2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	6.9
2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE	6.10

[35] Each RHR pump motor ampmeter operates correctly.

Pump No.	Verification Steps
2-PMP-74-10, RHR Pump 2A-A	6.17[26]
2-PMP-74-20, RHR Pump 2B-B	6.17[56]

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5.0 ACCEPTANCE CRITERIA (continued)

[36] The following valves can maintain a valve position at setpoint from the main control room and auxiliary control room.

Valve No.	Section
2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL	6.11
2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL	6.12
2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL	6.13

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6.0 INSTRUCTIONS

NOTES

- 1) Subsections 6.1 through 6.16 and 6.18 may be performed in any order provided the Prerequisites for the individual section are complete. Subsection 6.17 may NOT be performed until Subsections 6.7, 6.8, 6.14, and 6.15 have been completed.
- 2) Throughout this instruction, the Control Room operator should verify, acknowledge, clear and otherwise respond to annunciators in the normal fashion.
- 3) Stroke time of active valves will be measured from the handswitch actuation to GREEN light OFF upon opening and RED light OFF upon closing.
- 4) Stopwatches should be reset after recording the stroke time.

6.1 Valve 2-FCV-74-3 Logic Test

NOTE Arc Flash PPE per TI-300 will be required during section 6.1 of the test. **VERIFY** the following prerequisites have been completed for [1] Subsection 6.1. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[19], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7]) [2] **ESTABLISH** communications between MCR Panel 2-M-6, 480V C & A VT Board 2A1-A, 480V RX MOV BOARD 2A1-A, and at valve 2-FCV-74-3, RHR PUMP 2A-A SUCTION in RHR A Pump Room. **ENSURE** the following valves are CLOSED from 2-M-6: [3] 2-FCV-63-8, RHR PMP 2A-A TO CHG PMP & SIP 2A-A Α. SUCT ISOL 2-FCV-72-40, RHR SPRAY HDR A ISOLATION В. C. 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL

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6.1	Valve	2-F	CV-74-3 Logic Test (continued)		
		D.	2-FCV-74-3, RHR PUMP 2A-A SUCTION	<u> </u>	
		Ε.	2-FCV-63-1, RWST TO RHR SUCTION		
	[4]	EN poir	SURE the following Integrated Computer Synts are in scan:	ystem (ICS)	
		Α.	FD2191		
		В.	FD2231	_	
	[5]	VE	RIFY ICS point FD2191 displays "PWR ON"	H	
	[6]	EN Boa	SURE the following transfer switch on the 4 ard 2A1-A is in NORMAL:	80V Control and Aux B	ldg Vent
		A.	2-XS-74-3, RHR PUMP 2A-A INLET FLOV TRANS SW	W CONTROL	-
	[7]	PL/ OP	ACE hand switch 2-HS-74-3C, RHR PMP A EN and then to NORMAL.	SUCTION to	
	[8]	VE NO	RIFY valve 2-FCV-74-3, RHR PUMP 2A-A T open.	SUCTION does	
	[9]	PL/ OP SU PM	ACE hand switch 2-HS-74-3A, RHR PMP A EN and while valve 2-FCV-74-3, RHR PUM CTION is opening, PLACE hand switch 2-H P A SUCTION to CLOSE AND RELEASE.	SUCTION to IP 2A-A IS-74-3A, RHR 	
	[10]	VE	RIFY the following indications:		
		A.	2-HS-74-3A red light ON.	_	
		В.	2-HS-74-3A green light OFF.		
		C.	2-HS-74-3C red light ON.	_	
		D.	2-HS-74-3C green light OFF.		
		E.	Valve is OPEN using local position indicat 5.0[26])	tor (Acc Crit	
	[11]	VE	RIFY ICS point FD2231 displays "OPEN".	·	

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6.1	Valve	e 2-F	CV-74-3 Logic Test (continued)	~
	[12]	PL/ CL(ACE hand switch 2-HS-74-3C, RHR PMP A OSE and then to NORMAL.	SUCTION to
	[13]	VE NO	RIFY valve 2-FCV-74-3, RHR PUMP 2A-A S T close.	SUCTION does
	[14]	PLA CLO SU PM	ACE hand switch 2-HS-74-3A, RHR PMP A OSE and while valve 2-FCV-74-3, RHR PUN CTION is closing, PLACE hand switch 2-HS P A SUCTION to OPEN AND RELEASE .	SUCTION to /IP 2A-A 5-74-3A, RHR
	[15]	VE	RIFY the following indications:	
		Α.	2-HS-74-3A red light OFF	<u>.</u>
		Β.	2-HS-74-3A green light ON	<u></u>
		C.	2-HS-74-3C red light OFF	
		D.	2-HS-74-3C green light ON	
		Ε.	Valve is CLOSED using local position indic	cator
	[16]	VE	RIFY ICS point FD2231 displays "NOT OPE	"

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6.1 Valve	2-FCV-74-3 Logic	Test (continued)		
		NOTE	<u> </u>	
Stopwatch tin 2-HS-74-3A, SUCTION. F time data.	ning of 2-FCV-74-3, RHR PMP A SUCTI verform steps 6.1[17	RHR PUMP 2A-A SUCTIO ON, and locally at 2-FCV-74]/6.1[18] and 6.1[19]/6.1[20]	N, will be done at 4-3, RHR PUMP 2 sequentially to ol	handswitch 2A-A otain stroke
[17]	SIMULTANEOUS PMP A SUCTION,	LY PLACE handswitch 2-H to the OPEN position AND	S-74-3A, RHR	
	START stopwatch	es.		· · · ·
[18]	STOP stopwatche SUCTION, reache	s when 2-FCV-74-3, RHR P s the OPEN position AND	UMP 2A-A	
	RECORD stroke ti	mes below:		
	A. Remote Oper	n Time (Acc Crit 5.0[31])		
		· · · · · · · · · · · · · · · · · · ·	seconds	(≤ 60 secs)
	M&TE	Cal Due Da	ite [.]	
	B. Local Open T	ïme		· · ·
	• •		seconds	(≤ 60 secs)

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6.1	Valve	e 2-F	CV-74-3 Logic Te	est (continue	ed)		
	[19]	SIN PM	IULTANEOUSLY	PLACE han the CLOSE	dswitch 2-HS position AND	-74-3A, RHR	
		ST	ART stopwatches.				
	[20]	SU	OP stopwatches w ICTION, reaches th	/hen 2-FCV-7 he CLOSE po	74-3, RHR Pl psition AND	JMP 2A-A	
		RE	CORD stroke time	es below:			
		A.	Remote Close T	ime (Acc Cr i	t 5.0[31])		
						seconds	(≤ 60 secs)
		M&	.TE		Cal Due Dat	e	
		В.	Local Close Time	e			
						seconds	(≤ 60 secs)
		M&	TE		Cal Due Dat	e	-
	[21]	EN /2A	SURE Annunciato	or Window 14 A1-A, is CLE	9-B, 480 SD AR.	BD 2A1-A	
	[22]	EN Ve	I SURE Event Disp NT BDS 2A1-A (X	lay Monitor 1 S-67-431) X	49-B reports S IN AUX, NO	149-B 480V ORMAL	~
	[23]	PL FL	ACE transfer swite OW CONTROL TF	ch 2-XS-74-3 RANS SW to	, RHR PUMF AUX.	2A-A INLET	
	[24]	VE /2/	RIFY Annunciator	Window 149 A1-A, ALARN	9-B, 480 SD E //S (Acc Crit	BD 2A1-A 5.0[15]) .	
	[25]	VE VE	RIFY Event Displa NT BDS 2A1-A (X	ay Monitor 14 (S-67-431) X	9-B reports f S IN AUX, Al	49-B 480V ₋ARM	
	[26]	PL FL	ACE transfer swite OW CONTROL TF	ch 2-XS-74-3 RANS SW to	9, RHR PUMF NORMAL.	2A-A INLET	
	[27]	VE /2/	RIFY Annunciator	Window 149 A1-A, CLEAF	9-B, 480 SD E RS.	3D 2A1-A	

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	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 54 of 274
	Data	Pacl	kage: Page of	Date
6.1	Valve	∋ 2-F	CV-74-3 Logic Test (continued)	
	[28]	VE Ve	RIFY Event Display Monitor 149-B reports 1 NT BDS 2A1-A (XS-67-431) XS IN AUX, NC	49-B 480V DRMAL
	[29]	PL/ FL(ACE transfer switch 2-XS-74-3, RHR PUMP OW CONTROL TRANS SW to AUX.	2A-A INLET
	[30]	PL/ OP	ACE hand switch 2-HS-74-3A, RHR PMP A EN AND RELEASE .	SUCTION to
	[31]	VE NO	RIFY valve 2-FCV-74-3, RHR PUMP 2A-A s T open.	SUCTION does
	[32]	PL/ OP 2-H NO	ACE hand switch 2-HS-74-3C, RHR PMP A EN and then to NORMAL, while valve is trav IS-74-3C, RHR PMP A SUCTION to CLOSE RMAL.	SUCTION to veling PLACE and then to
	[33]	VE	RIFY the following indications:	,
		Α.	2-HS-74-3C red light ON.	
		В.	2-HS-74-3C green light OFF.	
		C.	2-HS-74-3A red light OFF.	
		D.	2-HS-74-3A green light OFF.	·
		E.	Valve is OPEN using local position indicat	or
	[34]	34] PLACE hand switch 2-HS-74-3A, RHR PMP A SUCTION to CLOSE AND RELEASE.		SUCTION to
	[35]	VE NC	RIFY valve 2-FCV-74-3, RHR PUMP 2A-A T close.	SUCTION does
	[36]	PL CL 2-F NC	ACE hand switch 2-HS-74-3C, RHR PMP A OSE and then to NORMAL, while valve is tr IS-74-3C, RHR PMP A SUCTION to OPEN PRMAL.	SUCTION to aveling PLACE and then to

	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 55 of 274
	Data	Pacl	kage: Page of	Date
6.1	Valve	9 2-F	CV-74-3 Logic Test (continued)	
	[37]	VE	RIFY the following indications:	
		Α.	2-HS-74-3C red light OFF	
		Β.	2-HS-74-3C green light ON	
		C.	2-HS-74-3A red light OFF	
		D.	2-HS-74-3A green light OFF	
		Ε.	Valve is CLOSED using local position indic	cator
	[38]	DE SU DE SU	PRESS AND RELEASE 2-HS-74-3B, RHR CTION OPEN pushbutton, and while the va PRESS AND RELEASE 2-HS-74-3B, RHR CTION STOP pushbutton.	PMP A lve is opening, PMP A
	[39]	VE	RIFY the following indications:	
		Α.	2-HS-74-3B red light ON	<u> </u>
		В.	2-HS-74-3B green light ON	
		C.	Valve mid-position using local position ind	icator
	[40]	DE SU	PRESS AND RELEASE 2-HS-74-3B, RHR CTION OPEN pushbutton.	PMP A
	[41]	VE	RIFY the following indications:	
		Α.	2-HS-74-3B red light ON	
		В.	2-HS-74-3B green light OFF	
		C.	Valve OPEN using local position indicator	
	[42]	DE SU DE SU	PRESS AND RELEASE 2-HS-74-3B, RHR CTION CLOSE pushbutton, and while the v PRESS AND RELEASE 2-HS-74-3B, RHR CTION STOP pushbutton.	PMP A alve is closing PMP A

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM 2-PT PUMP/VALVE LOGIC Rev Pag	ГІ-074-01 . 0000 е 56 of 274
	Data	Package: Page of	Date
6.1	Valve	e 2-FCV-74-3 Logic Test (continued)	
	[43]	VERIFY the following indications:	· · · · ·
		A. 2-HS-74-3B red light ON	
		B. 2-HS-74-3B green light ON	
		C. Valve mid-position using local position indicator	r
	[44]	DEPRESS AND RELEASE 2-HS-74-3B, RHR PMP SUCTION CLOSE pushbutton.	A
	[45]	VERIFY the following indications:	
		A. 2-HS-74-3B red light OFF	
		B. 2-HS-74-3B green light ON	<u></u>
		C. Valve CLOSED using local position indicator	
	[46]	OPEN 2-BKR-74-3, RHR PMP 2A-A INLET (2-FCV- BKR 7D [480V C&A VENT BD 2A1-A, COMPT 7D].	-74-3);
	[47]	VERIFY ICS point FD2191 displays "PWR OFF".	·
		WARNING	
Arc I	Flash PP	E per TI-300 will be required for step 6.1[48]	۰ ۲
	[48]	MANUALLY TRIP the thermal overload for 2-BKR-7 480V C&A VENT BD 2A1-A, COMPT 7D.	74-3 at
			CV
	[49]	CLOSE 2-BKR-74-3, RHR PMP 2A-A INLET (2-FC) BKR 7D [480V C&A VENT BD 2A1-A, COMPT 7D].	V-74-3);
	[50]	PLACE control switch 2-HS-74-3C, RHR PMP A SU the OPEN position and then to NORMAL.	JCTION to
	[51]	VERIFY that valve 2-FCV-74-3, RHR PUMP 2A-A s does NOT open (Acc Crit 5.0[1]).	

	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 57 of 27	74	
	Data	Pack	age: Page of		Date _	
6.1	Valve	e 2-F(CV-74-3 Logic Test (continued)			
	[52]	DEI Pan Byp	PRESS and HOLD the armature of relay K7 el 4F on 480V RX MOV BD 2A1-A to simul ass.	in back of ate Overload	-	•
	[53]	PL/ the	CE control switch 2-HS-74-3C, RHR PMP OPEN position and then to NORMAL.	A SUCTION to) · _	
	[54]	VEF Opi	RIFY valve 2-FCV-74-3, RHR PUMP 2A-A ENS (Acc Crit 5.0[1]).	SUCTION	-	
	[55]	REI	EASE K7 relay armature.			
	[56]	OP I BKF	EN 2-BKR-74-3, RHR PMP 2A-A INLET (2- R 7D [480V C&A VENT BD 2A1-A, COMPT	FCV-74-3); 7D].		
			WARNING			
Arc F	-lash PP	PE pei	WARNING TI-300 will be required for the following ste	ep 6.1[57]		
Arc F	Flash PP [57]	PE per RES VEN	WARNING TI-300 will be required for the following ste SET the thermal overload for 2-BKR-74-3 a IT BD 2A1-A, COMPT 7D.	ep 6.1[57] t 480V C&A		
Arc F	Flash PP [57]	²E pei RES VEt	WARNING TI-300 will be required for the following ste SET the thermal overload for 2-BKR-74-3 a IT BD 2A1-A, COMPT 7D.	ep 6.1[57] t 480V C&A		CV
Arc F	Flash PP [57] [58]	PE per RES VEN	WARNING TI-300 will be required for the following ste SET the thermal overload for 2-BKR-74-3 a IT BD 2A1-A, COMPT 7D. OSE 2-BKR-74-3, RHR PMP 2A-A INLET (2 R 7D [480V C&A VENT BD 2A1-A, COMPT	ep 6.1[57] t 480∨ C&A 2-FCV-74-3); 7D].		CV
Arc F	-lash PP [57] [58] [59]	PE per RES VEN CLO BKN FLO	WARNING TI-300 will be required for the following ste SET the thermal overload for 2-BKR-74-3 a IT BD 2A1-A, COMPT 7D. OSE 2-BKR-74-3, RHR PMP 2A-A INLET (2 7D [480V C&A VENT BD 2A1-A, COMPT ACE transfer switch 2-XS-74-3, RHR PUMF W CONTROL TRANS SW to NORMAL.	2-FCV-74-3); 7D]. 2A-A INLET		CV
Arc F	-lash PP [57] [58] [59] [60]	PE per RES VEN BKN FLC ENS PUI	WARNING TI-300 will be required for the following ste SET the thermal overload for 2-BKR-74-3 a T BD 2A1-A, COMPT 7D. OSE 2-BKR-74-3, RHR PMP 2A-A INLET (2 R 7D [480V C&A VENT BD 2A1-A, COMPT ACE transfer switch 2-XS-74-3, RHR PUMF OW CONTROL TRANS SW to NORMAL. SURE transfer switch 2-XS-63-72, CNTMT MP A-A is in NORMAL.	ep 6.1[57] t 480V C&A 2-FCV-74-3); 7D]. ? 2A-A INLET SUMP TO RHF	- - - - -	CV
Arc F	Flash PP [57] [58] [59] [60] [61]	PE per RES VEN CLO BKN FLO ENS CHO	WARNING TI-300 will be required for the following state SET the thermal overload for 2-BKR-74-3 a AT BD 2A1-A, COMPT 7D. OSE 2-BKR-74-3, RHR PMP 2A-A INLET (2 R 7D [480V C&A VENT BD 2A1-A, COMPT ACE transfer switch 2-XS-74-3, RHR PUMP W CONTROL TRANS SW to NORMAL. SURE transfer switch 2-XS-63-72, CNTMT MP A-A is in NORMAL. SURE transfer switch 2-XS-63-8, RHR HTX G PUMP is in NORMAL.	2-FCV-74-3); 7D]. 2 2A-A INLET SUMP TO RHF	۰ ۲	CV

CV

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-P11-074-01 Rev. 0000 Page 58 of 274	
	Data	Package: Page of	Date	
6.1	Valve	2-FCV-74-3 Logic Test (continued)		
	[63]	OPEN valve 2-FCV-63-72, CONTAINMENT S PUMP 2A-A ISOL, using 2-HS-63-72A, CNTM RHR PMP A SUCT AND VERIFY valve 2-FCV PUMP 2A-A SUCTION closes when 2-FCV-63 CONTAINMENT SUMP TO RHR PUMP 2A-A open (Acc Crit 5.0[24]).	UMP TO RHR IT SUMP TO /-74-3, RHR 3-72, ISOL starts to	-
	[64]	REMOVE jumper across terminals TB 631-11 in Panel 2-R-48.	and TB 631-12	
				CV
	[65]	PLACE control switch 2-HS-74-3A, RHR PMF OPEN AND RELEASE.	A SUCTION to	
	[66]	VERIFY valve 2-FCV-74-3, RHR PUMP 2A-A NOT open.	SUCTION does	
	[67]	REMOVE the cover from the CLOSED stem n switch on valve 2-FCV-72-40, RHR SPRAY H ISOLATION and LIFT wire 7D05 to simulate v condition.	nounted limit DR A valve OPEN	
			•	CV
	[68]	CLOSE valve 2-FCV-63-72, CONTAINMENT PUMP 2A-A ISOL using 2-HS-63-72A, CNTM RHR PMP A SUCT.	SUMP TO RHR T SUMP TO	
	[69]	PLACE control switch 2-HS-74-3A, RHR PMF OPEN AND RELEASE.	P A SUCTION to	· ·
,	[70]	VERIFY valve 2-FCV-74-3, RHR PUMP 2A-A NOT open.	SUCTION does	
	[71]	LAND wire 7D05 in the CLOSE stem mounted valve 2-FCV-74-40 and REPLACE limit switch	d limit switch of n cover.	
				UV

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	Data	Package: Page of	Date
6.1	Valve	e 2-FCV-74-3 Logic Test (continued)	
	[72]	OPEN valve 2-FCV-63-72, CONTAINMENT SU PUMP 2A-A ISOL using 2-HS-63-72A, CNTMT RHR PMP A SUCT.	JMP TO RHR SUMP TO
	[73]	OPEN valve 2-FCV-63-8, RHR PMP 2A-A TO SIP 2A-A SUCT ISOL using 2-HS-63-8A, RHR CHARGING PMPS SUCT.	CHG PMP & PMP A TO
	[74]	CLOSE valve 2-FCV-63-72, CONTAINMENT S PUMP 2A-A ISOL using 2-HS-63-72A, CNTMT RHR PMP A SUCT.	SUMP TO RHR SUMP TO
	[75]	PLACE control switch 2-HS-74-3A, RHR PMP OPEN AND RELEASE .	A SUCTION to
	[76]	VERIFY valve 2-FCV-74-3, RHR PUMP 2A-A NOT OPEN.	SUCTION does
	[77]	CLOSE valve 2-FCV-63-8, RHR PMP 2A-A TO SIP 2A-A SUCT ISOL using 2-HS-63-8A, RHR CHARGING PMPS SUCT.) CHG PMP & PMP A TO
	[78]	VERIFY successful completion of Subsection 6 5.0[32], 5.0[33], 5.0[34]).	6.1 (Acc Crit

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6.2 Valve 2-FCV-74-21 Logic Test

NOTE					
Arc Flash PPE per TI-300 will be required during section 6.2 of the test.					
[1]	VE Sut 4.1	RIFY the following prerequisites have been completed for psection 6.2. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[19], 4.1[21], [22], 4.2[1], 4.2[2], 4.3[7])			
[2]	ES 480 and RH	TABLISH communications between MCR Panel 2-M-6, IV C & A VT Board 2B1-B, 480V RX MOV BOARD 2B1-B, I at valve 2-FCV-74-21, RHR PUMP 2B-B SUCTION in R B Pump Room.			
[3]	EN	SURE the following valves are CLOSED from 2-M-6:			
	A.	2-FCV-63-11, RHR HX 2B-B OUTLET TO SIP 2B-B SUCT ISOL			
	В.	2-FCV-72-41, RHR SPRAY HDR B ISOLATION			
	C.	2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP 2B-B ISOL			
	D.	2-FCV-74-21, RHR PUMP 2B-B SUCTION			
	E.	2-FCV-63-1, RWST TO RHR SUCTION			
[4]	EN poi	SURE the following Integrated Computer System (ICS) nts are in scan:			
	Α.	FD2343			
	В.	FD2256			
[5]	VE	RIFY ICS point FD2343 displays "PWR ON".			

	WBN Unit 2	-	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 61 of 274
	Data	Pacl	kage: Page of	Date
5.2	Valve	9 2-F	CV-74-21 Logic Test (continued)	
	[6]	EN Boa	SURE the following transfer switch on the 4 ard 2B1-B is in NORMAL:	80V Control and Aux Bldg Ven
		A.	2-XS-74-21, RHR PUMP 2B-B INLET FLC TRANS SW	W CONTROL
	[7]	PL. OP	ACE hand switch 2-HS-74-21C, RHR PMP EN and then to NORMAL.	B SUCTION to
	[8]	VE doe	RIFY valve 2-FCV-74-21, RHR PUMP 2B-B es NOT open.	
`	[9]	PL/ OP SU PM	ACE hand switch 2-HS-74-21A, RHR PMP I EN and while valve 2-FCV-74-21, RHR PUN CTION is opening, PLACE hand switch 2-H IP B SUCTION to CLOSE AND RELEASE.	3 SUCTION to MP 2B-B S-74-21A, RHR
	[10]	VE	RIFY the following indications:	
		A.	2-HS-74-21A red light ON.	
		В.	2-HS-74-21A green light OFF.	
		C.	2-HS-74-21C red light ON.	<u></u>
		D.	2-HS-74-21C green light OFF.	
-		E.	Valve is OPEN using local position indicat 5.0[27])	or (Acc Crit
	[11]	VE	RIFY ICS point FD2256 displays "OPEN".	
	[12]	PL. CL	ACE hand switch 2-HS-74-21C, RHR PMP OSE and then to NORMAL.	B SUCTION to
·	[13]	VE doe	RIFY valve 2-FCV-74-21, RHR PUMP 2B-E es NOT close.	
·	[14]	PL CL SU PM	ACE hand switch 2-HS-74-21A, RHR PMP I OSE and while valve 2-FCV-74-21, RHR PL CTION is closing, PLACE hand switch 2-HS IP B SUCTION to OPEN AND RELEASE .	B SUCTION to JMP 2B-B S-74-21A, RHR

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WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 62 of 274				
Data	Pack	Date					
5.2 Valve	.2 Valve 2-FCV-74-21 Logic Test (continued)						
[15]	VE	RIFY the following indications:					
	Α.	2-HS-74-21A red light OFF					
	В.	2-HS-74-21A green light ON					
	C.	2-HS-74-21C red light OFF					
	D.	2-HS-74-21C green light ON					
	Ē.	Valve is CLOSED using local position indi	icator				
[16]	VE	RIFY ICS point FD2256 displays "NOT OPE	Ξ".				
•		NOTE					

Stopwatch timing of 2-FCV-74-21, RHR PUMP 2B-B SUCTION, will be done at handswitch 2-HS-74-21A, RHR PMP B SUCTION, and locally at 2-FCV-74-21, RHR PUMP 2B-B SUCTION. Perform steps 6.2[17]/6.2[18] and 6.2[19]/6.2[20] sequentially to obtain stroke time data.

[17] **SIMULTANEOUSLY PLACE** handswitch 2-HS-74-21A, RHR PMP B SUCTION, to the OPEN position **AND**

START stopwatches.

[18] **STOP** stopwatches when 2-FCV-74-21, RHR PUMP 2B-B SUCTION, reaches the OPEN position **AND**

RECORD stroke times below:

A. Remote Open Time (Acc Crit 5.0[31])

		seconds	$(\leq 60 \text{ secs})$
M&TE	Cal Due Date		
B. Local Open Time			
		seconds	(≤ 60 secs)
MATE	Cal Due Date		

	WBN Unit 2		RESIDUAL PU	HEAT REMO MP/VALVE L	OVAL SYSTEM OGIC	2-PTI-074-01 Rev. 0000 Page 63 of 27	4
	Data	Pac	kage: Page _	of		· . I	Date
6.2	Valve	e 2-F	CV-74-21 Log	gic Test (con	tinued)		
	[19]	SIN PM	MULTANEOU	SLY PLACE IN, to the CLO	nandswitch 2-HS SE position ANE	5-74-21A, RHR	
		ST	ART stopwatc	hes.			
	[20]	SU	OP stopwatch ICTION, reach	es when 2-FC les the CLOS	CV-74-21, RHR F E position AND	PUMP 2B-B	
		RE	CORD stroke	times below:			
		Α.	Remote Clo	se Time (Acc	Crit 5.0[31])		
						seconds	(≤ 60 secs)
		M8	TE		Cal Due Da	te	_
		В.	Local Close	Time	·		
						seconds	(≤ 60 secs)
		M8	TE		Cal Due Da	te	-
	[21]	EN 2B	ISURE Annun 1-B/2B2-B/ C/	ciator Window A VT BD 2B1-	/ 150-B, 480 SD B, is CLEAR.	BD	
	[22]	EN Ve	ISURE Event I NT BDS 2B1-	Display Monit B (XS-67-440	or 150-B reports) XS IN AUX, N	150-B 480V ORMAL	
	[23]	PL FL	ACE transfer	switch 2-XS-7 DL TRANS SW	4-21, RHR PUM / to AUX.	1P 2B-B INLET	
	[24]	VE 2B	RIFY Annunci 1-B/2B2-B/ C/	iator Window A VT BD 2B1-	150-B, 480 SD E B, ALARMS (Ac	3D : c Crit 5.0[16]) .	
	[25]	VE VE	RIFY Event D NT BDS 2B1-	isplay Monito B (XS-67-440	r 150-B reports ´)) XS IN AUX, AI	150-B 480V ₋ARM	
	[26]	PL FL	ACE transfer	switch 2-XS-7 DL TRANS SW	∕4-21, RHR PUM / to NORMAL.	1P 2B-B INLET	
	[27]	VE 2B	RIFY Annunc 1-B/2B2-B/ C/	iator Window A VT BD 2B1-	150-B, 480 SD I B, CLEARS.	3D	

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	Data	Pack	kage: Page of	Date
2	Valve	2-F	CV-74-21 Logic Test (continued)	
	[28]	VEI Vei	RIFY Event Display Monitor 150-B reports 1 NT BDS 2B1-B (XS-67-440) XS IN AUX, NC	50-B 480V DRMAL
	[29]	PL/ FL(ACE transfer switch 2-XS-74-21, RHR PUM OW CONTROL TRANS SW to AUX.	P 2B-B INLET
• .	[30]	PL/ OP	ACE hand switch 2-HS-74-21A, RHR PMP I EN AND RELEASE.	B SUCTION to
	[31]	VE doe	RIFY valve 2-FCV-74-21, RHR PUMP 2B-B es NOT open.	SUCTION
	[32]	PL/ OP 2-H NO	ACE hand switch 2-HS-74-21C, RHR PMP EN and then to NORMAL, while valve is trav IS-74-21C, RHR PMP B SUCTION to CLOS RMAL.	B SUCTION to veling PLACE SE and then to
	[33]	VE	RIFY the following indications:	
		Α.	2-HS-74-21C red light ON.	
		В.	2-HS-74-21C green light OFF.	·
		C.	2-HS-74-21A red light OFF.	
		D.	2-HS-74-21A green light OFF.	
		E.	Valve is OPEN using local position indicat	or
	[34]	PL/ CL(ACE hand switch 2-HS-74-21A, RHR PMP OSE AND RELEASE	B SUCTION to
	[35]	VE doe	RIFY valve 2-FCV-74-21, RHR PUMP 2B-E es NOT close.	
	[36]	PL/ CL 2-F NO	ACE hand switch 2-HS-74-21C, RHR PMP OSE and then to NORMAL, while valve is tr IS-74-21C, RHR PMP B SUCTION to OPEN RMAL.	B SUCTION to aveling PLACE N and then to

	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 65 of 274
	Data	Pacl	cage: Page of	Date
6.2	Valve	9 2-F	CV-74-21 Logic Test (continued)	
	[37].	VE	RIFY the following indications:	
		Α.	2-HS-74-21C red light OFF	
		В.	2-HS-74-21C green light ON	· · · · · · · · · · · · · · · · · · ·
		C.	2-HS-74-21A red light OFF	
		D.	2-HS-74-21A green light OFF	
		Ε.	Valve is CLOSED using local position indi	cator
	[38]	DE SU DE SU	PRESS AND RELEASE 2-HS-74-21B, RHF CTION OPEN pushbutton, and while the va PRESS AND RELEASE 2-HS-74-21B, RHF CTION STOP pushbutton.	R PMP B Ive is opening, R PMP B
	[39]	VE	RIFY the following indications:	
		Α.	2-HS-74-21B red light ON	
		В.	2-HS-74-21B green light ON	
		C.	Valve mid-position using local position ind	icator
	[40]	DE Su	PRESS AND RELEASE 2-HS-74-21B, RHI CTION OPEN pushbutton.	R PMP B
	[41]	VE	RIFY the following indications:	
		A.	2-HS-74-21B red light ON	
		Β.	2-HS-74-21B green light OFF	
		C.	Valve OPEN using local position indicator	
	[42]	DE SU DE SU	PRESS AND RELEASE 2-HS-74-21B, RHI CTION CLOSE pushbutton, and while the v PRESS AND RELEASE 2-HS-74-21B, RHI CTION STOP pushbutton.	R PMP B valve is closing R PMP B

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	Data	Pack	age: Page of	Date
6.2	Valve	2-F (CV-74-21 Logic Test (continued)	
	[43]	VE	RIFY the following indications:	
		A.	2-HS-74-21B red light ON	
		В.	2-HS-74-21B green light ON	
		C.	Valve mid-position using local position ind	icator
	[44]	DE SU	PRESS AND RELEASE 2-HS-74-21B, RHF CTION CLOSE pushbutton.	R PMP B
	[45]	VE	RIFY the following indications:	
		Α.	2-HS-74-21B red light OFF	
	,	В.	2-HS-74-21B green light ON	<u></u>
		C.	Valve CLOSED using local position indica	tor
	[46]	OP BK	EN 2-BKR-74-21, RHR PMP 2B-B INLET (2 R 7D [480V C&A VENT BD 2B1-B, COMPT	2-FCV-74-21); 7D]
	[47]	VE	RIFY ICS point FD2343 displays "PWR OFI	

WARNING

CV

Arc Flash PPE per TI-300 will be required for step 6.2[48]

- [48] **MANUALLY TRIP** the thermal overload for 2-BKR-74-21 at 480V C&A VENT BD 2B1-B, COMPT 7D.
- [49] **CLOSE** 2-BKR-74-21, RHR PMP 2B-B INLET (2-FCV-74-21); BKR 7D [480V C&A VENT BD 2B1-B, COMPT 7D].
- [50] **PLACE** control switch 2-HS-74-21C, RHR PMP B SUCTION to the OPEN position and then to NORMAL.
- [51] **VERIFY** that valve 2-FCV-74-21, RHR PUMP 2B-B SUCTION does NOT open (Acc Crit 5.0[1]).

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6.2	Valve	e 2-FCV-74-21 Logic Test (continued)	
	[52]	DEPRESS and HOLD the armature of relay k Panel 16D on 480V RX MOV BD 2B1-B to sin Bypass.	<pre>K6 in back of mulate Overload</pre>
	[53]	PLACE control switch 2-HS-74-21C, RHR PM the OPEN position and then to NORMAL.	/IP B SUCTION to
	[54]	VERIFY valve 2-FCV-74-21, RHR PUMP 2B- OPENS (Acc Crit 5.0[1]).	B SUCTION
	[55]	RELEASE K6 relay armature.	
	[56]	OPEN 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP	(2-FCV-74-21); T 7D].
Arc F		WARNING	
	lash PP	E per 11-500 will be required for step 0.2[57]	
	[57]	RESET the thermal overload for 2-BKR-74-21	1 at 480V C&A
	[57]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D.	at 480V C&A
	[57]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D.	1 at 480V C&A
	[57] [58]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D. CLOSE 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP	1 at 480V C&A CV T (2-FCV-74-21); T 7D].
	[57] [58]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D. CLOSE 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP PLACE transfer switch 2 XS-74-21 to NORM/	I at 480V C&A СV Г (2-FCV-74-21); Т 7D]. AL.
	[57] [58] [59] [60]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D. CLOSE 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP PLACE transfer switch 2 XS-74-21 to NORM/ ENSURE transfer switch 2-XS-63-73, CNTMT PUMP B-B is in NORMAL.	1 at 480V C&A CV T (2-FCV-74-21); T 7D]. AL. T SUMP TO RHR
	[57] [58] [60] [61]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D. CLOSE 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP PLACE transfer switch 2 XS-74-21 to NORM/ ENSURE transfer switch 2-XS-63-73, CNTMT PUMP B-B is in NORMAL. ENSURE transfer switch 2-XS-63-1, RHR HT PUMP is in NORMAL.	I at 480V C&A CV T (2-FCV-74-21); T 7D]. AL. T SUMP TO RHR X B TO SIS
	[57] [58] [59] [60] [61] [62]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D. CLOSE 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP PLACE transfer switch 2 XS-74-21 to NORM/ ENSURE transfer switch 2-XS-63-73, CNTMT PUMP B-B is in NORMAL. ENSURE transfer switch 2-XS-63-1, RHR HT PUMP is in NORMAL. INSTALL jumper across terminals TB 631-11 on the field side of the plastic insulators in Pa	I at 480V C&A CV T (2-FCV-74-21); T 7D]. AL. T SUMP TO RHR X B TO SIS and TB 631-12 nel 2-R-51.
	[57] [58] [60] [61] [62]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D. CLOSE 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP PLACE transfer switch 2 XS-74-21 to NORM/ ENSURE transfer switch 2-XS-63-73, CNTMT PUMP B-B is in NORMAL. ENSURE transfer switch 2-XS-63-1, RHR HT PUMP is in NORMAL. INSTALL jumper across terminals TB 631-11 on the field side of the plastic insulators in Pa	I at 480V C&A
	[57] [58] [60] [61] [62]	RESET the thermal overload for 2-BKR-74-21 VENT BD 2B1-B, COMPT 7D. CLOSE 2-BKR-74-21, RHR PMP 2B-B INLET BKR 7D [480V C&A VENT BD 2B1-B, COMP PLACE transfer switch 2 XS-74-21 to NORM/ ENSURE transfer switch 2-XS-63-73, CNTMT PUMP B-B is in NORMAL. ENSURE transfer switch 2-XS-63-1, RHR HT PUMP is in NORMAL. INSTALL jumper across terminals TB 631-11 on the field side of the plastic insulators in Pa	I at 480V C&A CV T (2-FCV-74-21); T 7D]. AL. T SUMP TO RHR X B TO SIS and TB 631-12 nel 2-R-51. CV

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6 .2	Valve	2-F	CV-74-21 Logic Test (continued)			
	[63]	OP PUI RH PUI CO	EN valve 2-FCV-63-73, CONTAINMENT SU MP 2B-B ISOL, using 2-HS-63-73A, CNTM R PMP B SUCT AND VERIFY valve 2-FCV MP 2B-B SUCTION closes when 2-FCV-63 NTAINMENT SUMP TO RHR PUMP 2B-B l en (Acc Crit 5.0[25]) .	JMP TO RHR T SUMP TO -74-21, RHR -73, ISOL starts to		
	[64]	RE in F	MOVE jumper across terminals TB 631-11 a Panel 2-R-51.	and TB 631-12		
						CV
	[65]	PL/ OP	ACE control switch 2-HS-74-21A, RHR PMF EN AND LEASE.	P B SUCTION t	.0	
	[66]	VE doe	RIFY valve 2-FCV-74-21, RHR PUMP 2B-E es NOT open.	SUCTION		
	[67]	RE swi ISC con	MOVE the cover from the CLOSED stem m tch on valve 2-FCV-72-41, RHR SPRAY HE DLATION and LIFT wire 7D05 to simulate vandition.	ounted limit DR B alve OPEN		
						CV
	[68]	CL PU RH	OSE valve 2-FCV-63-73, CONTAINMENT S MP 2B-B ISOL using 2-HS-63-73A, CNTMT R PMP B SUCT.	SUMP TO RHR SUMP TO		
	[69]	PL/ OP	ACE control switch 2-HS-74-21A, RHR PMF EN AND RELEASE.	P B SUCTION	to	
	[70]	VE doe	RIFY valve 2-FCV-74-21, RHR PUMP 2B-E es NOT open.	SUCTION		
	[71]	LA valv	ND wire 7D05 in the CLOSE stem mounted ve 2-FCV-74-41 and REPLACE limit switch	limit switch of cover.		
						CV

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6.2	Valve	2-FCV-74-21 Logic Test (continued)	
	[72]	OPEN valve 2-FCV-63-73, CONTAINMEN PUMP 2B-B ISOL using 2-HS-63-73A, CN RHR PMP B SUCT.	T SUMP TO RHR TMT SUMP TO
	[73]	OPEN valve 2-FCV-63-11, RHR HX 2B-B (2B-B SUCT ISOL using 2-HS-63-11A, RHF PMPS SUCT.	OUTLET TO SIP R PUMP B TO SI
	[74]	CLOSE valve 2-FCV-63-73, CONTAINMEI PUMP 2B-B ISOL using 2-HS-63-73A, CN RHR PMP B SUCT.	NT SUMP TO RHR TMT SUMP TO
	[75]	PLACE control switch 2-HS-74-21A, RHR OPEN AND RELEASE.	PMP B SUCTION to
	[76]	VERIFY valve 2-FCV-74-21, RHR PUMP 2 does NOT OPEN.	2B-B SUCTION
	[77]	CLOSE valve 2-FCV-63-11, RHR HX 2B-B 2B-B SUCT ISOL using 2-HS-63-11A, RHF PMPS SUCT.	B OUTLET TO SIP R PUMP B TO SI
	[78]	VERIFY successful completion of Subsecti 5.0[32], 5.0[33], 5.0[34]).	ion 6.2 (Acc Crit
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6.3 Valve 2-FCV-74-1 Logic Test

NOTE						
Arc Flash PPE per TI-300 will be required during section 6.3 of the test.						
 [1] VERIFY the following prerequisites have been completed for Subsection 6.3. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[19], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[1], 4.3[5]-4.3[7]) 						
[2]	ESTABLISH communications between MCR Panel 2-M-6, 480V RX MOV BOARD 2A1-A, and at valve 2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION, Inside Polar Crane Wall EI 706 Az 354.					
[3]	ENS	SURE the following valves are CLOSED from 2-M-6:				
	A.	2-FCV-63-1, RWST TO RHR SUCTION				
, ,	В.	2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL				
	C.	2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION				
	D.	2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION				
	E.	2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION				
	F.	2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION				
[4]	ENS in N	SURE that 2-HS-74-1C, LOOP 4 HL TO RHR SUCTION is IORMAL				
[5]	ENS SW	SURE that 2-XS-74-1, RHR SYSTEM ISOLATION TRANS is in AUX				
[6]	EN 10D	SURE that 2-BKR-74-1, 480V REAC MOV BD 2A1-A BKR) is OPEN.				
[7]	OPI RE/	EN compartment door for compartment 10D of 480V ACTOR MOV 2A1-A				
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6.3 Valve 2-FCV-74-1 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.3[8] through 6.3[17]

- [8] **DISENGAGE** the compartment locking devices at the top and bottom.
- [9] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus.
- [10] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs.

NOTE

Wire lifts are NOT required if MCC buckets are equipped with pull apart terminal blocks.

[11] **IF** the breaker compartment wiring hinders the breaker compartment from safely disengaging the board bus, **THEN**

DISCONNECT the wiring as needed **AND RECORD** on Appendix J or **REMOVE** door mounted devices **AND RECORD** on Appendix B.

[12] **REMOVE** the thermal overloads for 2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION

CV

- [13] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs.
- [14] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged.

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6.3	Valve	2-F	CV-74-1 Logic Test (continued)			
	[15]	IF t	he breaker compartment wiring was discon	nected, THEN		
	RECONNECT the wiring as needed AND RECORD on Appendix J or REINSTALL door devices AND RECORD on Appendix B.					
	[16]	IF t	he MCC bucket has pull apart terminal bloc	ks, THEN		
		EN	SURE the blocks re-engage.			
	[17]	EN bot	GAGE the compartment locking devices at com of the compartment.	the top and		
	[18]	CL(RE/	DSE compartment door for compartment 10 ACTOR MOV 2A1-A	D of 480V		
	[19]	CLO	DSE 2-BKR-74-1, 480V REAC MOV BD 2A	1-A BKR 10D		
			WARNING	· · · · · · · · · · · · · · · · · · ·		
Arc	Flash PP	E pe	r TI-300 will be required for steps 6.3[20] th	rough 6.3[22]		
·	[20]	OP RE	EN compartment door for compartment 10E ACTOR MOV 2A1-A with the breaker close ew-driven defeater.	0 of 480V d by using the		

- [21] **VERIFY** the red LED on the BFD is lit indicating the phase rotation for the BFD is correct.
- [22] **CLOSE** compartment door for compartment 10D of 480V REACTOR MOV 2A1-A
- [23] **OPEN** 2-BKR-74-1, 480V REAC MOV BD 2A1-A BKR 10D.
- [24] **OPEN** compartment door for compartment 10D of 480V REACTOR MOV 2A1-A

Da		ate
6.3 Val	ve 2-FCV-74-1 Logic Test (continued)	
	WARNING	
Arc Flash F	PPE per TI-300 will be required for step 6.3[25]	
[25] REMOVE the A Phase penetration fuse of 2-FU-213-A110/32 in compartment 10D of 480V REACTOR MOV 2A1-A.	
		CV
[26] CLOSE compartment door for compartment 10D of 480V REACTOR MOV 2A1-A.	
[27	CLOSE 2-BKR-74-1, 480V REAC MOV BD 2A1-A BKR 10D.	<u> </u>
[28	PLACE 2-HS-74-1C, LOOP 4 HL TO RHR SUCTION to OPEN and then to NORMAL.	
[29	VERIFY that the breaker 2-BKR-74-1, 480V REAC MOV BD 2A1-A BKR 10D trips OPEN.	
[30] CLOSE 2-BKR-74-1, 480V REAC MOV BD 2A1-A BKR 10D.	
[31	PLACE a handheld jumper across the terminal block points 3 (10DC1) to point 7 (10DC2) in the back of compartment 10D of 480V REACTOR MOV 2A1-A.	
[32	PLACE 2-HS-74-1C, LOOP 4 HL TO RHR SUCTION to CLOSE and then to NORMAL.	·
[33	VERIFY that the breaker 2-BKR-74-1, 480V REAC MOV BD 2A1-A BKR 10D trips OPEN.	
[34] OPEN compartment door for compartment 10D of 480V REACTOR MOV 2A1-A	·

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6.3 Valve 2-FCV-74-1 Logic Test (continued)					
	WARNING				
Arc Flash PPE	E per TI-300 will be required for steps 6.3[35] th	rough 6.3[45]			
[35]	REINSTALL the A Phase penetration fuse of 2-FU-213-A110/32 in compartment 10D of 480 MOV 2A1-A.	V REACTOR			
	· · · · ·				
[20]	DISENCACE the competence to align devices				
[36]	bottom.				
[37]	PULL the breaker compartment forward until the stabs disengage from the board bus.	he compartment			
[38]	ENGAGE the compartment locking devices at bottom of the compartment while the bucket is to prevent the bucket from accidentally engaging stabs.	the top and on the outside ng the bus			
	NOTE				
Wire lifts are I	NOT required if MCC buckets are equipped with	n pull apart terminal blocks.			
[39]	IF the breaker compartment wiring hinders the compartment from safely disengaging the boar	breaker rd bus, THEN			
	DISCONNECT the wiring as needed AND REC Appendix J or REMOVE door mounted devices on Appendix B.	CORD on s AND RECORD			
[40]	REINSTALL the thermal overloads for 2-FCV- HOT LEG TO RHR SUCTION.	74-1, LOOP 4			
		CV			
[41]	DISENGAGE the locking devices at the top an breaker compartment to allow the breaker buc engage the bus stabs.	nd bottom of the ket to fully			

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6.3	Valve	Valve 2-FCV-74-1 Logic Test (continued)						
	[42]	INSTALL the breaker bucket into the compar that the bus stabs are fully engaged.	tment, ensuring					
	[43]	IF the breaker compartment wiring was disco	nnected, THEN					
	RECONNECT the wiring as needed AND RECORD on Appendix J or REINSTALL door devices AND RECORD on Appendix B.							
	[44]	IF the MCC bucket has pull apart terminal blo	ocks, THEN					
		ENSURE the blocks re-engage.						
	[45] ENGAGE the compartment locking devices at the top and bottom of the compartment.							
	[46]	[46] CLOSE compartment door for compartment 10D of 480V REACTOR MOV 2A1-A.						
	[47]	CLOSE 2-BKR-74-1, 480V REAC MOV BD 2	A1-A BKR 10D.					
	[48]	PLACE 2-XS-74-1, RHR SYSTEM ISOLATIC NORMAL	ON TRANS SW in					
	[49]	ENSURE the following Integrated Computer points are in scan:	System (ICS)					
		A. FD2189						
		B. FD2190	· · · · · · · · · · · · · · · · · · ·					
	[50]	VERIFY ICS point FD2189 displays "PWR O	N"					
	 [51] ENSURE the following transfer switches on RX MOV Boards 2A NORMAL: 2-XS-63-8, RHR HTX A TO CVCS CHG PUMP 		RX MOV Boards 2A1-A are in					
			PUMP					
		• 2-XS-74-1, RHR SYSTEM ISOLATION	TRANS SW					
	[52]	PLACE hand switch 2-HS-74-1C, LOOP 4 H SUCTION to OPEN and then to NORMAL.	L TO RHR					
	[53]	VERIFY valve 2-FCV-74-1, LOOP 4 HOT LE SUCTION does NOT open.	G TO RHR					

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6.3	Valve	2-FCV-74-1 Logic Test (continued)	
	[54]	PLACE hand switch 2-HS-74-1A, LOOP 4 HL T SUCTION to OPEN and while valve 2-FCV-74-7 LEG TO RHR SUCTION is opening, PLACE ha 2-HS-74-1A, LOOP 4 HL TO RHR SUCTION to RELEASE .	O RHR 1, LOOP 4 HOT and switch CLOSE AND
	[55]	VERIFY the following indications:	
		A. 2-HS-74-1A red light ON.	
		B. 2-HS-74-1A green light OFF.	
•		C. 2-HS-74-1C red light ON.	
		D. 2-HS-74-1C green light OFF.	
		 E. Valve is OPEN using local position indicate 5.0[22]) 	or (Acc Crit
	[56]	VERIFY ICS point FD2190 displays "NOT CLS"	•
	[57]	PLACE hand switch 2-HS-74-1C, LOOP 4 HL T SUCTION to CLOSE and then to NORMAL.	
	[58]	VERIFY valve 2-FCV-74-1, LOOP 4 HOT LEG SUCTION does NOT close.	TO RHR
	[59]	PLACE hand switch 2-HS-74-1A, LOOP 4 HL T SUCTION to CLOSE and while valve 2-FCV-74 HOT LEG TO RHR SUCTION is closing, PLAC 2-HS-74-1A, LOOP 4 HL TO RHR SUCTION to RELEASE .	TO RHR I-1, LOOP 4 IE hand switch IO OPEN AND
	[60]	VERIFY the following indications:	
		A. 2-HS-74-1A red light OFF	
		B. 2-HS-74-1A green light ON	
·		C. 2-HS-74-1C red light OFF	
		D. 2-HS-74-1C green light ON	
		E. Valve is CLOSED using local position indic	cator
	[61]	VERIFY ICS point FD2190 displays "CLOSED"	•

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6.3 Valve	2-FCV-74-1 Logic Test (continu	ed)		
	NOT	E		
Stopwatch tin handswitch 2 LOOP 4 HOT sequentially t	ning of 2-FCV-74-1, LOOP 4 HOT HS-74-1A, LOOP 4 HL TO RHR S LEG TO RHR SUCTION. Perforr p obtain stroke time data.	LEG TO RHR 3UCTION, and n steps 6.3[62]	SUCTION, will I locally at 2-FC]/6.3[63] and 6.3	be done at /-74-1, 8[64]/6.3[65]
[62]	SIMULTANEOUSLY PLACE har 4 HL TO RHR SUCTION, to the 0	ndswitch 2-HS- OPEN position	-74-1A, LOOP AND	
	START stopwatches.			
[63]	STOP stopwatches when 2-FCV RHR SUCTION, reaches the OP	-74-1, LOOP 4 EN position Al	HOT LEG TO ND	
	RECORD stroke times below:			
	A. Remote Open Time (Acc Cr	rit 5.0[31])		
			seconds	(≤ 120 secs)
	M&TE	Cal Due Dat	e	
	B. Local Open Time	`		
			seconds	(≤ 120 secs)
	M&TE	Cal Due Date	e	

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6.3	Valve	2-FCV-74-1 Logic Test (continu	ied)		
	[64]	SIMULTANEOUSLY PLACE has 4 HL TO RHR SUCTION, to the	ndswitch 2-HS CLOSE positio	S-74-1A, LOOP on AND	
		START stopwatches.			 .
	[65]	STOP stopwatches when 2-FCV RHR SUCTION, reaches the CL	-74-1, LOOP OSE position	4 HOT LEG TO AND	
		RECORD stroke times below:			
		A. Remote Close Time (Acc C	rit 5.0[31])		
				seconds	(≤ 120 secs)
		M&TE	Cal Due Da	te	
		B. Local Close Time		. •	
				seconds	(≤ 120 secs)
		M&TE	Cal Due Da	te	
	. [66]	ENSURE Annunciator Window 1 2A1-A/2A2-A, is CLEAR.	49-C, 480 RX	MOV BD	
	[67]	ENSURE Event Display Monitor BD 2A1-A/2A2-A XS IN AUX, NO	reports 149-C DRMAL	3480 RX MOV	
	[68]	PLACE transfer switch 2-XS-74- TRANS SW to AUX.	1, RHR SYST	EM ISOLATION	
	[69]	VERIFY Annunciator Window 14 2A1-A/2A2-A ALARMS (Acc Cri	9-C, 480 RX I t 5.0[2]) .	MOV BD	
	[70]	VERIFY Event Display Monitor re 2A1-A/2A2-A XS IN AUX, ALAR	eports 149-C - M	480 RX MOV BD	
	[71]	PLACE transfer switch 2-XS-74- TRANS SW to NORMAL.	1, RHR SYST	EM ISOLATION	
	[72]	VERIFY Annunciator Window 14 2A1-A/2A2-A, is CLEAR.	9-C, 480 RX	MOV BD	

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6.3	Valve	e 2-F	CV-74-1 Logic Test (continued)	
	[73]	VE 2A	RIFY Event Display Monitor reports 149-C 4 1-A/2A2-A XS IN AUX, NORMAL	80 RX MOV BD
	[74]	PL/ TR/	ACE transfer switch 2-XS-74-1, RHR SYSTI ANS SW to AUX.	EM ISOLATION
	[75]	PL/ SU	ACE hand switch 2-HS-74-1A, LOOP 4 HL ⁻ CTION to OPEN AND RELEASE.	
	[76]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG CTION does NOT open.	TO RHR
	[77]	PL/ SU trav to 0	ACE hand switch 2-HS-74-1C, LOOP 4 HL ⁻ CTION to OPEN and then to NORMAL, whil veling PLACE 2-HS-74-1C, LOOP 4 HL TO CLOSE and then to NORMAL.	TO RHR e valve is RHR SUCTION
	[78]	VE	RIFY the following indications:	
		⁻ A.	2-HS-74-1C red light ON.	
	·	В.	2-HS-74-1C green light OFF.	<u>.</u>
		C.	2-HS-74-1A red light OFF.	
		D.	2-HS-74-1A green light OFF.	· · · · · · · · · · · · · · · · · · ·
		E.	Valve is OPEN using local position indicate 5.0[22])	or (Acc Crit
	[79]	PL/ SU	ACE hand switch 2-HS-74-1A, LOOP 4 HL ⁻ CTION to CLOSE AND RELEASE .	
	[80]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG CTION does NOT close.	TO RHR
	[81]	PL/ SU trav to 0	ACE hand switch 2-HS-74-1C, LOOP 4 HL ⁻ CTION to CLOSE and then to NORMAL, wh reling PLACE 2-HS-74-1C, LOOP 4 HL TO DPEN and then to NORMAL.	TO RHR hile valve is RHR SUCTION

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6.3	Valve	2-F	CV-74-1 Log	ic Test (continu	ed)	• •	
	[82]	VEI	RIFY the follo	owing indications	:		
		Α.	2-HS-74-10	C red light OFF			
		В.	2-HS-74-10	C green light ON			
		C.	2-HS-74-1/	۲ed light OFF			
		D.	2-HS-74-1/	A green light OFF			
		Ε.	Valve is CL	OSED using loca	al position indi	cator	
	[83]	OP	EN 2-BKR-74	4-1 in 480V RX N	10V BD 2A1-A	A, COMPT 10D.	
	[84]	VE	RIFY ICS poi	int FD2189 displa	iys "PWR OFf	Ξ".	
				WARN	ING		
Arc	Flash PP	E pe	r TI-300 will I	be required for st	ep 6.3[85].		
	[85]	MA RE	NUALLY TR AC MOV BD	IP the thermal ov 2A1-A BKR 10D	verload for 2-E	KR-74-1, 480V	
	[86]	CL 100	OSE 2-BKR- D.	74-1 in 480V RX	MOV BD 2A1	-A, COMPT	
	[87]	PL/ SU	ACE control : CTION to the	switch 2-HS-74-1 • OPEN and then	C, LOOP 4 H to NORMAL.	_ TO RHR	
	[88]	VEI SU	RIFY that val CTION does	lve 2-FCV-74-1, L NOT open (Acc	.00P 4 HOT Crit 5.0[1]).	LEG TO RHR	
	[89]	DE Par Byp	PRESS and nel 4F on 480 pass.	HOLD the armat	ure of relay K 2A1-A to simul	5 in back of ate Overload	
	[90]	PL/ SU	ACE control CTION to the	switch 2-HS-74-1 OPEN and then	C, LOOP 4 H to NORMAL.	L TO RHR	
	[91]	VEI SU	RIFY valve 2 CTION OPEI	-FCV-74-1, LOO NS (Acc Crit 5.0	P 4 HOT LEG [1]) .	TO RHR	

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6.3	Valve	2-FCV-74-1 Logic Test (continued)	
	[92]	RELEASE K5 relay armature.	
	[93]	OPEN 2-BKR-74-1 in 480V RX MOV BD 2A1-A, COMPT 10D	·
		WARNING	
Arc F	Flash PPI	E per TI-300 will be required for step 6.3[94].	
	[94]	RESET the thermal overload for 2-BKR-74-1, 480V REAC MOV BD 2A1-A BKR 10D.	i
			CV
	[95]	CLOSE 2-BKR-74-1 in 480V RX MOV BD 2A1-A, COMPT 10D.	
	[96]	PLACE hand switch 2-HS-74-1C, LOOP 4 HL TO RHR SUCTION to CLOSE and then to NORMAL.	
	[97]	LIFT wire 10D05 in 2-L-358A (Az 341, El. 716) (Pressure Switch).	
•			CV
	[98]	PLACE hand switch 2-HS-74-1C, LOOP 4 HL TO RHR SUCTION to OPEN and then to NORMAL.	
	[99]	VERIFY valve 2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION does NOT open.	
	[100]	RELAND wire 10D05 in 2-L-358A.(Az 341, El. 716)	
			CV
	[101]	PLACE transfer switch 2-XS-74-1, RHR SYSTEM ISOLATION TRANS SW to NORMAL.	N
	[102]	ENSURE transfer switch 2-XS-63-1 is in NORMAL.	

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6.3	Valve	Valve 2-FCV-74-1 Logic Test (continued)			
	[103]	EN PU	SURE transfer switch 2-XS-63-72, CNTMT SMP A-A is in NORMAL.		
	[104]	[104] OPEN valve 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL using 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT.			
	[105]	[105] PLACE hand switch 2-HS-74-1A, LOOP 4 HL TO RHR SUCTION to OPEN AND RELEASE .			
	[106]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG CTION does NOT OPEN.	TO RHR	
	[107] CLOSE valve 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL using 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT.			SUMP TO RHR SUMP TO	
	[108]	IF a danger tag is placed on 2-FCV-63-1, THEN			
		RE	QUEST a temporary lift of the clearance.		
	[109]	[109] OPEN valve 2-FCV-63-1, RWST TO RHR SUCTION using 2-HS-63-1A, RWST TO RHR ECCS SUCTION.		TION using	
	[110]	PL SU	ACE hand switch 2-HS-74-1A, LOOP 4 HL		
	[111]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG ICTION does NOT OPEN.	TO RHR	
	[112]	 [112] CLOSE valve 2-FCV-63-1, RWST TO RHR SUCTION using 2-HS-63-1A, RWST TO RHR ECCS SUCTION. [113] IF a temporary lift was obtained in step 6.3[108], THEN 		CTION using	
	[113]], THEN	
		RE	-ESTABLISH the clearance on 2-FCV-63-1	· . · · · · · · · · · · · · · · · · · ·	
	[114]	ОР ТВ	PEN test switch in the jumper across termina 115-10, Panel 2-R-54 (RCS LOW Pressure	ls TB115-9 and Permissive).	
	[115]	Pla SU	ace hand switch 2-HS-74-1A, LOOP 4 HL TO ICTION to OPEN and RELEASE .	O RHR	
	[116]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG ICTION did NOT open.	TO RHR	

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6.3	Valve	2-F	CV-74-1 Logic Test (continued)	
	[117]	EN 2, 8	SURE Annunciator Window 113-E, RHR SU 3, 9 OPEN & HI PRESS, is CLEAR.	CT FCV-74-1,
	[118]	EN HL/ NO	SURE Event Display Monitor reports 113-E /RHR FCV OPEN AND HI PRESS (FCV-74- /RMAL.	LOOP 4 1, 2, 8, 9),
	[119]	CL and	OSE test switch in the jumper across termina TB115-10, Panel 2-R-54.	als TB115-9
	[120]	CL and	OSE test switch in the jumper across termina 1 TB112-2, Panel 2-R-54 (RCS High Pressu	als TB112-1 [.] e)
	[121]	PL/ SU	ACE hand switch 2-HS-74-1A, LOOP 4 HL T CTION to OPEN AND RELEASE.	O RHR
	[122]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG CTION OPENS.	TO RHR
	[123]	VE 8, 9	RIFY Annunciator Window 113-E, RHR SUC OPEN & HI PRESS, ALARMS (Acc Crit 5 .	CT FCV-74-1, 2, 0[23]) .
	[124]	VE FC	RIFY Event Display Monitor reports 113-E L V OPEN AND HI PRESS (FCV-74-1, 2, 8, 9	OOP 4 HL/RHR), ALARM
	[125]	PL/ SU	ACE hand switch 2-HS-74-1A, LOOP 4 HL ⁻ CTION to CLOSE AND RELEASE.	
	[126]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG CTION CLOSES.	TO RHR
	[127]	VE 8, 9	RIFY Annunciator Window 113-E, RHR SUC OPEN & HI PRESS, is CLEAR.	CT FCV-74-1, 2,
	[128]	VE FC	RIFY Event Display Monitor reports 113-E L V OPEN AND HI PRESS (FCV-74-1, 2, 8, 9	OOP 4 HL/RHR), NORMAL.
	[129]	ОР ТВ	EN test switch in the jumper across termina 112-2, Panel 2-R-54.	Is TB112-1 and
	[130]	CL and	OSE test switch in the jumper across termin d TB214-11, Panel 2-R-55 (RCS High Press	als TB214-10 ure)
	[131]	Pla SU	ce hand switch 2-HS-74-1A, LOOP 4 HL TC CTION to OPEN and RELEASE .) RHR

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6.3	Valve	2-F	CV-74-1 Logic Test (continued)		
	[132]	VEI SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG CTION OPENS.	TO RHR	
	[133]	VE 8, 9	RIFY Annunciator Window 113-E, RHR SUG OPEN & HI PRESS, ALARMS (Acc Crit 5	CT FCV-74-1, 2 0[23]).	2,
	[134]	VE I FC	RIFY Event Display Monitor reports 113-E L √ OPEN AND HI PRESS (FCV-74-1, 2, 8, 9	oop 4 hl/Rh), alarm.	R
	[135]	Pla SU	ce hand switch 2-HS-74-1A, LOOP 4 HL TO CTION to CLOSE and RELEASE .) RHR	
	[136]	VE SU	RIFY valve 2-FCV-74-1, LOOP 4 HOT LEG CTION CLOSES.	TO RHR	
	[137]	VE 8, 9	RIFY Annunciator Window 113-E, RHR SUG OPEN & HI PRESS, is CLEAR.	CT FCV-74-1, 2	2,
	[138]	VE FC	RIFY Event Display Monitor reports 113-E L V OPEN AND HI PRESS (FCV-74-1, 2, 8, 9	.00P 4 HL/RH), NORMAL.	R
	[139]	OP and	EN test switch in the jumper across termina I TB214-11, Panel 2-R-55.	ls TB214-10	
	[140]	RE TB	MOVE the temporary jumper across termina 115-10, Panel 2-R-54 on the field side.	als TB115-9 an	d
					CV

[141] **VERIFY** successful completion of Subsection 6.3 (Acc Crit 5.0[32], 5.0[33], 5.0[34]).

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6.4 Valve 2-FCV-74-2 Logic Test

	NOTE
Arc Flash PPI	E per TI-300 will be required during section 6.4 of the test.
[1]	VERIFY the following prerequisites have been completed for Subsection 6.4. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[19], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[2], 4.3[5]-4.3[7])
[2]	ESTABLISH communications between MCR Panel 2-M-6, 480V RX MOV BOARD 2B1-B, and at valve 2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION, Acc Room 4 El 718 Az 300.
[3]	ENSURE the following valves are CLOSED from 2-M-6:
	A. 2-FCV-63-1, RWST TO RHR SUCTION
	B. 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP 2B-B ISOL
	C. 2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION
	D. 2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION
	E. 2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION
	F. 2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION
[4]	ENSURE that 2-HS-74-2C, LOOP 4 HL TO RHR SUCTION is
[5]	ENSURE that 2-XS-74-2, RHR SYSTEM ISOLATION TRANS
[6]	ENSURE that 2-BKR-74-2, 480V RX MOV BD 2B1-B, COMPT 10D is OPEN.
[7]	OPEN compartment door for compartment 10D of 480V REACTOR MOV 2B1-B

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6.4 Valve 2-FCV-74-2 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.4[8] through 6.4[17]

- [8] **DISENGAGE** the compartment locking devices at the top and bottom.
- [9] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus.
- [10] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs.

NOTE

Wire lifts are NOT required if MCC buckets are equipped with pull apart terminal blocks.

[11] **IF** the breaker compartment wiring hinders the breaker compartment from safely disengaging the board bus, **THEN**

DISCONNECT the wiring as needed **AND RECORD** on Appendix J or **REMOVE** door mounted devices **AND RECORD** on Appendix B.

[12] **REMOVE** the thermal overloads for 2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION

CV

- [13] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs.
- [14] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged.

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6.4	Valve	2-FCV-74-2 Logic Test (continued)	
	[15]	IF the breaker compartment wiring was disco	nnected, THEN
* .		RECONNECT the wiring as needed AND RE Appendix J or REINSTALL door devices ANI Appendix B.	CORD on D RECORD on
	[16]	IF the MCC bucket has pull apart terminal blo	ocks, THEN
		ENSURE the blocks re-engage.	· · · ·
	[17]	ENGAGE the compartment locking devices a bottom of the compartment.	t the top and
	[18]	CLOSE compartment door for compartment REACTOR MOV 2B1-B	10D of 480V
	[19]	CLOSE 2-BKR-74-2, 480V RX MOV BD 2B1	-B, COMPT 10D.
		WARNING	
Arc F	-lash PP	E per TI-300 will be required for steps 6.4[20] t	hrough 6.4[22]
	[20]	OPEN compartment door for compartment 10 REACTOR MOV 2B1-B with the breaker closs screw-driven defeater.	D of 480V ed by using the
	[21]	VERIFY the red LED on the BFD is lit indicate rotation for the BFD is correct.	ng the phase
	[22]	CLOSE compartment door for compartment REACTOR MOV 2B1-B	10D of 480V
	[23]	OPEN 2-BKR-74-2, 480V RX MOV BD 2B1-	3, COMPT 10D.
	[24]	OPEN compartment door for compartment 10 REACTOR MOV 2B1-B	DD of 480V

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6.4 Valv	e 2-FCV-74-2 Logic Test (continued)	
	WARNING	
Arc Flash Pf	PE per TI-300 will be required for step 6.4[25]	
[25]	REMOVE the A Phase penetration fuse of 2-FL in compartment 10D of 480V REACTOR MOV	J-213-B110/32 2B1-B.
[26]	CLOSE compartment door for compartment 10 REACTOR MOV 2B1-B.	D of 480V
[27]	CLOSE 2-BKR-74-2, 480V RX MOV BD 2B1-B	, COMPT 10D.
[28]	PLACE 2-HS-74-2C, LOOP 4 HL TO RHR SUG and then to NORMAL.	CTION to OPEN
[29]	VERIFY that the breaker 2-BKR-74-2, 480V RX 2B1-B, COMPT 10D trips OPEN.	(MOV BD
[30]	CLOSE 2-BKR-74-2, 480V RX MOV BD 2B1-B	, COMPT 10D.
[31]	PLACE a handheld jumper across the terminal (10DC1) to point 7 (10DC2) in the back of comp 480V REACTOR MOV 2B1-B.	block points 3 partment 10D of
[32]	PLACE 2-HS-74-2C, LOOP 4 HL TO RHR SUG CLOSE and then to NORMAL.	CTION to
	VERIFY that the breaker 2-BKR-74-2, 480V RX	(MOV BD
[33]	2B1-B, COMPT 10D trips OPEN.	

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6.4	6.4 Valve 2-FCV-74-2 Logic Test (continued)										
		WARNING									
Arc F	Arc Flash PPE per TI-300 will be required for steps 6.4[35] through 6.4[45]										
· /	[35]	REINSTALL the A Phase penetration fuse of 2-FU-213-B110/32 in compartment 10D of 480 MOV 2B1-B.	V REACTOR								
			CV								
	[36]	DISENGAGE the compartment locking devices bottom.	at the top and								
	[37]	PULL the breaker compartment forward until the stabs disengage from the board bus.	ne compartment								
	[38]	ENGAGE the compartment locking devices at to bottom of the compartment while the bucket is to prevent the bucket from accidentally engaging stabs.	the top and on the outside ng the bus								
		NOTE									
Wire	lifts are l	NOT required if MCC buckets are equipped with	pull apart terminal blocks.								
	[39]	IF the breaker compartment wiring hinders the compartment from safely disengaging the boar	breaker d bus, THEN								
·		DISCONNECT the wiring as needed AND REC Appendix J or REMOVE door mounted devices on Appendix B.	SORD on AND RECORD								
	[40]	REINSTALL the thermal overloads for 2-FCV- HOT LEG TO RHR SUCTION.	74-2, LOOP 4								
			CV								
	[41]	DISENGAGE the locking devices at the top an breaker compartment to allow the breaker buck engage the bus stabs.	d bottom of the ket to fully								

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6.4	Valve	2-F	CV-74-2 Logic Test (continued)	:
	[42]	INS tha	STALL the breaker bucket into the compartn t the bus stabs are fully engaged.	nent, ensuring
	[43]	IF t	he breaker compartment wiring was disconr	nected, THEN
		RE App App	CONNECT the wiring as needed AND REC bendix J or REINSTALL door devices AND bendix B.	ORD on RECORD on
	[44]	IF t	he MCC bucket has pull apart terminal bloc	ks, THEN
		EN	SURE the blocks re-engage.	
	[45]	EN bot	GAGE the compartment locking devices at tom of the compartment.	the top and
	[46]	CL RE	OSE compartment door for compartment 10 ACTOR MOV 2B1-B.	D of 480V
	[47]	CL	OSE 2-BKR-74-2, 480V RX MOV BD 2B1-E	3, COMPT 10D.
	[48]	PL/ NO	ACE 2-XS-74-2, RHR SYSTEM ISOLATION RMAL	N TRANS SW in
	[49]	EN poi	SURE the following Integrated Computer Syntaxic nts are in scan:	ystem (ICS)
		Α.	FD2341	
		В.	FD2342	
	[50]	VE	RIFY ICS point FD2341 displays "PWR ON"	n
	[51]	EN 2B	SURE the following transfer switches on RX 1-B are in NORMAL:	(MOV Boards
		•	2-XS-63-11, RHR HTX B TO SIS PUMP	
		•	2-XS-74-2, RHR SYSTEM ISOLATION TR	RANS SW
	[52]	PL. SU	ACE hand switch 2-HS-74-2C, LOOP 4 HL CTION to OPEN and then to NORMAL.	TO RHR
	[53]	VE SU	RIFY valve 2-FCV-74-2, LOOP 4 HOT LEG	TO RHR

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6.4	Valve	e 2-F	CV-74-2 Logic Test (continued)		
	[54]	PL/ SU LE(2-H RE	ACE hand switch 2-HS-74-2A, LOOP 4 HL CTION to OPEN and while valve 2-FCV-74 G TO RHR SUCTION is opening, PLACE h IS-74-2A, LOOP 4 HL TO RHR SUCTION to ILEASE.	TO RHR -2, LOOP 4 HOT and switch o CLOSE AND	
	[55]	VE	RIFY the following indications:		
		A.	2-HS-74-2A red light ON.		
		Β.	2-HS-74-2A green light OFF.		,
		C.	2-HS-74-2C red light ON.		
		D.	2-HS-74-2C green light OFF.	-	
		E.	Valve is OPEN using local position indicat 5.0[22])	tor (Acc Crit	
	[56]	VE	RIFY ICS point FD2342 displays "NOT CLS		
	[57]	PL. SU	ACE hand switch 2-HS-74-2C, LOOP 4 HL CTION to CLOSE and then to NORMAL.	TO RHR	
	[58]	VE SU	RIFY valve 2-FCV-74-2, LOOP 4 HOT LEG CTION does NOT close.	TORHR	
	[59]	PL SU HO 2-H RE	ACE hand switch 2-HS-74-2A, LOOP 4 HL CTION to CLOSE and while valve 2-FCV-7 DT LEG TO RHR SUCTION is closing, PLAC HS-74-2A, LOOP 4 HL TO RHR SUCTION to ELEASE.	TO RHR 4-2, LOOP 4 CE hand switch o OPEN AND	
	[60]	VE	RIFY the following indications:		
		Α.	2-HS-74-2A red light OFF		
		В.	2-HS-74-2A green light ON		
		C.	2-HS-74-2C red light OFF		
		D.	2-HS-74-2C green light ON		<u></u>
		E.	Valve is CLOSED using local position indi	icator	

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6.4 Valv	e 2-FCV-74-2 Logic Test (conti	nued)		•
	Ν	DTE		
Stopwatch ti handswitch 2 LOOP 4 HO sequentially	ming of 2-FCV-74-2, LOOP 4 HC 2-HS-74-2A, LOOP 4 HL TO RHI T LEG TO RHR SUCTION. Perf to obtain stroke time data.	OT LEG TO RHF R SUCTION, and orm steps 6.4[62	R SUCTION, will d locally at 2-FC 2]/6.4[63] and 6.4	be done at ∨-74-2, ៛[64]/6.4[65]
[62]	SIMULTANEOUSLY PLACE	nandswitch 2-HS le OPEN position	8-74-2A, LOOP n AND	
	START stopwatches.			
[63]	START stopwatches. STOP stopwatches when 2-FC RHR SUCTION, reaches the C	CV-74-2, LOOP OPEN position A	4 HOT LEG TO ND	
[63]	START stopwatches. STOP stopwatches when 2-FC RHR SUCTION, reaches the C RECORD stroke times below:	CV-74-2, LOOP DPEN position A	4 HOT LEG TO ND	
[63]	 START stopwatches. STOP stopwatches when 2-FC RHR SUCTION, reaches the C RECORD stroke times below: A. Remote Open Time (Acc 	CV-74-2, LOOP A DPEN position A Crit 5.0[31])	4 HOT LEG TO ND	
[63]	 START stopwatches. STOP stopwatches when 2-FC RHR SUCTION, reaches the C RECORD stroke times below: A. Remote Open Time (Acc 	CV-74-2, LOOP DPEN position A Crit 5.0[31])	4 HOT LEG TO ND	 (≤ 120 secs)
[63]	START stopwatches. STOP stopwatches when 2-FC RHR SUCTION, reaches the C RECORD stroke times below: A. Remote Open Time (Acc M&TE	CV-74-2, LOOP DPEN position A Crit 5.0[31]) Cal Due Da	4 HOT LEG TO ND seconds	(≤ 120 secs)
[63]	START stopwatches. STOP stopwatches when 2-FC RHR SUCTION, reaches the C RECORD stroke times below: A. Remote Open Time (Acc M&TE B. Local Open Time	CV-74-2, LOOP DPEN position A Crit 5.0[31]) Cal Due Da	4 HOT LEG TO ND seconds	(≤ 120 secs)
[63]	START stopwatches. STOP stopwatches when 2-FC RHR SUCTION, reaches the C RECORD stroke times below: A. Remote Open Time (Acc M&TE B. Local Open Time	CV-74-2, LOOP DPEN position A Crit 5.0[31]) Cal Due Da	4 HOT LEG TO ND seconds te seconds	(≤ 120 secs) (≤ 120 secs)

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6.4	Valve	2-FCV-74-2	Logic Test (contin	ued)		
	[64]	SIMULTANE 4 HL TO RH	EOUSLY PLACE ha R SUCTION, to the	andswitch 2-HS CLOSE positio	5-74-2A, LOOP on AND	
		START stop	watches.			
	[65]	STOP stopw RHR SUCTI	vatches when 2-FC∖ ON, reaches the CL	/-74-2, LOOP 4 OSE position 4	HOT LEG TO	
		RECORD st	roke times below:			
		A. Remote	e Close Time (Acc C	Crit 5.0[31])		
					seconds	(≤ 120 secs)
		M&TE		_ Cal Due Da	te	
		B. Local C	lose Time			
					seconds	(≤ 120 secs)
		M&TE		Cal Due Da	te	
	[66]	ENSURE Ar 2B1-B/2B2-{	nnunciator Window 3, is CLEAR.	150-C, 480 RX	MOV BD	
	[67]	ENSURE EN BD 2B1-B/2	vent Display Monitor B2-B XS IN AUX, N	⁻ reports 150-C ORMAL	480 RX MOV	
	[68]	PLACE tran TRANS SW	sfer switch 2-XS-74 to AUX.	-2, RHR SYST	EM ISOLATION	
	[69]	VERIFY Anr 2B1-B/2B2-I	nunciator Window 1 B ALARMS (Acc Cr	50-C, 480 RX I it 5.0[3]) .	MOV BD	
	[70]	VERIFY Eve 2B1-B/2B2-I	ent Display Monitor B XS IN AUX, ALAF	reports 150-C 4 RM	180 RX MOV BD	
	[71]	PLACE tran TRANS SW	sfer switch 2-XS-74 to NORMAL.	-2, RHR SYST	EM ISOLATION	
	[72]	VERIFY Anr 2B1-B/2B2-I	nunciator Window 1 B, is CLEAR.	50-C, 480 RX I	MOV BD	

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6.4	Valve	2-FCV-74-2 Logic Test (continued)		
	[73]	VERIFY Event Display Monitor reports 150-0 2B1-B/2B2-B XS IN AUX, NORMAL	C 480 RX MOV BD	
	[74]	PLACE transfer switch 2-XS-74-2, RHR SYS TRANS SW to AUX.	STEM ISOLATION	
	[75]	PLACE hand switch 2-HS-74-2A, LOOP 4 H SUCTION to OPEN AND RELEASE .	L TO RHR	- <u>-</u>
	[76]	VERIFY valve 2-FCV-74-2, LOOP 4 HOT LE SUCTION does NOT open.	G TO RHR	
	[77]	PLACE hand switch 2-HS-74-2C, LOOP 4 H SUCTION to OPEN and then to NORMAL, w traveling PLACE 2-HS-74-2C, LOOP 4 HL T to CLOSE and then to NORMAL.	L TO RHR hile valve is O RHR SUCTION	
	[78]	VERIFY the following indications:		
		A. 2-HS-74-2C red light ON.		
		B. 2-HS-74-2C green light OFF.		
		C. 2-HS-74-2A red light OFF.		
		D. 2-HS-74-2A green light OFF.		<u> </u>
		 E. Valve is OPEN using local position indic 5.0[22]) 	cator (Acc Crit	
	[79]	PLACE hand switch 2-HS-74-2A, LOOP 4 H SUCTION to CLOSE AND RELEASE .	L TO RHR	
	[80]	VERIFY valve 2-FCV-74-2, LOOP 4 HOT LE SUCTION does NOT close.	G TO RHR	
	[81]	PLACE hand switch 2-HS-74-2C, LOOP 4 H SUCTION to CLOSE and then to NORMAL, traveling PLACE 2-HS-74-2C, LOOP 4 HL T	IL TO RHR while valve is O RHR SUCTION	

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6.4	Valve	2-FCV-74-2 Logic Test (continued)	
	[82]	VERIFY the following indications:	
		A. 2-HS-74-2C red light OFF	
		B. 2-HS-74-2C green light ON	· · ·
		C. 2-HS-74-2A red light OFF	
		D. 2-HS-74-2A green light OFF	
		E. Valve is CLOSED using local position	n indicator
	[83]	OPEN 2-BKR-74-2 in 480V RX MOV BD	2B1-B, COMPT 10D.
	[84]	VERIFY ICS point FD2341 displays "PW	R OFF"
Arc F	lash PP	E per TI-300 will be required for step 6.4[8	5]
Arc F	ilash PP [85]	E per TI-300 will be required for step 6.4[8 MANUALLY TRIP the thermal overload 1 480V RX MOV BD 2B1-B, COMPT 10D.	5] or 2-BKR-74-2 in
Arc F	ilash PP [85]	E per TI-300 will be required for step 6.4[8 MANUALLY TRIP the thermal overload for a step 6.4[8 480V RX MOV BD 2B1-B, COMPT 10D.	5] For 2-BKR-74-2 in
Arc F	[85] [86]	E per TI-300 will be required for step 6.4[8 MANUALLY TRIP the thermal overload for the the the thermal overload for the	5] for 2-BKR-74-2 in D 2B1-B, COMPT
Arc F	[85] [86] [87]	E per TI-300 will be required for step 6.4[8 MANUALLY TRIP the thermal overload for the thermal overload for the thermal overload for the the the the thermal overload for the	5] for 2-BKR-74-2 in D 2B1-B, COMPT P 4 HL TO RHR RMAL
Arc F	[85] [86] [87] [88]	E per TI-300 will be required for step 6.4[8 MANUALLY TRIP the thermal overload for 480V RX MOV BD 2B1-B, COMPT 10D. CLOSE 2-BKR-74-2 in 480V RX MOV BI 10D. PLACE control switch 2-HS-74-2C, LOO SUCTION to the OPEN and then to NOR VERIFY that valve 2-FCV-74-2, LOOP 4 SUCTION does NOT open (Acc Crit 5.0	5] for 2-BKR-74-2 in D 2B1-B, COMPT P 4 HL TO RHR MAL. HOT LEG TO RHR [1]) .
Arc F	[85] [85] [86] [87] [88] [89]	E per TI-300 will be required for step 6.4[8 MANUALLY TRIP the thermal overload for 480V RX MOV BD 2B1-B, COMPT 10D. CLOSE 2-BKR-74-2 in 480V RX MOV BI 10D. PLACE control switch 2-HS-74-2C, LOO SUCTION to the OPEN and then to NOR VERIFY that valve 2-FCV-74-2, LOOP 4 SUCTION does NOT open (Acc Crit 5.0 DEPRESS and HOLD the armature of repanel 16D on 480V RX MOV BD 2B1-B Bypass.	5]
Arc F	[85] [85] [86] [87] [88] [89] [90]	ANUALLY TRIP the thermal overload for the formation of the thermal overload for the thermal overload for the thermal overload for the the the thermal overload for the the the the the the the the thermal overload for the	5]

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6.4	Valve	2-FCV-74-2 Logic Test (continued)		-
	[92]	RELEASE K6 relay armature.		
	[93]	OPEN 2-BKR-74-2 in 480V RX MOV BD 2B1-6	B, COMPT 10D.	
		WARNING		
Arc F	lash PPE	E per TI-300 will be required for step 6.4[94]		
	[94]	RESET the thermal overload for 2-BKR-74-2 ir BD 2B1-B, COMPT 10D.	1 480V RX MOV	
				CV
	[95]	CLOSE 2-BKR-74-2 in 480V RX MOV BD 2B1 10D.	-B, COMPT	
	[96]	PLACE hand switch 2-HS-74-2C, LOOP 4 HL SUCTION to CLOSE and then to NORMAL.	TO RHR	
	[97]	LIFT wire 10D05 in 2-L-183 (Az 351, El. 716) (Switch).	Pressure	
·				CV
	[98]	PLACE hand switch 2-HS-74-2C, LOOP 4 HL SUCTION to OPEN and then to NORMAL.	TO RHR	
	[99]	VERIFY valve 2-FCV-74-2, LOOP 4 HOT LEG SUCTION does NOT open.	TO RHR	<u>.</u>
	[100]	RELAND wire 10D05 in 2-L-183.		
				CV
	[101]	PLACE transfer switch 2-XS-74-2, RHR SYST TRANS SW to NORMAL.	EM ISOLATION	
	[102]	ENSURE transfer switch 2-XS-63-1 is in NOR	MAL	

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6.4	Valve	2-F	CV-74-2 Logic Test (continued)	
	[103]	EN PU	SURE transfer switch 2-XS-63-73, CNTMT S MP B-B is in NORMAL.	
	[104]	OP PU RH	EN valve 2-FCV-63-73, CONTAINMENT SL MP 2B-B ISOL using 2-HS-63-73A, CNTMT R PMP B SUCT.	IMP TO RHR SUMP TO
	[105]	PL/ SU	ACE control switch 2-HS-74-2A, LOOP 4 HL CTION to OPEN AND RELEASE.	TO RHR
	[106]	VE SU	RIFY valve 2-FCV-74-2, LOOP 4 HOT LEG CTION does NOT OPEN.	TO RHR
	[107]	CL PU RH	OSE valve 2-FCV-63-73, CONTAINMENT S MP 2B-B ISOL using 2-HS-63-73A, CNTMT R PMP B SUCT.	UMP TO RHR SUMP TO
	[108]	IF a	a danger tag is placed on 2-FCV-63-1, THE	J
		RE	QUEST a temporary lift of the clearance.	
	[109]	ОР 2-⊦	EN valve 2-FCV-63-1, RWST TO RHR SUC S-63-1A, RWST TO RHR ECCS SUCTION	TION using
	[110]	PL SU	ACE control switch 2-HS-74-2A, LOOP 4 HL CTION to OPEN AND RELEASE.	. TO RHR
	[111]	VE SU	RIFY valve 2-FCV-74-2, LOOP 4 HOT LEG CTION does NOT OPEN.	TO RHR
	[112]	CL 2-⊦	OSE valve 2-FCV-63-1, RWST TO RHR SU IS-63-1A, RWST TO RHR ECCS SUCTION	CTION using
	[113]	IF a	a temporary lift was obtained in step 6.4[108], THEN
		RE	-ESTABLISH the clearance on 2-FCV-63-1.	· · · · · · · · · · · · · · · · · · ·
	[114]	ОР ТВ:	EN test switch in the jumper across termina 208-2, Panel 2-R-55 (RCS LOW Pressure P	s TB208-1 and ermissive).
	[115]	Pla SU	i ce hand switch 2-HS-74-2A, LOOP 4 HL TO CTION to OPEN and RELEASE .) RHR
	[116]	VE SU	RIFY valve 2-FCV-74-2, LOOP 4 HOT LEG CTION did NOT open.	TO RHR

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6.4	Valve	2-F	CV-74-2 Logi	c Test (continued)		
	[117]	EN 2, 8	SURE Annund 3, 9 OPEN & H	ciator Window 113-E, RHR S HI PRESS, is CLEAR.	JCT FCV-74-1,	
	[118]	CL and	OSE test swite d TB208-2, Pa	ch in the jumper across termin anel 2-R-55.	nals TB208-1	
	[119]	CL and	OSE test swite d TB112-2, Pa	ch in the jumper across termin anel 2-R-54 (RCS High Pressa	nals TB112-1 ure).	
	[120]	PL SU	ACE hand swi CTION to OPI	itch 2-HS-74-2A, LOOP 4 HL EN AND RELEASE.	TO RHR	
	[121]	VE SU	RIFY valve 2-I CTION OPEN	FCV-74-2, LOOP 4 HOT LEG IS.	TO RHR	,
	[122]	VE 8, 9	RIFY Annunci OPEN & HI F	iator Window 113-E, RHR SU PRESS, ALARMS (Acc Crit \$	CT FCV-74-1, 2, 5.0[23]).	
	[123]	PL SU	ACE hand swi CTION to CLC	itch 2-HS-74-2A, LOOP 4 HL OSE AND RELEASE.	TO RHR	
	[124]	VE SU	RIFY valve 2-I CTION CLOS	FCV-74-2, LOOP 4 HOT LEG ES.	TO RHR	
	[125]	VE 8, 9	RIFY Annunci 9 OPEN & HI F	iator Window 113-E, RHR SU PRESS, is CLEAR.	CT FCV-74-1, 2,	<u></u>
	[126]	ОР ТВ	EN test switch 112-2, Panel 2	h in the jumper across termina 2-R-54.	als TB112-1 and	<u>.</u>
	[127]	CL and	OSE test swite d TB214-11, P	ch in the jumper across termin Panel 2-R-55 (RCS High Pres	nals TB214-10 sure).	
	[128]	Pla SU	ice hand swite CTION to OPI	ch 2-HS-74-2A, LOOP 4 HL T EN and RELEASE.	O RHR	
	[129]	VE SU	RIFY valve 2- CTION OPEN	FCV-74-2, LOOP 4 HOT LEG IS.	TO RHR	
	[130]	VE 8, 9	RIFY Annunci 9 OPEN & HI I	iator Window 113-E, RHR SU PRESS, ALARMS (Acc Crit \$	CT FCV-74-1, 2, 5.0[23]).	
	[131]	Pla SU	ace hand swite	ch 2-HS-74-2A, LOOP 4 HL T	O RHR	

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6.4	Valve	2-FCV-74-2 Logic Test (continued)	
	[132]	VERIFY valve 2-FCV-74-2, LOOP 4 HOT LEG SUCTION CLOSES.	TO RHR
	[133]	VERIFY Annunciator Window 113-E, RHR SU 8, 9 OPEN & HI PRESS, is CLEAR.	CT FCV-74-1, 2,
	[134]	OPEN test switch in the jumper across termina and TB214-11, Panel 2-R-55.	Is TB214-10
	[135]	REMOVE the temporary jumper across termina TB208-2, Panel 2-R-55 on the field side.	als TB208-1 and
			CV
	[136]	VERIFY successful completion of Subsection 6 5.0[32], 5.0[33], 5.0[34]).	6.4 (Acc Crit

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6.5 Valve 2-FCV-74-8 Logic Test

	NOTE	
Arc Flash PF	^D E per TI-300 will be required during section 6.5 of the test.	
[1]	VERIFY the following prerequisites have been completed for Subsection 6.5. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[3], 4.3[5]-4.3[7])	
[2]	ESTABLISH communications between MCR Panel 2-M-6, 480V RX MOV BOARD 2A2-A, and at valve 2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION, Acc Room 4 EI 718 Az 304.	
[3]	ENSURE the following valves are CLOSED from 2-M-6:	
	A. 2-FCV-63-1, RWST TO RHR SUCTION	
	B. 2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION	
	C. 2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION	
	D. 2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION	
·	E. 2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION	
[4]	ENSURE that 2-BKR-74-8, 480V REAC MOV BD 2A2-A BKR 5C is OPEN.	
[5]	OPEN compartment door for compartment 5C of 480V REACTOR MOV 2A2-A	
	WARNING	

Arc Flash PPE per TI-300 will be required for steps 6.5[6] through 6.5[15]

[6] **DISENGAGE** the compartment locking devices at the top and bottom.

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5.5	Valve	e 2-FCV-74-8 Logic Test (continued)	
	[7]	PULL the breaker compartment forward until the stabs disengage from the board bus.	ne compartment
	[8]	ENGAGE the compartment locking devices at bottom of the compartment while the bucket is to prevent the bucket from accidentally engagin stabs.	the top and on the outside ng the bus
		NOTE	
Wire	lifts are	NOT required if MCC buckets are equipped with	pull apart terminal blocks.
	[9]	IF the breaker compartment wiring hinders the compartment from safely disengaging the boar	breaker d bus, THEN
		DISCONNECT the wiring as needed AND REC Appendix J or REMOVE door mounted devices on Appendix B.	CORD on s AND RECORD
	[10]	REMOVE the thermal overloads for 2-FCV-74- BYPASS RHR SUCTION	8, 2-FCV-74-2
	Ŧ		CV
	[11]	DISENGAGE the locking devices at the top an breaker compartment to allow the breaker buck engage the bus stabs.	d bottom of the ket to fully
	[12]	INSTALL the breaker bucket into the compartr that the bus stabs are fully engaged.	ment, ensuring
	[13]	IF the breaker compartment wiring was discon	nected, THEN
		RECONNECT the wiring as needed AND REC Appendix J or REINSTALL door devices AND Appendix B.	CORD on RECORD on
	[14]	IF the MCC bucket has pull apart terminal bloc	ks, THEN
		ENSURE the blocks re-engage.	
	[15]	ENGAGE the compartment locking devices at	the top and

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6.5	Valve	2-F	CV-74-8 Logic Test (continued)	
	[16]	CL RE	OSE compartment door for compartment 50 ACTOR MOV 2A2-A	C of 480V
	[17]	ĊL	OSE 2-BKR-74-8, 480V REAC MOV BD 2A	2-A BKR 5C.
			WARNING	
Arc F	lash PP	E pe	r TI-300 will be required for steps 6.5[18] th	rough 6.5[20]
	[18]	OP RE	EN compartment door for compartment 5C ACTOR MOV 2A2-A with the breaker close ew-driven defeater.	of 480V d by using the
	[19]	VE rota	RIFY the red LED on the BFD is lit indicatin ation for the BFD is correct.	g the phase
	[20]	CL RE	OSE compartment door for compartment 50 ACTOR MOV 2A2-A	C of 480V
	[21]	OP	EN 2-BKR-74-8, 480V REAC MOV BD 2A2	2-A BKR 5C
	[22]	OP RE	EN compartment door for compartment 5C ACTOR MOV 2A2-A	of 480V
			WARNING	
Arc F	lash PP	E pe	r TI-300 will be required for step 6.5[23]	
	[23]	RE 480	MOVE the A Phase penetration fuse of 2-F IV RX MOV BD 2A2-A, COMPT 5C.	U-213-A26/32 in

- [24] **CLOSE** compartment door for compartment 5C of 480V REACTOR MOV 2A2-A.
- [25] **CLOSE** 2-BKR-74-8, 480V REAC MOV BD 2A2-A BKR 5C.

CV

[26] **PLACE** 2-HS-74-8, RHR SYSTEM ISOLATION BYPASS CNTL to OPEN and RELEASE.

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6.5 Valv	e 2-FCV-74-8 Logic Test (continued)	
[27]	VERIFY that the breaker 2-BKR-74-8, 480V RI 2A2-A BKR 5C trips OPEN.	EÀC MOV BD
[28]	CLOSE 2-BKR-74-8, 480V REAC MOV BD 2A	2-A BKR 5C.
[29]	PLACE a handheld jumper across the terminal (5CC1) to point 7 (5CC2) in the back of compa 480V REACTOR MOV 2A2-A.	l block points 3 rtment 5C of
[30]	PLACE 2-HS-74-8, RHR SYSTEM ISOLATION CNTL to CLOSE and RELEASE.	N BYPASS
[31]	VERIFY that the breaker 2-BKR-74-8, 480V RI 2A2-A BKR 5C trips OPEN.	EAC MOV BD
[32]	OPEN compartment door for compartment 5C REACTOR MOV 2A2-A	of 480V
[32]	OPEN compartment door for compartment 5C REACTOR MOV 2A2-A WARNING	of 480V
[32] Arc Flash P	OPEN compartment door for compartment 5C REACTOR MOV 2A2-A WARNING PE per TI-300 will be required for steps 6.5[33] th	of 480V rough 6.5[43]
[32] Arc Flash P [33]	OPEN compartment door for compartment 5C REACTOR MOV 2A2-A WARNING PE per TI-300 will be required for steps 6.5[33] th REINSTALL the A Phase penetration fuse of 2-FU-213-A26/32 in 480V RX MOV BD 2A2-A,	of 480V rough 6.5[43]
[32] Arc Flash P [33]	OPEN compartment door for compartment 5C REACTOR MOV 2A2-A WARNING PE per TI-300 will be required for steps 6.5[33] th REINSTALL the A Phase penetration fuse of 2-FU-213-A26/32 in 480V RX MOV BD 2A2-A,	of 480V rough 6.5[43] , COMPT 5C
[32] Arc Flash P [33]	OPEN compartment door for compartment 5C REACTOR MOV 2A2-A WARNING PE per TI-300 will be required for steps 6.5[33] th REINSTALL the A Phase penetration fuse of 2-FU-213-A26/32 in 480V RX MOV BD 2A2-A, DISENGAGE the compartment locking devices bottom.	of 480V rough 6.5[43] , COMPT 5C. CV s at the top and
[32] Arc Flash P [33] [34]	OPEN compartment door for compartment 5C REACTOR MOV 2A2-A WARNING PE per TI-300 will be required for steps 6.5[33] th REINSTALL the A Phase penetration fuse of 2-FU-213-A26/32 in 480V RX MOV BD 2A2-A, DISENGAGE the compartment locking devices bottom. PULL the breaker compartment forward until th stabs disengage from the board bus.	of 480V rough 6.5[43] COMPT 5C CV s at the top and he compartment

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6.5 Valve	e 2-FCV-74-8 Logic Test (continued)		
	NOTE		· · · ·
Wire lifts are	NOT required if MCC buckets are equippe	d with pull apart terminal	blocks.
[37]	IF the breaker compartment wiring hinde compartment from safely disengaging the	rs the breaker e board bus, THEN	
	DISCONNECT the wiring as needed AN Appendix J or REMOVE door mounted d on Appendix B.	D RECORD on evices AND RECORD	
[38]	REINSTALL the thermal overloads for 2- 2-FCV-74-2 BYPASS RHR SUCTION.	-FCV-74-8,	
			CV
[39]	DISENGAGE the locking devices at the breaker compartment to allow the breaker engage the bus stabs.	top and bottom of the er bucket to fully	
[40]	INSTALL the breaker bucket into the contrast the bus stabs are fully engaged.	npartment, ensuring	
. [41]	IF the breaker compartment wiring was o	lisconnected, THEN	
	RECONNECT the wiring as needed ANI Appendix J or REINSTALL door devices Appendix B.	ORECORD on AND RECORD on	
[42]	IF the MCC bucket has pull apart termination	al blocks, THEN	
	ENSURE the blocks re-engage.		
[43]	ENGAGE the compartment locking device bottom of the compartment.	ces at the top and	
[44]	CLOSE compartment door for compartmeter REACTOR MOV 2A2-A.	ent 5C of 480V	· ·
[45]	CLOSE 2-BKR-74-8, 480V REAC MOV	BD 2A2-A BKR 5C.	

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6.5	Valve 2-FCV-74-8 Logic Test (continued)						
·	[46]	ENSURE the following Integrated Computer System (ICS) point is in scan:					
		A. Y	0336D				
	[47]	VERIF	Y the following indications:				
		A. 2	-HS-74-8 red light OFF				
		B. 2	-HS-74-8 green light ON				
		C. 2	-XI-74-8 red light OFF				
		D. 2	-XI-74-8 green light ON				
		E. V	alve is CLOSED using local position ind	icator			
	[48]	PLAC BYPA 2-FC hand s CNTL	E hand switch 2-HS-74-8, RHR SYSTEM SS CNTL to OPEN, and while valve 2-Fe /-74-2 BYPASS RHR SUCTION is oper switch 2-HS-74-8, RHR SYSTEM ISOLA to CLOSE AND RELEASE .	M ISOLATION CV-74-8, ning, PLACE TION BYPASS			
	[49]	VERIF SUCT	Y valve 2-FCV-74-8, 2-FCV-74-2 BYP ION continues to open	ASS RHR			
	[50]	VERIF	Y the following indications:				
		A. 2	-HS-74-8 red light ON				
		B. 2	-HS-74-8 green light OFF				
		C. 2	-XI-74-8 red light ON				
		D. 2	-XI-74-8 green light OFF		<u> </u>		
		E. V 5	alve is OPEN using local position indica .0[22])	tor (Acc Crit			
	[51]	VERI	Y ICS point Y0336D displays "OPEN".				

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6.5	Valve 2-FCV-74-8 Logic Test (continued)					
	[52]	PLACE hand switch 2-HS-74-8, RHR SYSTEM BYPASS CNTL to CLOSE and while valve 2-F 2-FCV-74-2 BYPASS RHR SUCTION is closin hand switch 2-HS-74-8, RHR SYSTEM ISOLA CNTL to OPEN AND RELEASE .	/ ISOLATION CV-74-8, ng, PLACE TION BYPASS			
	[53]	VERIFY valve 2-FCV-74-8, 2-FCV-74-2 BYPA SUCTION continues to close.	ASS RHR			
	[54]	VERIFY the following indications:				
		A. 2-HS-74-8 red light OFF	-			
		B. 2-HS-74-8 green light ON				
		C. 2-XI-74-8 red light OFF				
		D. 2-XI-74-8 green light ON				
	[55]	VERIEY ICS point Y0336D displays "NOT OP"	•			
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6.5 Valve	2-FCV-74-8 Logic Test (con	tinued)				
	N	NOTE				
Stopwatch tin handswitch 2 2-FCV-74-8, 2 6.5[58]/6.5[59	ning of 2-FCV-74-8, 2-FCV-74 HS-74-8, RHR SYSTEM ISOL 2-FCV-74-2 BYPASS RHR S] sequentially to obtain stroke	-2 BYPASS RHR _ATION BYPASS UCTION. Perform time data.	SUCTION, will CNTL, and loca steps 6.5[56]/6	be done at lly at .5[57] and		
[56]	SIMULTANEOUSLY PLACE SYSTEM ISOLATION BYPA: AND	handswitch 2-HS SS CNTL, to the C	-74-8, RHR DPEN position			
	START stopwatches.					
[57]	STOP stopwatches when 2-F RHR SUCTION, reaches the	CV-74-8, 2-FCV- OPEN position A	74-2 BYPASS ND			
	RECORD stroke times below	r:				
	A. Remote Open Time (Ac	c Crit <u>5</u> .0[31])				
			seconds	(≤ 120 secs)		
	M&TE	Cal Due Dat	te			
	B. Local Open Time	•				
			seconds	(≤ 120 secs)		
	М&ТЕ	Cal Due Da	te			
		· .				

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6.5	Valve	2-F	CV-74-8 Logic Test (continu	ed)			
	[58]	SIN SYS AN	IULTANEOUSLY PLACE har STEM ISOLATION BYPASS (D	ndswitch 2-HS CNTL, to the C	-74-8, RHR LOSE position		
		ST	ART stopwatches.		· ·	, -	
	[59]	STO RH	DP stopwatches when 2-FCV R SUCTION, reaches the CL0	-74-8, 2-FCV- OSE position /	74-2 BYPASS AND		
		RE	CORD stroke times below:				
		Α.	Remote Close Time (Acc C	rit 5.0[31])		-	
					seconds	(≤ ′	120 secs)
		M&	TE	Cal Due Dat	e	_	
		В.	Local Close Time				
					seconds	(≤ ′	120 secs)
		M&	TE	Cal Due Dat	e	_	
	[60]	OP	EN 2-BKR-74-8 in 480V RX N	IOV BD 2A2-A	A, COMPT 5C.		
			WARN	ING			
Arc	Flash PP	E pe	r TI-300 will be required for st	ep 6.5[61].			
	[61]	MA 480	NUALLY TRIP the thermal of NUALLY TRIP the thermal of NU REAC MOV BD 2A2-A BK	verload for 2-E R 5C.	8KR-74-8-A,		
							CV
	[62]	CL	OSE 2-BKR-74-8-A, 480V RE	AC MOV BD	2A2-A BKR 5C	•	
	[63]	PL/ BY	ACE hand switch 2-HS-74-8, PASS CNTL to OPEN.	RHR SYSTEN	I ISOLATION		
	[64]	VE SU	RIFY that valve 2-FCV-74-8, 2 CTION does NOT open. (Acc	2-FCV-74-2 E : Crit 5.0[1])	BYPASS RHR		

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6.5	Valve	2-FCV-74-8 Logic Test (continued)	
	[65]	PLACE a jumper across terminals 2 and 12 (wi 5CSM), on the terminal strip of panel 5C on 480 2A2-A to simulate Overload Bypass.	res 5CY1 & 0V RX MOV BD
	[66]	PLACE control switch 2-HS-74-8, RHR SYSTE BYPASS CNTL to OPEN.	MISOLATION
,	[67]	VERIFY valve 2-FCV-74-8, 2-FCV-74-2 BYPA SUCTION OPENS (Acc Crit 5.0[1])	SS RHR
	[68]	REMOVE the jumper across terminals 2 and 12 5CSM), on the terminal strip of panel 5C on 480 2A2-A.	2 (wires 5CY1 & 0V RX MOV BD
	[69]	OPEN 2-BKR-74-8 in 480V RX MOV BD 2A2-A	A, COMPT 5C.
		WARNING	· · · · · ·
Arc F	lash PP	E per TI-300 will be required for step 6.5[70].	
	[70]	RESET the thermal overload for 2-BKR-74-8-A MOV BD 2A2-A BKR 5C.	, 480V REAC
	[71]	CLOSE 2-BKR-74-8 in 480V RX MOV BD 2A2	-A, COMPT 5C.
	[72]	CLOSE valve 2-FCV-74-8, 2-FCV-74-2 BYPA SUCTION using 2-HS-74-8, RHR SYSTEM ISC BYPASS CNTL.	SS RHR DLATION
	[73]	OPEN test switch in the jumper across termina TB121-2 Panel 2-R-54. (RCS Low Pressure Pe	Is TB121-1 and ermissive).
	[74]	PLACE hand switch 2-HS-74-8, RHR SYSTEM BYPASS CNTL to OPEN AND RELEASE .	

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6.5	Valve	2-F	CV-74-8 Logic Test (continued)	
	[75]	VEI SU	RIFY valve 2-FCV-74-8, 2-FCV-74-2 BYPA CTION did NOT open.	SS RHR
	[76]	CL and	DSE test switch in the jumper across termin I TB121-2. Panel 2-R-54.	als TB121-1
	[77]	EN: FC	SURE Annunciator Window 113-E, RHR SL √-74-1,2,8,9 OPEN & HI PRESS, is CLEAR	IСТ
	[78]	CL and	OSE test switch in the jumper across termin I TB112-2, Panel 2-R-54 (RCS HI Pressure)	als TB112-1)
	[79]	PL/ BYI	ACE hand switch 2-HS-74-8, RHR SYSTEM PASS CNTL to OPEN AND RELEASE.	
	[80]	VE FC 5.0	RIFY Annunciator Window 113-E, RHR SU(√-74-1,2,8,9 OPEN &.HI PRESS, ALARMS [23]) .	CT (Acc Crit
	[81]	PL/ BY	ACE hand switch 2-HS-74-8, RHR SYSTEM PASS CNTL to CLOSE AND RELEASE.	1 ISOLATION
	[82]	VE FC	RIFY Annunciator Window 113-E, RHR SU(V-74-1,2,8,9 OPEN & HI PRESS, is CLEAR	Ст
	[83]	ОР ТВ	EN test switch in the jumper across termina 112-2. Panel 2-R-54.	Is TB112-1 and
	[84]	CL and	OSE test switch in the jumper across termin TB214-11. Panel 2-R-55 (RCS HI Pressur	als TB214-10 e)
	[85]	PL BY	ACE hand switch 2-HS-74-8, RHR SYSTEM PASS CNTL to OPEN AND RELEASE.	1 ISOLATION
	[86]	VE FC 5.0	RIFY Anniunciator Window 113-E, RHR SU V-74-1,2,8,9 OPEN & HI PRPSS, ALARMS [23]) .	CT (Acc Crit
	[87]	PL BY	ACE hand switch 2-HS-74-8, RHR SYSTEM PASS CNTL to CLOSE AND RELEASE.	I ISOLATION
	[88]	VE FC	RIFY Annunciator Window 113-E RHR SUC V-74-1,2,8,9 OPEN & HI PRESS, is CLEAR	СТ К

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6.5	Valvo	e 2-FCV-74-8 Logic Test (continued)	
	[89]	OPEN test switch in the jumper across termina and TB214-11, Panel 2-R-55.	als TB214-10
	[90]	REMOVE the temporary jumper across termin TB121-2, Panel 2-R-54 on the field side.	als TB121-1 and
			CV
	[91]	VERIFY successful completion of Subsection 5.0[32], 5.0[33], 5.0[34]).	6.5 (Acc Crit

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6.6 Valve 2-FCV-74-9 Logic Test

	NOTE	
Arc Flash PF	PE per TI-300 will be required during section 6.6 of the test.	
[1]	VERIFY the following prerequisites have been completed for Subsection 6.6. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[5]-4.3[7])	
[2]	ESTABLISH communications between MCR Panel 2-M-6, 480V RX MOV Board 2B1-B, and at valve 2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION, Inside Polar Crane Wall EI 706 Az 354.	
[3]	ENSURE the following valves are CLOSED from 2-M-6:	
	A. 2-FCV-63-1, RWST TO RHR SUCTION	
	B. 2-FCV-74-1, LOOP 4 HOT LEG TO RHR SUCTION	
	C. 2-FCV-74-2, LOOP 4 HOT LEG TO RHR SUCTION	<u></u>
	D. 2-FCV-74-8, 2-FCV-74-2 BYPASS RHR SUCTION	
	E. 2-FCV-74-9, 2-FCV-74-1 BYPASS RHR SUCTION	
[4]	ENSURE that 2-BKR-74-9, 480V RX MOV BD 2B1-B, COMPT 5C is OPEN.	
[5]	OPEN compartment door for compartment 5C of 480V REACTOR MOV 2B1-B	
	WARNING	

Arc Flash PPE per TI-300 will be required for steps 6.6[6] through 6.6[15]

[6] **DISENGAGE** the compartment locking devices at the top and bottom.

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6.6	Valve	2-FCV-74-9 Logic Test (continued)		
	[7]	PULL the breaker compartment forward unti stabs disengage from the board bus.	l the compartment	
	[8]	ENGAGE the compartment locking devices a bottom of the compartment while the bucket to prevent the bucket from accidentally enga stabs.	at the top and is on the outside ging the bus 	
		NOTE	·	
Wire	e lifts are	NOT required if MCC buckets are equipped w	ith pull apart terminal block	s.
	[9]	IF the breaker compartment wiring hinders the compartment from safely disengaging the bo	ne breaker bard bus, THEN	
	·	DISCONNECT the wiring as needed AND R Appendix J or REMOVE door mounted device on Appendix B.	ECORD on ces AND RECORD	
	[10]	REMOVE the thermal overloads for 2-FCV-7 BYPASS RHR SUCTION	′4-9, 2-FCV-74-1 	
		·		CV
	[11]	DISENGAGE the locking devices at the top a breaker compartment to allow the breaker bu engage the bus stabs.	and bottom of the ucket to fully 	
	[12]	INSTALL the breaker bucket into the compa that the bus stabs are fully engaged.	rtment, ensuring	
	[13]	IF the breaker compartment wiring was disco	onnected, THEN	
	·.	RECONNECT the wiring as needed AND RE Appendix J or REINSTALL door devices AN Appendix B.	ECORD on D RECORD on	
	[14]	IF the MCC bucket has pull apart terminal bl	ocks, THEN	
		ENSURE the blocks re-engage.		
	[15]	ENGAGE the compartment locking devices a bottom of the compartment.	at the top and	

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6.6	Valve	2-FCV-74-9 Logic Test (continued)	
	[16]	CLOSE compartment door for compartment 5C REACTOR MOV 2B1-B	of 480V
	[17]	CLOSE 2-BKR-74-9, 480V RX MOV BD 2B1-B,	COMPT 5C.
		WARNING	
Arc I	-lash PPI	E per TI-300 will be required for steps 6.6[18] thro	ough 6.6[20]
	[18]	OPEN compartment door for compartment 5C o REACTOR MOV 2B1-B with the breaker closed screw-driven defeater.	f 480V by using the
	[19]	VERIFY the red LED on the BFD is lit indicating rotation for the BFD is correct.	the phase
	[20]	CLOSE compartment door for compartment 5C REACTOR MOV 2B1-B	of 480V
	[21]	OPEN 2-BKR-74-9, 480V RX MOV BD 2B1-B, 0	COMPT 5C.
	[22]	OPEN compartment door for compartment 5C o REACTOR MOV 2B1-B	f 480V
		WARNING	· · · · · · · · · · · · · · · · · · ·
Arc I	Flash PPI	E per TI-300 will be required for step 6.6[23]	
	[23]	REMOVE the A Phase penetration fuse of 2-FU compartment 5C of 480V REACTOR MOV 2B1-	-213-B15/22 in -B
	[24]	CLOSE compartment door for compartment 5C REACTOR MOV 2B1-B	of 480V
	[25]	CLOSE 2-BKR-74-9, 480V RX MOV BD 2B1-B,	COMPT 5C.
	[26]	PLACE 2-HS-74-9, RHR SYSTEM ISOLATION CNTL to OPEN and RELEASE.	BYPASS

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6.6 Valv	e 2-FCV-74-9 Logi	c Test (continued)		
. [27]	VERIFY that the I 2B1-B, COMPT 5	breaker 2-BKR-74-9, 480V R 5C trips OPEN.	X MOV BD	
[28]	CLOSE 2-BKR-7	4-9, 480V RX MOV BD 2B1-E	B, COMPT 5C.	
[29]	PLACE a handhe (5CC1) to point 7 480V REACTOR	eld jumper across the termina (5CC2) in the back of compa MOV 2B1-B.	l block points 3 artment 5C of	
[30]	PLACE 2-HS-74- CNTL to CLOSE	9, RHR SYSTEM ISOLATIOI and RELEASE.	N BYPASS	
[31]	VERIFY that the I 2B1-B, COMPT 5	breaker 2-BKR-74-9, 480V Rž 5C trips OPEN.	X MOV BD	
[32]	OPEN compartme REACTOR MOV	ent door for compartment 5C 2B1-B	of 480V	
	-	WARNING	· · · · · · · · · · · · · · · · · · ·	
Arc Flash PF	^{>} E per TI-300 will be	e required for steps 6.6[33] th	rough 6.6[43]	
[33]	REINSTALL the , 2-FU-213-B15/22 2B1-B.	A Phase penetration fuse of in compartment 5C of 480V	REACTOR MOV	
[33]	REINSTALL the , 2-FU-213-B15/22 2B1-B.	A Phase penetration fuse of in compartment 5C of 480V	REACTOR MOV	
[33]	REINSTALL the 2-FU-213-B15/22 2B1-B.	A Phase penetration fuse of in compartment 5C of 480V	REACTOR MOV	CV
[33]	REINSTALL the 2-FU-213-B15/22 2B1-B. DISENGAGE the bottom.	A Phase penetration fuse of in compartment 5C of 480V compartment locking devices	REACTOR MOV	CV
[33] [34] [35]	REINSTALL the 2-FU-213-B15/22 2B1-B. DISENGAGE the bottom. PULL the breake stabs disengage t	A Phase penetration fuse of in compartment 5C of 480V compartment locking devices r compartment forward until th from the board bus.	REACTOR MOV s at the top and he compartment	CV

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6.6 Valv	e 2-F	CV-74-9 Logic Test (continued)				
		NOTE				
Wire lifts are	NOT	required if MCC buckets are equipped with	pull apart terminal blocks.			
[37]	IF t con	he breaker compartment wiring hinders the npartment from safely disengaging the boar	breaker d bus, THEN			
	DIS App on	SCONNECT the wiring as needed AND REC pendix J or REMOVE door mounted devices Appendix B.	SORD on AND RECORD			
[38]	RE 2-F	INSTALL the thermal overloads for 2-FCV- CV-74-1 BYPASS RHR SUCTION.	74-9,			
		-	CV			
[39]	DIS bre eng	SENGAGE the locking devices at the top an aker compartment to allow the breaker buck gage the bus stabs.	d bottom of the ket to fully			
[40]	INS tha	STALL the breaker bucket into the compartr t the bus stabs are fully engaged.	nent, ensuring			
. [41]	IF t	he breaker compartment wiring was discon	nected, THEN			
	RE App App	CONNECT the wiring as needed AND REC pendix J or REINSTALL door devices AND pendix B.	ORD on RECORD on			
[42]	IF t	he MCC bucket has pull apart terminal bloc	ks, THEN			
	EN	SURE the blocks re-engage.				
[43]	EN bot	GAGE the compartment locking devices at tom of the compartment.	the top and			
[44]	CL RE	OSE compartment door for compartment 50 ACTOR MOV 2B1-B.	C of 480V			
[45]	CL	OSE 2-BKR-74-9, 480V RX MOV BD 2B1-E	3, COMPT 5C			

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.6	Valve	e 2-F	CV-74-9 Logic Test (continued)	
	[46]	EN poi	SURE the following Integrated Computer Synt is in scan:	vstem (ICS)
		Α.	Y0337D	
	[47]	VE	RIFY the following indications:	
		Α.	2-HS-74-9 red light OFF	
		В.	2-HS-74-9 green light ON	
		C.	2-XI-74-9 red light OFF	
		D.	2-XI-74-9 green light ON	
		E.	Valve is CLOSED using local position indi	cator
	[48]	PL BY 2-F har CN	ACE hand switch 2-HS-74-9, RHR SYSTEM PASS CNTL to OPEN, and while valve 2-FC CV-74-1 BYPASS RHR SUCTION is open nd switch 2-HS-74-9, RHR SYSTEM ISOLA TL to CLOSE AND RELEASE.	I ISOLATION CV-74-9, ing, PLACE TION BYPASS
	[49]	VE SU	RIFY valve 2-FCV-74-9, 2-FCV-74-1 BYPA CTION continues to open.	ASS RHR
	[50]	VE	RIFY the following indications:	
		Α.	2-HS-74-9 red light ON	
		В.	2-HS-74-9 green light OFF	
		C.	2-XI-74-9 red light ON	
		D.	2-XI-74-9 green light OFF	· · · · · · · · · · · · · · · · · · ·
		E.	Valve is OPEN using local position indicat 5.0[22])	or (Acc Crit
	[51]	VE	RIFY ICS point Y0337D displays "OPEN".	

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6.6	Valve	2-F	CV-74-9 Logic Test (continued)		
	[52]	PL/ BYI 2-F han CN	ACE hand switch 2-HS-74-9, RHR SYSTEM PASS CNTL to CLOSE and while valve 2-F CV-74-1 BYPASS RHR SUCTION is closin of switch 2-HS-74-9, RHR SYSTEM ISOLA TL to OPEN AND RELEASE.	1 ISOLATION CV-74-9, ng, PLACE TION BYPASS	
	[53]	VEI SU	RIFY valve 2-FCV-74-9, 2-FCV-74-1 BYPA CTION continues to close.	ASS RHR	· .
	[54]	VE	RIFY the following indications:		
		Α.	2-HS-74-9 red light OFF		
		В.	2-HS-74-9 green light ON		
		C.	2-XI-74-9 red light OFF		
		D.	2-XI-74-9 green light ON		
	[55]		DIEV ICS point V0222D diaploya "NOT OD"		

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6.6 Va	lve 2-FCV-74-9 Logic Test (c	continued)		
	<u>.</u>	NOTE		
Stopwatch handswitch 2-FCV-74- 6.6[58]/6.6	timing of 2-FCV-74-9, 2-FCV 1 2-HS-74-9, RHR SYSTEM IS 9, 2-FCV-74-1 BYPASS RHF [59] sequentially to obtain stro	-74-1 BYPASS RHR SOLATION BYPASS R SUCTION. Perforn oke time data.	R SUCTION, will CNTL, and loca n steps 6.6[56]/6	be done at lly at .6[57] and
[56	i] SIMULTANEOUSLY PLA SYSTEM ISOLATION BY AND	CE handswitch 2-HS PASS CNTL, to the C	6-74-9, RHR DPEN position	
	START stopwatches.	:		
[57] STOP stopwatches when RHR SUCTION, reaches	2-FCV-74-9, 2-FCV- the OPEN position A	74-1 BYPASS ND	
	RECORD stroke times be	low:		
	A. Remote Open Time ((Acc Crit 5.0[31])		······································
	· .		seconds	(≤ 120 secs)
	M&TE	Cal Due Da	te	
	B. Local Open Time			
			seconds	(≤ 120 secs
	M&TE	Cal Due Da	te	-
		,		
				.
				х
				•

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6.6	Valve	e 2-FCV-74-9 Logic Test (continu	ued)		
	[58]	SIMULTANEOUSLY PLACE has SYSTEM ISOLATION BYPASS AND	ndswitch 2-HS CNTL, to the C	0-74-9, RHR CLOSE position	
		START stopwatches.			
	[59]	STOP stopwatches when 2-FCV RHR SUCTION, reaches the CL	/-74-9, 2-FCV OSE position /	-74-1 BYPASS AND	
		RECORD stroke times below:			
		A. Remote Close Time (Acc C	crit 5.0[31])		
				seconds	(≤ 120 secs)
		M&TE	_ Cal Due Dat	te	
		B. Local Close Time			
				seconds	(≤ 120 secs)
		M&TE	_ Cal Due Dat	te	
	[60]	OPEN 2-BKR-74-9 in 480V RX I	MOV BD 2B1-I	B, COMPT 5C.	
		WARN	ling		
Arc F	Flash PP	E per TI-300 will be required for s	tep 6.6[61].		
	[61]	MANUALLY TRIP the thermal of 480V REAC MOV BD 2B1-B BK	verload for 2-E R 5C.	3KR-74-9-B,	
·					CV
		CLOSE 2-BKR-74-9 in 480V RX		-B, COMPT 5C.	
	[62]				•
	[62] [63]	PLACE hand switch 2-HS-74-9, BYPASS CNTL to OPEN.	RHR SYSTEN	I ISOLATION	
	[62] [63] [64]	 PLACE hand switch 2-HS-74-9, BYPASS CNTL to OPEN. VERIFY that valve 2-FCV-74-9, SUCTION does NOT open. (Action) 	RHR SYSTEN 2-FCV-74-1 E c Crit 5.0[1])	I ISOLATION	

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6.6	Valve	2-FCV-74	4-9 Logi	c Test (contin	ued)		
	[6 <u>5]</u>	PLACE a 5CSM), o 2B1-B to	a jumper on the te simulate	across termin rminal strip of e Overload By	als 2 and 12 (w panel 5C on 48 pass.	ires 5CY1 & 0V RX MOV BD	
							CV
	[66]	PLACE O	control s S CNTL t	witch 2-HS-74 o OPEN.	-9, RHR SYSTE	EM ISOLATION	
	[67]	VERIFY SUCTIO	valve 2- N OPEN	FCV-74-9, 2 ⁻ F IS (Acc Crit 5.	CV-74-1 BYPA 0[1])	ASS RHR	
	[68]	REMOV 5CSM), (2B1-B.	E the jun on the te	pper across ter rminal strip of	rminals 2 and 1 panel 5C on 48	2 (wires 5CY1 & 0V RX MOV BD	
							(IV
	[69]	OPEN 2-	-BKR-74	-9 in 480V RX	MOV BD 2B1-I	3, COMPT 5C.	
	[69]	OPEN 2-	-BKR-74	-9 in 480V RX WAR	MOV BD 2B1-I	B, COMPT 5C.	
Arc F	[69] Flash PP	OPEN 2- E per TI-3	-BKR-74 00 will b	-9 in 480V RX WAR e required for	MOV BD 2B1-I NING step 6.6[70].	3, COMPT 5C.	
Arc F	[69] Flash PP [70]	OPEN 2- E per TI-3 RESET t MOV BD	-BKR-74 00 will b the thern 2B1-B I	-9 in 480V RX WAR e required for a nal overload fo 3KR 5C.	MOV BD 2B1-F NING step 6.6[70]. r 2-BKR-74-9-B	3, COMPT 5C.	
Arc F	[69] Flash PP	OPEN 2- E per TI-3 RESET t MOV BD	-BKR-74 00 will b the thern 2B1-B I	-9 in 480V RX WAR e required for anal overload fo 3KR 5C.	MOV BD 2B1-I NING step 6.6[70]. r 2-BKR-74-9-B	3, COMPT 5C.	CV
Arc F	[69] Tash PP [70]	OPEN 2- E per TI-3 RESET t MOV BD	-BKR-74 00 will b the thern 2B1-B I 2-BKR-7	-9 in 480V RX WAR e required for al overload fo 3KR 5C.	MOV BD 2B1-F NING step 6.6[70]. r 2-BKR-74-9-B X MOV BD 2B1	3, COMPT 5C. , 480V REAC -B, COMPT 5C	 CV
Arc F	[69] Flash PP [70] [71] [72]	OPEN 2- E per TI-3 RESET t MOV BD CLOSE : SUCTIO BYPASS	-BKR-74 00 will b the therm 2B1-B I 2-BKR-7 valve 2-f N using 5 CNTL.	-9 in 480V RX WAR e required for a nal overload fo 3KR 5C. 4-9 in 480V R CV-74-9, 2-F 2-HS-74-9, RH	MOV BD 2B1-F NING step 6.6[70]. r 2-BKR-74-9-B X MOV BD 2B1 CV-74-1 BYPA IR SYSTEM IS0	3, COMPT 5C. , 480V REAC -B, COMPT 5C SS RHR DLATION	CV
Arc F	[69] [ash PP [70] [71] [72] [73]	OPEN 2- E per TI-3 RESET t MOV BD CLOSE 2 SUCTIO BYPASS OPEN te TB219-2	-BKR-74 00 will b the thern 2B1-B I 2B1-B I 2B1-B I 2B1-B I 2B1-B I 2CNTL N using CNTL S CNTL est switch Panel 2	-9 in 480V RX WAR e required for anal overload fo 3KR 5C. 4-9 in 480V R 5CV-74-9, 2-F 2-HS-74-9, RH n in the jumper -R-55. (RCS L	MOV BD 2B1-R NING step 6.6[70]. r 2-BKR-74-9-B X MOV BD 2B1 CV-74-1 BYPA IR SYSTEM ISO across termina ow Pressure Pe	3, COMPT 5C. -B, COMPT 5C -B, COMPT 5C ASS RHR DLATION Is TB219-1 and ermissive).	CV CV

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6.6	Valve	e 2-FCV-74-9 Logic Test (continued)		
	[75]	VERIFY valve 2-FCV-74-9, 2-FCV-74-1 BYPA SUCTION did NOT open.	SS RHR	
	[76]	CLOSE test switch in the jumper across termina and TB219-2. Panel 2-R-55.	als TB219-1	
	[77]	ENSURE Annunciator Window 113-E, RHR SU FCV-74-1,2,8,9 OPEN & HI PRESS, is CLEAR	СТ _	
1	[78]	CLOSE test switch in the jumper across termina and TB112-2, Panel 2-R-54 (RCS HI Pressure)	als TB112-1 	
	[79]	PLACE hand switch 2-HS-74-9, RHR SYSTEM BYPASS CNTL to OPEN AND RELEASE .	I ISOLATION	
~	[80]	VERIFY Annunciator Window 113-E, RHR SUC FCV-74-1,2,8,9 OPEN &.HI PRESS, ALARMS 5.0[23]).	CT (Acc Crit –	
	[81]	PLACE hand switch 2-HS-74-9, RHR SYSTEM BYPASS CNTL to CLOSE AND RELEASE .	I ISOLATION	
	. [82]	VERIFY Annunciator Window 113-E, RHR SUC FCV-74-1-2-8-9 OPEN & HI PRESS, is CLEAR	СТ 	
	[83]	OPEN test switch in the jumper across terminal TB112-2. Panel 2-R-54.	ls TB112-1 and	· -
	[84]	CLOSE test switch in the jumper across termina and TB214-11. Panel 2-R-55 (RCS HI Pressure	als TB214-10 e)	
	[85]	PLACE hand switch 2-HS-74-9, RHR SYSTEM BYPASS CNTL to OPEN AND RELEASE .	I ISOLATION	
	[86]	VERIFY Annunciator Window 113-E, RHR SUC FCV-74-1,2,8,9 OPEN & HI PRPSS, ALARMS 5.0[23]).	CT (Acc Crit -	
	[87]	PLACE hand switch 2-HS-74-9, RHR SYSTEN BYPASS CNTL to CLOSE AND RELEASE .	I ISOLATION	
	[88]	VERIFY Annunciator Window 113-E, RHR SUC FCV-74-1.2.8.9 OPEN & HI PRESS, is CLEAR	CT	

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6.6	Valve	e 2-FCV-74-9 Logic Test (continued)		
	[89]	OPEN test switch in the jumper across terr and TB214-11, Panel 2-R-55.	ninals TB214-10	
·	[90]	REMOVE the temporary jumper across ter T8219-2, Panel 2-R-55 on the field side.	minals TB219-1 and	
		•		
	[91]	VERIFY successful completion of Subsect 5.0[32], 5.0[33], 5.0[34]).	ion 6.6 (Acc Crit	
		、		

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6.7 Valve 2-FCV-74-12 Logic Test

		NOTE	
Arc Fl	ash PP	E per TI-300 will be required during section 6.7 of the test.	
	[1]	VERIFY the following prerequisites have been completed for Subsection 6.7. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7])	
	[2]	ESTABLISH communications between MCR Panel 2-M-6, 480V RX MOV Board 2A1-A, and at valve 2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE (A11V EI 689).	
	[3]	ENSURE that 2-BKR-74-10 in 6.9KV SD BD 2A-A Compt 14 is OPEN and RACKED DOWN.	
	[4]	ENSURE 2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE is CLOSED from 2-M-6.	
	[5]	LIFT the white wire at terminal block DD point 1 (cable number 2V1939A) on the 52 STA terminal strip inside 2-BKR-74-10, 6.9KV SD BD 2A-A Comp 14 Breaker Compartment.	
			CV
	[6]	ENSURE the following Integrated Computer System (ICS) points are in scan:	
		A. FD2192	
		B. FD2193	
	[7]	VERIFY ICS point FD2192 displays "PWR ON".	
	[8]	ENSURE the following transfer switch on RX MOV Board 2A1-A is in NORMAL:	า
		• 2-XS-74-12, RHR PUMP A-A MIN FLOW TRANS SW	
	[9]	PLACE hand switch 2-HS-74-12C, RHR PMP A MINI FLOW to OPEN and then to NORMAI	

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6.7 Valve	2-FCV-74-12 Logic Test (continued)	
[10]	VERIFY valve 2-FCV-74-12, RHR PUMP 2A-A FLOW VALVE does NOT open.	
[11]	PLACE hand switch 2-HS-74-12A, RHR PMP OPEN, and while valve 2-FCV-74-12, RHR PL MINIMUM FLOW VALVE is opening, PLACE I 2-HS-74-12A, RHR PMP A MINI FLOW to CLO RELEASE.	A MINI FLOW to JMP 2A-A hand switch OSE AND
[12]	VERIFY the following indications:	
	A. 2-HS-74-12A red light ON	
	B. 2-HS-74-12A green light OFF	
	C. 2-HS-74-12C red light ON	
	D. 2-HS-74-12C green light OFF	- · · · · · · · · · · · · · · · · · · ·
	E. Valve is OPEN using local position indica	tor
[13]	VERIFY ICS point FD2193 displays "NOT CLS	5".
[14]	PLACE hand switch 2-HS-74-12C, RHR PMP CLOSE and then to NORMAL.	A MINI FLOW to
[15]	VERIFY valve 2-FCV-74-12, RHR PUMP 2A-A FLOW VALVE does NOT close.	
[16]	PLACE hand switch 2-HS-74-12A, RHR PMP CLOSE and while valve 2-FCV-74-12, RHR PM MINIMUM FLOW VALVE is closing, PLACE h	A MINI FLOW to UMP 2A-A and switch

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6.7 [°]	Valve	2-F(CV-74-12 Logic Test (continued)			
	[17]	VE	RIFY the following indications:			
		A.	2-HS-74-12A red light OFF			
_		В.	2-HS-74-12A green light ON			
		C.	2-HS-74-12C red light OFF			
		D.	2-HS-74-12C green light ON			
	. •	Ε.	Valve is CLOSED using local position ind	licator		
	[18]	VE	RIFY ICS point FD2193 displays "CLOSED NOTE)" <u>.</u>		
Stop at ha PUN sequ	[18] watch tin andswitch IP 2A-A uentially t	VE ning n 2-H MINI o ob	RIFY ICS point FD2193 displays "CLOSED NOTE of 2-FCV-74-12, RHR PUMP 2A-A MINIMU IS-74-12A, RHR PMP A MINI FLOW, and I MUM FLOW VALVE. Perform steps 6.7[19 tain stroke time data.)". JM FLOW VAL ocally at 2-FC\ 9]/6.7[20] and 6	VE, will /-74-12, 6.7[21]/6.	be done RHR 7[22]
Stop at ha PUN sequ	[18] watch tin andswitch IP 2A-A uentially t [19]	VE ning n 2-H MINI o ob SII PM	RIFY ICS point FD2193 displays "CLOSED NOTE of 2-FCV-74-12, RHR PUMP 2A-A MINIMU IS-74-12A, RHR PMP A MINI FLOW, and I MUM FLOW VALVE. Perform steps 6.7[19 tain stroke time data. MULTANEOUSLY PLACE handswitch 2-H IP A MINI FLOW, to the OPEN position AN)". JM FLOW VAL ocally at 2-FC\ 9]/6.7[20] and 6 S-74-12A, RHI ID	-VE, will /-74-12, 5.7[21]/6. R	be done RHR 7[22]
Stop at ha PUN sequ	[18] watch tin andswitch IP 2A-A uentially t [19]	VE ning n 2-H MINI to ob SII PM ST	RIFY ICS point FD2193 displays "CLOSED NOTE of 2-FCV-74-12, RHR PUMP 2A-A MINIMU IS-74-12A, RHR PMP A MINI FLOW, and I MUM FLOW VALVE. Perform steps 6.7[19 tain stroke time data. MULTANEOUSLY PLACE handswitch 2-H 1P A MINI FLOW, to the OPEN position AN ART stopwatches.)" JM FLOW VAL ocally at 2-FC\ 9]/6.7[20] and 6 S-74-12A, RHI ID	-VE, will /-74-12, 5.7[21]/6. R	be done RHR 7[22]
Stop at ha PUN sequ	[18] watch tin andswitch IP 2A-A uentially t [19]	VE ning n 2-H MINI co ob SII PM ST ST MI	RIFY ICS point FD2193 displays "CLOSED NOTE of 2-FCV-74-12, RHR PUMP 2A-A MINIMU IS-74-12A, RHR PMP A MINI FLOW, and I MUM FLOW VALVE. Perform steps 6.7[19 tain stroke time data. MULTANEOUSLY PLACE handswitch 2-H MP A MINI FLOW, to the OPEN position AN ART stopwatches. OP stopwatches when 2-FCV-74-12, RHR NIMUM FLOW VALVE, reaches the OPEN	D" JM FLOW VAL ocally at 2-FC 9]/6.7[20] and 6 S-74-12A, RHI ID ID PUMP 2A-A I position AND	-VE, will /-74-12, 5.7[21]/6. R	be done RHR 7[22]
Stop at ha PUN sequ	[18] watch tin andswitch IP 2A-A uentially t [19]	VE ning n 2-H MINI to ob SII PM ST ST MI RE	RIFY ICS point FD2193 displays "CLOSED NOTE of 2-FCV-74-12, RHR PUMP 2A-A MINIMU IS-74-12A, RHR PMP A MINI FLOW, and I MUM FLOW VALVE. Perform steps 6.7[19 tain stroke time data. MULTANEOUSLY PLACE handswitch 2-H MP A MINI FLOW, to the OPEN position AN CART stopwatches. OP stopwatches when 2-FCV-74-12, RHR NIMUM FLOW VALVE, reaches the OPEN ECORD stroke times below:)" JM FLOW VAL ocally at 2-FC\ 9]/6.7[20] and 6 S-74-12A, RHI ID PUMP 2A-A I position AND	-VE, will /-74-12, 6.7[21]/6. R	be done RHR 7[22]
Stop at ha PUN sequ	[18] watch tin andswitch IP 2A-A uentially t [19] [20]	VE ning n 2-H MINI co ob SIM PM ST ST MI RE A.	RIFY ICS point FD2193 displays "CLOSED NOTE of 2-FCV-74-12, RHR PUMP 2A-A MINIMU IS-74-12A, RHR PMP A MINI FLOW, and I MUM FLOW VALVE. Perform steps 6.7[19 tain stroke time data. MULTANEOUSLY PLACE handswitch 2-H MP A MINI FLOW, to the OPEN position AN ART stopwatches. TOP stopwatches. TOP stopwatches when 2-FCV-74-12, RHR NIMUM FLOW VALVE, reaches the OPEN ECORD stroke times below: Remote Open Time (Acc Crit 5.0[31])	JM FLOW VAL ocally at 2-FC 9]/6.7[20] and 6 S-74-12A, RHI ID PUMP 2A-A I position AND	-VE, will /-74-12, 5.7[21]/6. R	be done RHR 7[22]
Stop at ha PUN sequ	[18] watch tin andswitch IP 2A-A uentially t [19]	VE ning 2-H MINI o ob SII PM ST ST MI RE A.	RIFY ICS point FD2193 displays "CLOSED NOTE of 2-FCV-74-12, RHR PUMP 2A-A MINIMU IS-74-12A, RHR PMP A MINI FLOW, and I MUM FLOW VALVE. Perform steps 6.7[19 tain stroke time data. MULTANEOUSLY PLACE handswitch 2-H MP A MINI FLOW, to the OPEN position AN ART stopwatches. OP stopwatches when 2-FCV-74-12, RHR NIMUM FLOW VALVE, reaches the OPEN ECORD stroke times below: Remote Open Time (Acc Crit 5.0[31])	JM FLOW VAL ocally at 2-FCV 9]/6.7[20] and 6 S-74-12A, RHI ID PUMP 2A-A position AND	_VE, will /-74-12, 5.7[21]/6. R 	be done RHR 7[22]

B. Local Open Time

seconds $(\leq 15 \text{ secs})$

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6.7	Valve	e 2-FCV-74-12 Logic Te	st (continued)		
	[21]	SIMULTANEOUSLY F PMP A MINI FLOW, to	PLACE handswitch 2-HS the CLOSE position AN	5-74-12A, RHR ND	
		START stopwatches.			
	[22]	STOP stopwatches wh MINIMUM FLOW VAL	en 2-FCV-74-12, RHR I VE, reaches the CLOSE	PUMP 2A-A position AND	· .
		RECORD stroke times	below:		
		A. Remote Close Tir	ne (Acc Crit 5.0[31])		
				seconds	(≤ 15 secs)
		M&TE	Cal Due Da	te	
		B. Local Close Time			<u></u>
				seconds	(≤ 15 secs)
		M&TE	Cal Due Da	te	· .
	[23]	ENSURE Annunciator 2A1-A/2A2-A, is CLEA	Window 149-C, 480 RX R.	MOV BD	
	[24]	ENSURE Event Displa BD 2A1-A/2A2-A XS II	y Monitor reports 149-C N AUX, NORMAL	480 RX MOV	
	[25]	PLACE transfer switch FLOW TRANS SW to	2-XS-74-12, RHR PUN AUX.	1P A-A MIN	
	[26]	VERIFY Annunciator V 2A1-A/2A2-A ALARMS	Vindow 149-C, 480 RX I S (Acc Crit 5.0[2]) .	MOV BD	
	[27]	VERIFY Event Display 2A1-A/2A2-A XS IN AI	Monitor reports 149-C 4 JX, ALARM	480 RX MOV BD	
	[28]	PLACE transfer switch FLOW TRANS SW to	1 2-XS-74-12, RHR PUN NORMAL.	1P A-A MIN	

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6.7	Valve	2-F	CV-74-12 Logic Test (continued)	
	[30]	VE I 2A1	RIFY Event Display Monitor reports 149-C 4 I-A/2A2-A XS IN AUX, NORMAL	80 RX MOV BD
	[31]	PL/ FLC	ACE transfer switch 2-XS-74-12, RHR PUM DW TRANS SW to AUX.	P A-A MIN
	[32]	PL/ OP	ACE hand switch 2-HS-74-12A, RHR PMP A EN AND RELEASE.	A MINI FLOW to
	[33]	VEI FL(RIFY valve 2-FCV-74-12, RHR PUMP 2A-A DW VALVE does NOT open.	MINIMUM
	[34]	PL/ OP 2-H NO	ACE hand switch 2-HS-74-12C, RHR PMP / EN and then to NORMAL, while valve is trav IS-74-12C, RHR PMP A MINI FLOW to CLC RMAL.	A MINI FLOW to veling PLACE DSE and then to
	[35]	VE	RIFY the following indications:	
		A.	2-HS-74-12C red light ON	
		В.	2-HS-74-12C green light OFF	
		C.	2-HS-74-12A red light OFF	· · · · · · · · · · · · · · · · · · ·
	·	D.	2-HS-74-12A green light OFF	
		E.	Valve is OPEN. using local position indicat	tor
	[36]	PL/ CL(ACE hand switch 2-HS-74-12A, RHR PMP A DSE AND RELEASE.	A MINI FLOW to
	[37]	VE I FLC	RIFY valve 2-FCV-74-12, RHR PUMP 2A-A DW VALVE does NOT close.	
	[38]	PL/ CL(2-H NO	ACE hand switch 2-HS-74-12C, RHR PMP / OSE and then to NORMAL, while valve is tra IS-74-12C, RHR PMP A MINI FLOW to OPE RMAL.	A MINI FLOW to aveling PLACE EN and then to
	[39]	VE	RIFY the following indications:	
		A.	2-HS-74-12C red light OFF	
		В.	2-HS-74-12C green light On	

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6.7	Valve	2-FCV-74-12 L	ogic Test (continued)				
	·	C. 2-HS-74-1	2A red light OFF				
		D. 2-HS-74-1	2A green light OFF			•	
		E. Valve is C	LOSED using local posit	tion indica	itor	_	
	[40]	OPEN 2-BKR-	74-12 in 480V RX MOV I	BD 2A1-A	COMPT 14	D	
	[41]	VERIFY ICS p	oint FD2192 displays "P\	WR OFF".	•		
		• 		L			
	[42]	MANUALLY T 480V RX MOV	RIP the thermal overload BD 2A1-A COMPT 14D	d for 2-BK	R-74-12 in		
	[42]	MANUALLY T 480V RX MOV	RIP the thermal overload BD 2A1-A COMPT 14D	d for 2-BK	R-74-12 in		CV
	[42] [43]	MANUALLY T 480V RX MOV CLOSE 2-BKR 14D.	RIP the thermal overload BD 2A1-A COMPT 14D 2-74-12 in 480V RX MOV	d for 2-BK). / BD 2A1-	R-74-12 in A COMPT		CV
	[42] [43] [44]	MANUALLY T 480V RX MOV CLOSE 2-BKR 14D. PLACE transfe FLOW TRANS	RIP the thermal overload BD 2A1-A COMPT 14D 2-74-12 in 480V RX MOV er switch 2-XS-74-12, RH SW to NORMAL.	d for 2-BK). / BD 2A1- HR PUMP	R-74-12 in A COMPT A-A MIN		CV
	[42] [43] [44] [45]	MANUALLY T 480V RX MOV CLOSE 2-BKR 14D. PLACE transfe FLOW TRANS PLACE contro to OPEN AND	RIP the thermal overload BD 2A1-A COMPT 14D 2-74-12 in 480V RX MOV er switch 2-XS-74-12, RH SW to NORMAL. I switch 2-HS-74-12A, RI RELEASE.	d for 2-BK) / BD 2A1- HR PUMP HR PMP /	R-74-12 in A COMPT A-A MIN A MINI FLO		CV
	[42] [43] [44] [45] [46]	MANUALLY T 480V RX MOV CLOSE 2-BKR 14D. PLACE transfe FLOW TRANS PLACE contro to OPEN AND VERIFY valve FLOW VALVE	RIP the thermal overload BD 2A1-A COMPT 14D 2-74-12 in 480V RX MOV er switch 2-XS-74-12, RH SW to NORMAL. I switch 2-HS-74-12A, RI RELEASE. 2-FCV-74-12, RHR PUN does NOT open (Acc C	d for 2-BK) / BD 2A1- HR PUMP HR PMP / HR PMP / rit 5.0[1])	R-74-12 in A COMPT A-A MIN A MINI FLOV /IINIMUM		CV
	[42] [43] [44] [45] [46] [47]	MANUALLY T 480V RX MOV CLOSE 2-BKR 14D. PLACE transfe FLOW TRANS PLACE contro to OPEN AND VERIFY valve FLOW VALVE DEPRESS and Panel 4F on 48 Bypass.	RIP the thermal overload BD 2A1-A COMPT 14D 2-74-12 in 480V RX MOV er switch 2-XS-74-12, RH SW to NORMAL. I switch 2-HS-74-12A, RI RELEASE. 2-FCV-74-12, RHR PUM does NOT open (Acc C I HOLD the armature of BOV RX MOV BD 2A1-A	d for 2-BK) / BD 2A1- HR PUMP HR PMP / HR PMP / relay K6 i to simulat	R-74-12 in A COMPT A-A MIN A MINI FLOV /IINIMUM n back of te Overload		CV
	[42] [43] [44] [45] [46] [47] [48]	MANUALLY T 480V RX MOV CLOSE 2-BKR 14D. PLACE transfe FLOW TRANS PLACE contro to OPEN AND VERIFY valve FLOW VALVE DEPRESS and Panel 4F on 48 Bypass. PLACE contro to OPEN AND	RIP the thermal overload BD 2A1-A COMPT 14D 2-74-12 in 480V RX MOV er switch 2-XS-74-12, RH SW to NORMAL. I switch 2-HS-74-12A, RI RELEASE. 2-FCV-74-12, RHR PUN does NOT open (Acc C HOLD the armature of BOV RX MOV BD 2A1-A I switch 2-HS-74-12A, RI RELEASE.	d for 2-BK) / BD 2A1- HR PUMP HR PMP / /P 2A-A N rit 5.0[1]) relay K6 i to simulat	R-74-12 in A COMPT A-A MIN A MINI FLO MINIMUM In back of te Overload A MINI FLO	W	CV
	[42] [43] [44] [45] [46] [47] [48] [49]	MANUALLY T 480V RX MOV CLOSE 2-BKR 14D. PLACE transfe FLOW TRANS PLACE contro to OPEN AND VERIFY valve FLOW VALVE DEPRESS and Panel 4F on 48 Bypass. PLACE contro to OPEN AND VERIFY valve FLOW VALVE	RIP the thermal overload BD 2A1-A COMPT 14D 2-74-12 in 480V RX MOV er switch 2-XS-74-12, RH SW to NORMAL. I switch 2-HS-74-12A, RI RELEASE. 2-FCV-74-12, RHR PUM does NOT open (Acc C I HOLD the armature of BOV RX MOV BD 2A1-A I switch 2-HS-74-12A, RI RELEASE. 2-FCV-74-12, RHR PUM OPENS (Acc Crit 5.0[1]	d for 2-BK) / BD 2A1- HR PUMP HR PMP / /P 2A-A N rit 5.0[1]) relay K6 i to simulat HR PMP / /P 2A-A N]).	R-74-12 in A COMPT A-A MIN A MINI FLO MINIMUM In back of te Overload A MINI FLO MINIMUM	W	CV

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7 Valv	e 2-FCV-74	-12 Logic Test (continued)		
[51]	OPEN 2-	BKR-74-12 in 480V RX MOV BD 2A1	-A COMPT 14D.	
		WARNING		
rc Flash P	PE per TI-30	00 will be required for step 6.7[52]		
[52]	RESET ti MOV BD	ne thermal overload for 2-BKR-74-12 2A1-A COMPT 14D.	in 480V RX	
				CV
[53]	CLOSE 2 14D.	2-BKR-74-12 in 480V RX MOV BD 2A	1-A COMPT	
[54]	CLOSE V FLOW V	/alve 2-FCV-74-12, RHR PUMP 2A-A ALVE using 2-HS-74-12A, RHR PMP	MINIMUM A MINI FLOW.	
[55]	ENSURE OPEN ar	that 2-BKR-74-10 in 6.9KV SD BD 2 nd RACKED DOWN.	A-A Compt 14 is	•
	DEINGT	N.I. the white wire from terminal block	CDD point 1	
[56]	(cable nu 6.9KV SI	mber 2V1939A) on the 52 STA termin D BD 2A-A Comp 14 Breaker Compar	nal strip inside tment.	
[56]	(cable nu 6.9KV SI	mber 2V1939A) on the 52 STA termin DBD 2A-A Comp 14 Breaker Compar	nal strip inside tment.	

5.0[32], 5.0[33], 5.0[34]).

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6.8 Valve 2-FCV-74-24 Logic Test

	NOTE	
Arc Flash PP	PE per TI-300 will be required during section 6.8 of the test.	
[1]	VERIFY the following prerequisites have been completed for Subsection 6.8. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7])	- <u>.</u>
[2]	ESTABLISH communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE (A11V EI 689).	
[3]	ENSURE that 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt 14 is OPEN and RACKED DOWN.	
[4]	ENSURE 2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE is CLOSED from 2-M-6.	
[5]	LIFT the white wire at terminal block DD point 1 (cable number 2V1919B) on the 52 STA terminal strip inside 6.9KV SD BD 2B-B Comp 14 Breaker Compartment.	
		CV
[6]	ENSURE the following Integrated Computer System (ICS) points are in scan:	
	A. FD2344	
	B. FD2345	
[7]	VERIFY ICS point FD2344 displays "PWR ON".	
[8]	ENSURE the following transfer switch on RX MOV Board 2B1-B is in NORMAL:	
	• 2-XS-74-24, RHR PUMP B-B MIN FLOW TRANS SW	
[9]	PLACE hand switch 2-HS-74-24C, RHR PMP B MINI FLOW to OPEN and then to NORMAL.	

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6.8 Valv	e 2-FCV-74-24 Logic Test (continued)	
[10]	VERIFY valve 2-FCV-74-24, RHR PUMP 2B FLOW VALVE does NOT open.	
[11]	PLACE hand switch 2-HS-74-24A, RHR PM OPEN, and while valve 2-FCV-74-24, RHR F MINIMUM FLOW VALVE is opening, PLACE 2-HS-74-24A, RHR PMP B MINI FLOW to C RELEASE.	P B MINI FLOW to PUMP 2B-B E hand switch LOSE AND
[12]	VERIFY the following indications:	
	A. 2-HS-74-24A red light ON	
	B. 2-HS-74-24A green light OFF	
	C. 2-HS-74-24C red light ON	
	D. 2-HS-74-24C green light OFF	· · · ·
	E. Valve is OPEN using local position indic	cator
[13]	VERIFY ICS point FD2345 displays "NOT C	LS".
[14]	PLACE hand switch 2-HS-74-24C, RHR PM CLOSE and then to NORMAL.	IP B MINI FLOW to
[15]	VERIFY valve 2-FCV-74-24, RHR PUMP 2B FLOW VALVE does NOT close.	B-B MINIMUM
[16]	PLACE hand switch 2-HS-74-24A, RHR PM CLOSE and while valve 2-FCV-74-24, RHR MINIMUM FLOW VALVE is closing, PLACE 2-HS-74-24A, RHR PMP B MINI FLOW to O	P B MINI FLOW to PUMP 2B-B hand switch PEN AND

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l	WBN Jnit 2	-	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 133 of 274
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6.8	Valve	9 2-F	CV-74-24 Logic Test (continued)	
	[17]	VE	RIFY the following indications:	
		Α.	2-HS-74-24A red light OFF	
·		В.	2-HS-74-24A green light ON	· .
		C.	2-HS-74-24C red light OFF	
		D.	2-HS-74-24C green light ON	· · · · · · · · · · · · · · · · · · ·
		E.	Valve is CLOSED using local position indi	cator
	[18]	VE	RIFY ICS point FD2345 displays "CLOSED"	"
			NOTE	· · · · · · · · · · · · · · · · · · ·
Stopw at har PUMF seque	vatch tin ndswitch P 2B-B I entially t	ning n 2-H MINI to ob	of 2-FCV-74-24, RHR PUMP 2B-B MINIMU IS-74-24A, RHR PMP B MINI FLOW, and Ic MUM FLOW VALVE. Perform steps 6.8[19] tain stroke time data.	M FLOW VALVE, will be done ocally at 2-FCV-74-24, RHR]/6.8[20] and 6.8[21]/6.8[22]
۰.	[19]	SIN Pm	NULTANEOUSLY PLACE handswitch 2-HS	6-74-24A, RHR D
		ST	ART stopwatches.	· · · · · · · · · · · · · · · · · · ·
	[20]	ST MIN	OP stopwatches when 2-FCV-74-24, RHR F NIMUM FLOW VALVE, reaches the OPEN p	PUMP 2B-B position AND
		RE	CORD stroke times below:	

A. Remote Open Time (Acc Crit 5.0[31])

seconds (:

(≤ 15 secs)

M&TE _____ Cal Due Date _____

B. Local Open Time

seconds

(≤ 15 secs)

M&TE

Cal Due Date

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6.8	Valve	e 2-FCV-74-24 Logic Test (continued)			
	[21]	SIMULTANEOUSLY PLACE handswite PMP B MINI FLOW, to the CLOSE posi	ch 2-HS ition AN	8-74-24A, RHR ND	
		START stopwatches.			
	[22]	STOP stopwatches when 2-FCV-74-24 MINIMUM FLOW VALVE, reaches the 0	, RHR I CLOSE	DUMP 2B-B	
		RECORD stroke times below:			
		A. Remote Close Time (Acc Crit 5.0[[31])		
				seconds	(≤ 15 secs
		M&TE Cal [Due Da	te	. '
		B. Local Close Time			
		``		seconds	(≤ 15 secs
		M&TE Cal [Due Da	te	·
	[23]	ENSURE Annunciator Window 150-C, 4 2B1-B/2B2-B, is CLEAR.	480 RX	MOV BD	·
	[24]	ENSURE Event Display Monitor reports BD 2B1-B/2B2-B XS IN AUX, NORMAL	s 150-C -	480 RX MOV	
	[25]	PLACE transfer switch 2-XS-74-24, RH FLOW TRANS SW to AUX.	IR PUM	1P B-B MIN	
	[26]	VERIFY Annunciator Window 150-C, 48 2B1-B/2B2-B ALARMS (Acc Crit 5.0[3]	80 RX I]).	MOV BD	
	[27]	VERIFY Event Display Monitor reports 2B1-B/2B2-B XS IN AUX, ALARM	150-C 4	480 RX MOV B	D
	[28]	PLACE transfer switch 2-XS-74-24, RH FLOW TRANS SW to NORMAL.	IR PUM	1P B-B MIN	
	[29]	VERIFY Annunciator Window 150-C, 4	80 RX I	MOV BD	-

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	Data	Pacl	kage: Page of	Date
6.8	Valve	2-F	CV-74-24 Logic Test (continued)	
	[30]	VE 2B	RIFY Event Display Monitor reports 150-C 4 1-B/2B2-B XS IN AUX, NORMAL	80 RX MOV BD
	[31]	PL FL(ACE transfer switch 2-XS-74-24, RHR PUM OW TRANS SW to AUX.	P B-B MIN
	[32]	PL OP	ACE hand switch 2-HS-74-24A, RHR PMP I EN AND RELEASE	B MINI FLOW to
	[33]	VE FLG	RIFY valve 2-FCV-74-24, RHR PUMP 2B-B OW VALVE does NOT open.	MINIMUM
	[34]	PL OP 2-H NO	ACE hand switch 2-HS-74-24C, RHR PMP EN and then to NORMAL, while valve is tra IS-74-24C, RHR PMP B MINI FLOW to CLC PRMAL.	B MINI FLOW to veling PLACE DSE and then to
	[35]	VE	RIFY the following indications:	
		Α.	2-HS-74-24C red light ON	·
		В.	2-HS-74-24C green light OFF	
		C.	2-HS-74-24A red light OFF	
		D.	2-HS-74-24A green light OFF	· · · · · · · · · · · · · · · · · · ·
		Ε.	Valve is OPEN. using local position indica	tor
	[36]	PL. CL	ACE hand switch 2-HS-74-24A, RHR PMP OSE AND RELEASE.	B MINI FLOW to
	[37]	VE FL	RIFY valve 2-FCV-74-24, RHR PUMP 2B-B OW VALVE does NOT close.	
	[38]	PL CL 2-F NC	ACE hand switch 2-HS-74-24C, RHR PMP OSE and then to NORMAL, while valve is tr IS-74-24C, RHR PMP B MINI FLOW to OPI PRMAL.	B MINI FLOW to aveling PLACE EN and then to
	[39]	VE	RIFY the following indications:	
		Α.	2-HS-74-24C red light OFF	·
		В.	2-HS-74-24C green light On	· ·

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6.8	Valve	2-FCV-74-24 Logic Test (continued)		
		C. 2-HS-74-24A red light OFF		
		D. 2-HS-74-24A green light OFF		
		E. Valve is CLOSED using local position indic	cator	
	[40]	OPEN 2-BKR-74-24 in 480V RX MOV BD 2B1-	-B COMPT 15B.	
	[41]	VERIFY ICS point FD2344 displays "PWR OFF	- "_	<u></u> .
		WARNING		
Arc F	lash PP	E per TI-300 will be required for step 6.8[42]		
	[42]	MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2B1-B COMPT 15B.	3KR-74-24 in	• · · · · · · · · · · · · · · · · · · ·
				CV
	[43]	CLOSE 2-BKR-74-24 in 480V RX MOV BD 2B 15B.	1-B COMPT	
	[44]	PLACE transfer switch 2-XS-74-24, RHR PUM FLOW TRANS SW to NORMAL.	P B-B MIN	
	[45]	PLACE control switch 2-HS-74-24A, RHR PMF to OPEN AND RELEASE .	P B MINI FLOW	
	[45] [46]	 PLACE control switch 2-HS-74-24A, RHR PMF to OPEN AND RELEASE. VERIFY valve 2-FCV-74-24, RHR PUMP 2B-B FLOW VALVE does NOT open (Acc Crit 5.0[1 	P B MINI FLOW MINIMUM]).	
	[45] [46] [47]	 PLACE control switch 2-HS-74-24A, RHR PMF to OPEN AND RELEASE. VERIFY valve 2-FCV-74-24, RHR PUMP 2B-B FLOW VALVE does NOT open (Acc Crit 5.0[1 DEPRESS and HOLD the armature of relay K6 Panel 16D on 480V RX MOV BD 2B1-B to sime Bypass. 	P B MINI FLOW MINIMUM]). 6 in back of ulate Overload	
	[45] [46] [47] [48]	 PLACE control switch 2-HS-74-24A, RHR PMF to OPEN AND RELEASE. VERIFY valve 2-FCV-74-24, RHR PUMP 2B-B FLOW VALVE does NOT open (Acc Crit 5.0[1 DEPRESS and HOLD the armature of relay K6 Panel 16D on 480V RX MOV BD 2B1-B to sime Bypass. PLACE control switch 2-HS-74-24A, RHR PMF to OPEN AND RELEASE. 	P B MINI FLOW MINIMUM]). 6 in back of ulate Overload P B MINI FLOW	
	[45] [46] [47] [48] [49]	 PLACE control switch 2-HS-74-24A, RHR PMF to OPEN AND RELEASE. VERIFY valve 2-FCV-74-24, RHR PUMP 2B-B FLOW VALVE does NOT open (Acc Crit 5.0[1 DEPRESS and HOLD the armature of relay K6 Panel 16D on 480V RX MOV BD 2B1-B to sime Bypass. PLACE control switch 2-HS-74-24A, RHR PMF to OPEN AND RELEASE. VERIFY valve 2-FCV-74-24, RHR PUMP 2B-B FLOW VALVE OPENS (Acc Crit 5.0[1]). 	P B MINI FLOW MINIMUM J). 6 in back of ulate Overload P B MINI FLOW MINIMUM	

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.8	Valve	2-FCV-74-24 Logic Test (continued)	
	[51]	OPEN 2-BKR-74-24 in 480V RX MOV BD 2B1	-B COMPT 15B.
		WARNING	
Arc Fl	ash PP	E per TI-300 will be required for step 6.8[52]	
	[52]	RESET the thermal overload for 2-BKR-74-24 MOV BD 2B1-B COMPT 15B.	in 480V RX
			CV
	[53]	CLOSE 2-BKR-74-24 in 480V RX MOV BD 28 15B.	1-B COMPT
	[54]	CLOSE valve 2-FCV-74-24, RHR PUMP 2B-B FLOW VALVE using 2-HS-74-24A, RHR PMP	MINIMUM B MINI FLOW.
	[55]	ENSURE that 2-BKR-74-20 in 6.9KV SD BD 2 OPEN and RACKED DOWN.	B-B Compt 14 is
,	[56]	REINSTALL the white wire from terminal block (cable number 2V1919B) on the 52 STA termin 6.9KV SD BD 2B-B Comp 14 Breaker Compare	d DD point 1 nal strip inside tment.
			CV
	[57]	VERIFY successful completion of Subsection	5.8 (Acc Crit

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6.9 Valve 2-FCV-74-33 Logic Test

		NOTE	
Arc Flash PP	E pe	r TI-300 will be required during section 6.9 of the test.	
[1]	VEI Sub 4.1	RIFY the following prerequisites have been completed for psection 6.9. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], [22], 4.2[1], 4.2[2], 4.3[7])	
[2]	ES 480 HE/ Roo	TABLISH communications between MCR Panel 2-M-6,DV RX MOV Board 2A1-A, and at valve 2-FCV-74-33, RHRAT EXCHANGER 2A OUTLET CROSSTIE in RHR HTXom A.	
[3]	EN	SURE the following valves are CLOSED from 2-M-6:	
	A.	2-FCV-63-93, RHR TO COLD LEG 2 & 3 INJECTION ISOLATION	
	В.	2-FCV-63-172, RHR TO HOT LEG 1 & 3 INJECTION ISOLATION	
	C.	2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	
[4]	EN	SURE the following valves are CLOSED using local position indication	n:
	A.	2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL	
	В.	2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL	
[5]	EN poir	SURE the following Integrated Computer System (ICS) nts are in scan:	
	A.	FD2194	
	В.	FD2195	
[6]	VE	RIFY ICS point FD2194 displays "PWR ON".	

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Valv	e 2-F	CV-74-33 Logic Test (continued)		
[7]	EN: NO	SURE the following transfer switch on RX M RMAL:	1OV Board 2A1-A is in	
	٠	2-XS-74-33, RHR HT EXCH A BYPASS		
[8]	PL/ to C	ACE hand switch 2-HS-74-33C, RHR HX A DPEN and then to NORMAL.	OUTLET XTIE	
[9]	VE I OU	RIFY valve 2-FCV-74-33, RHR HEAT EXCI TLET CROSSTIE does NOT open.	HANGER 2A	
[10]	PL/ to (EX(har CL(ACE hand switch 2-HS-74-33A, RHR HX A DPEN, and while valve 2-FCV-74-33, RHR I CHANGER 2A OUTLET CROSSTIE is open nd switch 2-HS-74-33A, RHR HX A OUTLE DSE AND RELEASE.	OUTLET XTIE HEAT ning, PLACE T XTIE to	
[11]	VE	RIFY the following indications:		
	A.	2-HS-74-33A red light ON	_	
· .	В.	2-HS-74-33A green light OFF		
	C.	2-HS-74-33C red light ON		
`	D.	2-HS-74-33C green light OFF	_	•
	E.	Valve is OPEN using local position indicat	tor	
[12]	VE	RIFY ICS point FD2195 displays "NOT CLS	5"	
[13]	PL/ to C	ACE hand switch 2-HS-74-33C, RHR HX A CLOSE and then to NORMAL.	OUTLET XTIE	
[14]	VE OU	RIFY valve 2-FCV-74-33, RHR HEAT EXCI TLET CROSSTIE does NOT close.	HANGER 2A	
[15]	PL/ to (EX) har AN	ACE hand switch 2-HS-74-33A, RHR HX A CLOSE, and while valve 2-FCV-74-33, RHR CHANGER 2A OUTLET CROSSTIE is clos nd switch 2-HS-74-33A, RHR HX A OUTLE D RELEASE.	OUTLET XTIE R HEAT ing, PLACE T XTIE to OPEN	

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6.9	Valve	e 2-F	CV-74-33 Logic Test (continued)		
	[16]	VE	RIFY the following indications:		
		Α.	2-HS-74-33A red light OFF		
		В.	2-HS-74-33A green light ON		
		C.	2-HS-74-33C red light OFF		
		D.	2-HS-74-33C green light ON		
		E.	Valve is CLOSED using local position ind	icator	
	[17]	VE	RIFY ICS point FD2195 displays "CLOSED	"	
			NOTE	· · · · · · · · · · · · · · · · · · ·	
Stopy be do 2-FC 6.9[1	watch tir one at ha V-74-33 8]/6.9[19	ming ands [,] 8, RH 9] an	of 2-FCV-74-33, RHR HEAT EXCHANGER witch 2-HS-74-33A, RHR HX A OUTLET X R HEAT EXCHANGER 2A OUTLET CROS d 6.9[20]/6.9[21] sequentially to obtain strok	2A OUTLET CROSSTIE, will TIE, and locally at STIE. Perform steps ke time data.	
	[18]	SIN Hx	IULTANEOUSLY PLACE handswitch 2-HS A OUTLET XTIE, to the OPEN position AN	5-74-33A, RHR I D	
		ST	ART stopwatches.		
	[19]	ST EX pos	OP stopwatches when 2-FCV-74-33, RHR CHANGER 2A OUTLET CROSSTIE, reach sition AND	HEAT les the OPEN	
		RE	CORD stroke times below:		
		Α.	Remote Open Time (Acc Crit 5.0[31])		

		_ seconds	(≤ 15 secs)
M&TE	Cal Due Date		
B. Local Open Time			
		seconds	(≤ 15 secs)

M&TE _____ Cal Due Date _____

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Valve	e 2-FCV-74-33 Logic Test (continued)		
[20]	SIMULTANEOUSLY PLACE handswitch 2-HS HX A OUTLET XTIE, to the CLOSE position A	-74-33A, RHR ND	
	START stopwatches.		
[21]	STOP stopwatches when 2-FCV-74-33, RHR H EXCHANGER 2A OUTLET CROSSTIE, reacher position AND	IEAT es the CLOSE	
	RECORD stroke times below:		
	A. Remote Close Time (Acc Crit 5.0[31])		
	·	seconds	(≤ 15 secs)
	M&TE Cal Due Dat	te	_
	B. Local Close Time		
		seconds	(≤ 15 secs)
	M&TE Cal Due Dat	te	_
[22]	ENSURE Annunciator Window 149-C, 480 RX 2A1-A/2A2-A, is CLEAR.	MOV BD	
[23]	ENSURE Event Display Monitor reports 149-C BD 2A1-A/2A2-A XS IN AUX, NORMAL	480 RX MOV	
[24]	PLACE transfer switch 2-XS-74-33, RHR HT E BYPASS to AUX.	EXCH A	
[25]	VERIFY Annunciator Window 149-C, 480 RX M 2A1-A/2A2-A ALARMS (Acc Crit 5.0[2])	MOV BD	
[26]	VERIFY Event Display Monitor reports 149-C 4 2A1-A/2A2-A XS IN AUX, ALARM	180 RX MOV B	D
[27]	PLACE transfer switch 2-XS-74-33, RHR HT E BYPASS to NORMAL.	EXCH A	
[28]	VERIFY Annunciator Window 149-C, 480 RX M	MOV BD	

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9	Valve 2-FCV-74-33 Logic Test (continued)					
	[29]	VE 2A	RIFY Event Display Monitor reports 149-C 4 1-A/2A2-A XS IN AUX, NORMAL	80 RX MOV BD		
	[30]	PLACE transfer switch 2-XS-74-33, RHR HT EXCH A BYPASS to AUX.				
	[31]	PL/ to (ACE hand switch 2-HS-74-33A, RHR HX A DPEN AND RELEASE .			
	[32]	VE OU	RIFY valve 2-FCV-74-33, RHR HEAT EXCH TLET CROSSTIE does NOT open.	IANGER 2A		
	[33]	PL/ to (PL/ and	ACE hand switch 2-HS-74-33C, RHR HX A DPEN and then to NORMAL, while valve is t ACE 2-HS-74-33C, RHR HX A OUTLET XT d then to NORMAL.	OUTLET XTIE traveling IE to CLOSE		
	[34]	VERIFY the following indications:				
		Α.	2-HS-74-33C red light ON			
		Β.	2-HS-74-33C green light OFF			
•		C.	2-HS-74-33A red light OFF	· · · · · · · · · · · · · · · · · · ·		
		D.	2-HS-74-33A green light OFF			
		Ε.	Valve is OPEN using local position indicat	or		
	[35]	PL. to (ACE hand switch 2-HS-74-33A, RHR HX A CLOSE AND RELEASE .			
	[36]	VE OL	RIFY valve 2-FCV-74-33, RHR HEAT EXCI ITLET CROSSTIE does NOT close.	HANGER 2A		
	[37] PLACE hand switch 2-HS-74-33C, RHR HX A OUTLET XTIE to CLOSE and then to NORMAL, while valve is traveling PLACE 2-HS-74-33C, RHR HX A OUTLET XTIE to OPEN and then to NORMAL.		OUTLET XTIE s traveling TE to OPEN and			
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6.9	Valve	2-FCV-74-33 Logic Test (continued)				
	[38]	VERIFY the following indications:				
		A. 2-HS-74-33C red light OFF				
		B. 2-HS-74-33C green light ON	۰.			
		C. 2-HS-74-33A red light OFF				
		D. 2-HS-74-33A green light OFF				
		E. Valve is CLOSED using local position indic	cator			
	[39]	OPEN 2-BKR-74-33 in 480V RX MOV BD 2A1-	A COMPT 14E.			
	[40]	VERIFY ICS point FD2194 displays "PWR OFF		<u> </u>		
Arc F	-lash PP	WARNING E per TI-300 will be required for step 6.9[41]				
Arc F	Flash PP [41]	WARNING E per TI-300 will be required for step 6.9[41] MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2A1-A COMPT 14E.	KR-74-33 in			
Arc F	Flash PP [41]	WARNING E per TI-300 will be required for step 6.9[41] MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2A1-A COMPT 14E.	KR-74-33 in	CV		
Arc F	Flash PP [41] [42]	WARNING E per TI-300 will be required for step 6.9[41] MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2A1-A COMPT 14E. CLOSE 2-BKR-74-33 in 480V RX MOV BD 2A 14E.	KR-74-33 in 1-A COMPT	CV		
Arc F	Flash PP [41] [42] [43]	WARNING E per TI-300 will be required for step 6.9[41] MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2A1-A COMPT 14E. CLOSE 2-BKR-74-33 in 480V RX MOV BD 2A1 14E. PLACE transfer switch 2-XS-74-33, RHR HT E BYPASS to NORMAL.	KR-74-33 in 1-A COMPT XCH A	CV		
Arc F	=lash PP [41] [42] [43] [44]	WARNING E per TI-300 will be required for step 6.9[41] MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2A1-A COMPT 14E. CLOSE 2-BKR-74-33 in 480V RX MOV BD 2A1 14E. PLACE transfer switch 2-XS-74-33, RHR HT E BYPASS to NORMAL. PLACE control switch 2-HS-74-33A, RHR HX A to OPEN AND RELEASE.	KR-74-33 in 1-A COMPT XCH A A OUTLET XTIE	CV		
Arc F	Flash PP [41] [42] [43] [44] [45]	WARNING E per TI-300 will be required for step 6.9[41] MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2A1-A COMPT 14E. CLOSE 2-BKR-74-33 in 480V RX MOV BD 2A 14E. PLACE transfer switch 2-XS-74-33, RHR HT E BYPASS to NORMAL. PLACE control switch 2-HS-74-33A, RHR HX A to OPEN AND RELEASE. VERIFY valve 2-FCV-74-33, RHR HEAT EXCH OUTLET CROSSTIE does NOT open (Acc Crit	KR-74-33 in 1-A COMPT XCH A A OUTLET XTIE IANGER 2A it 5.0[1]) .	CV		
Arc F	Elash PP [41] [42] [43] [44] [45] [46]	WARNING E per TI-300 will be required for step 6.9[41] MANUALLY TRIP the thermal overload for 2-B 480V RX MOV BD 2A1-A COMPT 14E. CLOSE 2-BKR-74-33 in 480V RX MOV BD 2A1 14E. PLACE transfer switch 2-XS-74-33, RHR HT E BYPASS to NORMAL. PLACE control switch 2-HS-74-33A, RHR HX A to OPEN AND RELEASE. VERIFY valve 2-FCV-74-33, RHR HEAT EXCH OUTLET CROSSTIE does NOT open (Acc Cri DEPRESS and HOLD the armature of relay K6 Panel 4F on 480V RX MOV BD 2A1-A to simul Bypass.	KR-74-33 in 1-A COMPT XCH A A OUTLET XTIE HANGER 2A it 5.0[1]) S in back of ate Overload			

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6.9	Valve 2-F	CV-74-33 Logic Test (continued)	

- [48] **VERIFY** valve 2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE OPENS (Acc Crit 5.0[1]).
- [49] **RELEASE** K6 relay armature.
- [50] OPEN 2-BKR-74-33 in 480V RX MOV BD 2A1-A COMPT 14E.

WARNING

CV

Arc Flash PPE per TI-300 will be required for step 6.9[51]

- [51] **RESET** the thermal overload for 2-BKR-74-33 in 480V RX MOV BD 2A1-A COMPT 14E.
- [52] **CLOSE** 2-BKR-74-33 in 480V RX MOV BD 2A1-A COMPT 14E.
- [53] CLOSE valve 2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE using 2-HS-74-33A, RHR HX A OUTLET XTIE.
- [54] VERIFY successful completion of Subsection 6.9 (Acc Crit 5.0[32], 5.0[33], 5.0[34]).

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6.10 Valve 2-FCV-74-35 Logic Test

NOTE					
Arc Flash PP	'E pe	r TI-300 will be required during section 6.10 of the test.			
[1]	VE Sub 4.1	RIFY the following prerequisites have been completed for bsection 6.10. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], [21], 4.1[22], 4.2[1], 4.2[2], 4.3[7])			
[2]	ES 480 RH HT	TABLISH communications between MCR Panel 2-M-6, DV Reactor MOV Board 2B1-B, and at valve 2-FCV-74-35, R HEAT EXCHANGER 2B OUTLET CROSSTIE in RHR X Room B.			
[3]	EN	SURE the following valves are CLOSED from 2-M-6:			
	А.	2-FCV-63-94, RHR TO COLD LEG 1 & 4 INJECTION ISOLATION			
	В.	2-FCV-63-172, RHR TO HOT LEG 1 & 3 INJECTION ISOLATION			
	_. С.	2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	、 		
	D.	2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE			
[4]	EN	SURE the following valves are CLOSED using local position indi	cation:		
	Α.	2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL			
	В.	2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL			
[5]	EN poir	SURE the following Integrated Computer System (ICS) nts are in scan:			
	Α.	FD2346			
	В.	FD2347			

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6.10	Valve	2-FCV-74-35 Logic Test (continued)	
	[6]	VERIFY ICS point FD2346 displays "PWR ON".	
	[7]	ENSURE the following transfer switch on RX MOV Board 2B1-B is in NORMAL:	• •
		A. 2-XS-74-35, RHR HT EXCH B BYPASS	
	[8]	PLACE hand switch 2-HS-74-35C, RHR HX B OUTLET XTIE to OPEN and then to NORMAL.	
	[9]	VERIFY valve 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE does NOT open.	
	[10]	PLACE hand switch 2-HS-74-35A, RHR HX B OUTLET XTIE to OPEN, and while valve 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE is opening, PLACE hand switch 2-HS-74-35A, RHR HX B OUTLET XTIE to CLOSE AND RELEASE .	
	[11]	VERIFY the following indications:	
		A. 2-HS-74-35A red light ON	
		B. 2-HS-74-35A green light OFF	
		C. 2-HS-74-35C red light ON	
		D. 2-HS-74-35C green light OFF	
		E. Valve is OPEN using local position indicator	
	[12]	VERIFY ICS point FD2347 displays "OPEN".	
	[13]	PLACE hand switch 2-HS-74-35C, RHR HX B OUTLET XTIE to CLOSE and then to NORMAL.	
	[14]	VERIFY valve 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE does NOT close.	
	[15]	PLACE hand switch 2-HS-74-35A, RHR HX B OUTLET XTIE to CLOSE, and while valve 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE is closing, PLACE hand switch 2-HS-74-35A, RHR HX B OUTLET XTIE to OPEN AND RELEASE .	1

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6.10	Valve	e 2-F	CV-74-35 Logic Test (continued)	
	[16]	VE	RIFY the following indications:	
		Α.	2-HS-74-35A red light OFF	
		В.	2-HS-74-35A green light ON	
		C.	2-HS-74-35C red light OFF	
		D.	2-HS-74-35C green light ON	· · · ·
		E.	Valve is CLOSED using local position ind	icator
	[17]	VE	RIFY ICS point FD2347 displays "NOT OP	EN".
			NOTE	
Stopv be do 2-FC 6.10[watch tir one at ha V-74-35 18]/6.10	ning ands , RH [19]	NOTE of 2-FCV-74-35, RHR HEAT EXCHANGEF witch 2-HS-74-35A, RHR HX B OUTLET X R HEAT EXCHANGER 2B OUTLET CROS and 6.10[20]/6.10[21] sequentially to obtain	R 2B OUTLET CROSSTIE, will TIE, and locally at STIE. Perform steps stroke time data.
Stopy be do 2-FC 6.10[watch tir one at ha V-74-35 18]/6.10 [18]	ning ands , RH [19] SIN HX	NOTE of 2-FCV-74-35, RHR HEAT EXCHANGER witch 2-HS-74-35A, RHR HX B OUTLET X R HEAT EXCHANGER 2B OUTLET CROS and 6.10[20]/6.10[21] sequentially to obtain MULTANEOUSLY PLACE handswitch 2-HS B OUTLET XTIE, to the OPEN position AN	R 2B OUTLET CROSSTIE, will TIE, and locally at STIE. Perform steps stroke time data. S-74-35A, RHR
Stopv be dc 2-FC 6.10[watch tir one at ha V-74-35 18]/6.10 [18]	ning ands , RH [19] SIN HX ST	NOTE of 2-FCV-74-35, RHR HEAT EXCHANGER witch 2-HS-74-35A, RHR HX B OUTLET X R HEAT EXCHANGER 2B OUTLET CROS and 6.10[20]/6.10[21] sequentially to obtain MULTANEOUSLY PLACE handswitch 2-HS B OUTLET XTIE, to the OPEN position AN ART stopwatches.	R 2B OUTLET CROSSTIE, wil TIE, and locally at STIE. Perform steps stroke time data. S-74-35A, RHR
Stopv be dc 2-FC 6.10[watch tir one at ha V-74-35 18]/6.10 [18]	ning ands , RH [19] SIN HX ST ST EX	NOTE of 2-FCV-74-35, RHR HEAT EXCHANGER witch 2-HS-74-35A, RHR HX B OUTLET X R HEAT EXCHANGER 2B OUTLET CROS and 6.10[20]/6.10[21] sequentially to obtain MULTANEOUSLY PLACE handswitch 2-HS B OUTLET XTIE, to the OPEN position AN ART stopwatches. OP stopwatches when 2-FCV-74-35, RHR CHANGER 2B OUTLET CROSSTIE, reach sition AND	R 2B OUTLET CROSSTIE, wil TIE, and locally at STIE. Perform steps stroke time data. S-74-35A, RHR ID HEAT hes the OPEN
Stopv be dc 2-FC 6.10[watch tir one at ha V-74-35 18]/6.10 [18]	ning ands , RH [19] SIN HX ST EX POS RE	NOTE of 2-FCV-74-35, RHR HEAT EXCHANGER witch 2-HS-74-35A, RHR HX B OUTLET X R HEAT EXCHANGER 2B OUTLET CROS and 6.10[20]/6.10[21] sequentially to obtain MULTANEOUSLY PLACE handswitch 2-HS B OUTLET XTIE, to the OPEN position AN ART stopwatches. OP stopwatches when 2-FCV-74-35, RHR CHANGER 2B OUTLET CROSSTIE, reach sition AND CORD stroke times below:	R 2B OUTLET CROSSTIE, will TIE, and locally at STIE. Perform steps stroke time data. S-74-35A, RHR ID HEAT hes the OPEN
Stopv be dc 2-FC 6.10[watch tir one at ha V-74-35 18]/6.10 [18]	ning ands , RH [19] SIN HX ST ST EX POS RE A.	NOTE of 2-FCV-74-35, RHR HEAT EXCHANGER witch 2-HS-74-35A, RHR HX B OUTLET X R HEAT EXCHANGER 2B OUTLET CROS and 6.10[20]/6.10[21] sequentially to obtain MULTANEOUSLY PLACE handswitch 2-HS B OUTLET XTIE, to the OPEN position AN ART stopwatches. OP stopwatches when 2-FCV-74-35, RHR CHANGER 2B OUTLET CROSSTIE, reach sition AND CORD stroke times below: Remote Open Time (Acc Crit 5.0[31])	R 2B OUTLET CROSSTIE, wil TIE, and locally at STIE. Perform steps stroke time data. S-74-35A, RHR ID HEAT hes the OPEN
Stopv be dc 2-FC 6.10[watch tir one at ha V-74-35 18]/6.10 [18]	ning ands , RH [19] SIN HX ST ST EX pos RE A.	NOTE of 2-FCV-74-35, RHR HEAT EXCHANGER witch 2-HS-74-35A, RHR HX B OUTLET X R HEAT EXCHANGER 2B OUTLET CROS and 6.10[20]/6.10[21] sequentially to obtain MULTANEOUSLY PLACE handswitch 2-HS B OUTLET XTIE, to the OPEN position AN ART stopwatches. OP stopwatches when 2-FCV-74-35, RHR CHANGER 2B OUTLET CROSSTIE, reach sition AND CORD stroke times below: Remote Open Time (Acc Crit 5.0[31])	R 2B OUTLET CROSSTIE, will TIE, and locally at STIE. Perform steps stroke time data. S-74-35A, RHR ID HEAT hes the OPEN

B. Local Open Time

_____ seconds

Cal Due Date _____

seconds (≤ 15 secs)

M&TE _____

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6.10	Valve	2-FCV-74-35	i Logic Test (con	tinued)			
	[20]	SIMULTANE HX B OUTLE	EOUSLY PLACE I ET XTIE, to the CL	handswitch 2-H LOSE position	S-74-3 AND	35A, RHR	
		START stop	watches.				
	[21]	STOP stopw EXCHANGE position ANE	atches when 2-FC R 2B OUTLET CF)	CV-74-35, RHR ROSSTIE, reac	HEAT hes th	- e CLOSE	
		RECORD str	roke times below:				
		A. Remote	Close Time (Acc	Crit 5.0[31])			
			•			seconds	(≤ 15 secs
		M&TE		Cal Due Da	ate		
		B. Local Cl	lose Time				
			• •			seconds	(≤ 15 secs
		M&TE		Cal Due Da	ate		
	[22]	ENSURE An 2B1-B/2B2-E	nunciator Window 3, is CLEAR.	/ 150-C, 480 R	X MO\	/ BD	
	[23]	ENSURE Ev BD 2B1-B/2E	vent Display Monite B2-B XS IN AUX, I	or reports 150-(NORMAL	C 480	RX MOV	
	[24]	PLACE trans BYPASS to /	sfer switch 2-XS-7 AUX.	4-35, RHR HT	EXCH	I B	
	[25]	VERIFY Ann 2B1-B/2B2-E	nunciator Window 3 ALARMS (Acc C	150-C, 480 RX Crit 5.0[3]) .	MOV	BD	
	[26]	VERIFY Eve 2B1-B/2B2-E	ent Display Monito 3 XS IN AUX, ALA	r reports 150-C ،RM	480 F	RX MOV BD	
	[27]	PLACE trans BYPASS to I	sfer switch 2-XS-7 NORMAL.	4-35, RHR HT	EXCH	ΙB	
	[28]	VERIFY Ann 2B1-B/2B2-E	nunciator Window B, is CLEAR.	150-C, 480 RX	MOV	BD	

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6.10	Valve	e 2-F	CV-74-35 Logic Test (continued)		
	[29]	VE 2B	RIFY Event Display Monitor reports 150-C 4 1-B/2B2-B XS IN AUX, NORMAL	180 RX MOV BD	
	[30]	PL/ BY	ACE transfer switch 2-XS-74-35, RHR HT E PASS to AUX.	ЕХСН В	
	[31]	PL/ to (ACE hand switch 2-HS-74-35A, RHR HX B DPEN AND RELEASE .		
	[32]	VE OU	RIFY valve 2-FCV-74-35, RHR HEAT EXCI ITLET CROSSTIE does NOT open.	HANGER 2B	
	[33]	PL/ to (PL/ and	ACE hand switch 2-HS-74-35C, RHR HX B DPEN and then to NORMAL, while valve is ACE 2-HS-74-35C, RHR HX B OUTLET XT d then to NORMAL.	OUTLET XTIE traveling IE to CLOSE	
	[34]	VE	RIFY the following indications:	•	
		Α.	2-HS-74-35C red light ON	· · · ·	
		В.	2-HS-74-35C green light OFF		
		C.	2-HS-74-35A red light OFF		
		D.	2-HS-74-35A green light OFF	• ,	
		E.	Valve is OPEN using local position indicated	tor	
·	[35]	PL to (ACE hand switch 2-HS-74-35A, RHR HX B CLOSE AND RELEASE .	OUTLET XTIE	
	[36]	VE OU	RIFY valve 2-FCV-74-35, RHR HEAT EXC TLET CROSSTIE does NOT close.	HANGER 2B	
	[37]	PL to (PL the	ACE hand switch 2-HS-74-35C, RHR HX B CLOSE and then to NORMAL, while valve is ACE 2-HS-74-35C, RHR HX B OUTLET XT in to NORMAL.	OUTLET XTIE s traveling TE to OPEN and	

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6.10	Valve	2-FCV-74-35 Logic Test (continued)	
	[38]	VERIFY the following indications:	
		A. 2-HS-74-35C red light OFF	
		B. 2-HS-74-35C green light ON	<u> </u>
		C. 2-HS-74-35A red light OFF	
		D. 2-HS-74-35A green light OFF	
		E. Valve is CLOSED using local position indicator	
	[39]	OPEN 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT	15D
	[40]	VERIFY ICS point FD2346 displays "PWR OFF".	·
	[41]	MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D.	
	[41]	MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D.	
	[41]	MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D.	
	[41]	MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. CLOSE 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D.	
	[41] [42] [43]	 MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. CLOSE 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. PLACE transfer switch 2-XS-74-35, RHR HT EXCH B BYPASS to NORMAL. 	
	[41] [42] [43] [44]	 MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. CLOSE 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. PLACE transfer switch 2-XS-74-35, RHR HT EXCH B BYPASS to NORMAL. PLACE control switch 2-HS-74-35A, RHR HX B OUTLET 2 to OPEN AND RELEASE. 	CV
	[41] [42] [43] [44] [45]	 MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. CLOSE 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. PLACE transfer switch 2-XS-74-35, RHR HT EXCH B BYPASS to NORMAL. PLACE control switch 2-HS-74-35A, RHR HX B OUTLET 1 to OPEN AND RELEASE. VERIFY valve 2-FCV-74-35, RHR HEAT EXCHANGER 2E OUTLET CROSSTIE does NOT open (Acc Crit 5.0[1]). 	CV
	[41] [42] [43] [44] [45] [46]	 MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. CLOSE 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. PLACE transfer switch 2-XS-74-35, RHR HT EXCH B BYPASS to NORMAL. PLACE control switch 2-HS-74-35A, RHR HX B OUTLET 2 to OPEN AND RELEASE. VERIFY valve 2-FCV-74-35, RHR HEAT EXCHANGER 2E OUTLET CROSSTIE does NOT open (Acc Crit 5.0[1]). DEPRESS and HOLD the armature of relay K6 in back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overloo Bypass. 	CV
	[41] [42] [43] [44] [45] [46]	 MANUALLY TRIP the thermal overload for 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. CLOSE 2-BKR-74-35 in 480V RX MOV BD 2B1-B COMPT 15D. PLACE transfer switch 2-XS-74-35, RHR HT EXCH B BYPASS to NORMAL. PLACE control switch 2-HS-74-35A, RHR HX B OUTLET 1 to OPEN AND RELEASE. VERIFY valve 2-FCV-74-35, RHR HEAT EXCHANGER 2E OUTLET CROSSTIE does NOT open (Acc Crit 5.0[1]). DEPRESS and HOLD the armature of relay K6 in back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overlood Bypass. PLACE control switch 2-HS-74-35A, RHR HX B OUTLET 1 to OPEN AND RELEASE. 	CV

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6.10	Valve	2-FCV-74-35 Log	ic Test (continued)			•	
	[48]	VERIFY valve 2-I OUTLET CROSS	FCV-74-35, RHR HEA TIE OPENS (Acc Crit	T EXCH/ t 5.0[1]).	ANGER 2B		
	[49]	RELEASE K6 rel	ay armature.	· .			
	[50]	OPEN 2-BKR-74	-35 in 480V RX MOV E	BD 2B1-6	B COMPT 1	5D	
			WARNING		· · · · · · · · ·		
Arc F	lash PP	per TI-300 will b	e required for step 6.10	0[51]			
				-[]			•
	[51]	RESET the therm MOV BD 2B1-B (nal overload for 2-BKR COMPT 15D.	2-74-35 ir	1 480V RX		·
	[51]	RESET the therm MOV BD 2B1-B (nal overload for 2-BKR COMPT 15D.	2-74-35 ir	1 480V RX		CV
	[51] [52]	RESET the therm MOV BD 2B1-B (CLOSE 2-BKR-7 15D.	al overload for 2-BKR COMPT 15D. 4-35 in 480V RX MOV	2-74-35 ir 7 BD 2B1	-B COMPT		CV
	[51] [52] [53]	RESET the therm MOV BD 2B1-B (CLOSE 2-BKR-7 15D. CLOSE valve 2-F OUTLET CROSS XTIE.	hal overload for 2-BKR COMPT 15D. 4-35 in 480V RX MOV CV-74-35, RHR HEA TIE using 2-HS-74-35	74-35 ir BD 2B1 T EXCH A, RHR	-B COMPT ANGER 2B	 ET	CV
х	[51] [52] [53]	RESET the therm MOV BD 2B1-B (CLOSE 2-BKR-7 15D. CLOSE valve 2-F OUTLET CROSS XTIE. VERIFY success 5.0[32], 5.0[33],	hal overload for 2-BKR COMPT 15D. 4-35 in 480V RX MOV CV-74-35, RHR HEA TIE using 2-HS-74-35 ful completion of Subs 5.0[34]) .	2-74-35 ir 7 BD 2B1 T EXCH/ 5A, RHR section 6.	-B COMPT ANGER 2B HX B OUTL 10 (Acc Cri t	 ET	CV
· ·	[51] [52] [53]	RESET the therm MOV BD 2B1-B (CLOSE 2-BKR-7 15D. CLOSE valve 2-F OUTLET CROSS XTIE. VERIFY success 5.0[32], 5.0[33],	hal overload for 2-BKR COMPT 15D. 4-35 in 480V RX MOV CV-74-35, RHR HEA TIE using 2-HS-74-35 ful completion of Subs 5.0[34]).	BD 2B1 T EXCH A, RHR	-B COMPT ANGER 2B HX B OUTL 10 (Acc Cri t	ET	CV
×	[51] [52] [53]	RESET the therm MOV BD 2B1-B (CLOSE 2-BKR-7 15D. CLOSE valve 2-F OUTLET CROSS XTIE. VERIFY success 5.0[32], 5.0[33],	hal overload for 2-BKR COMPT 15D. 4-35 in 480V RX MOV CV-74-35, RHR HEA TIE using 2-HS-74-35 ful completion of Subs 5.0[34]) .	2-74-35 ir 7 BD 2B1 T EXCH/ 5A, RHR section 6.	-B COMPT ANGER 2B HX B OUTL 10 (Acc Cri t	ET	CV

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6.11 Valve 2-FCV-74-16 Logic Test

NOTE

The main and auxiliary Hand Indicating Controller (HIC) for 2-FCV-74-16 indicates demand and NOT actual position. Any steps that need position verification should be done by using local position indication.

- VERIFY the following prerequisites have been completed for Subsection 6.11. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7])
- [2] ESTABLISH communications between MCR Panel 2-M-6, Backup Control Room Panel L-11A, and at valve 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL AUX (A11W EI 713).
- [3] **ENSURE** the following valves are CLOSED from 2-M-6:
 - A. 2-FCV-63-8, RHR PMP 2A-A TO CHG PMP & SIP 2A-A SUCT ISOL
 - B. 2-FCV-63-93, RHR TO COLD LEG 2 & 3 INJECTION ISOLATION
 - C. 2-FCV-74-3, RHR PUMP 2A-A SUCTION
 - D. 2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE
- [4] **ENSURE** 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL is CLOSED using local position indication.

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6.11	Valve	2-FCV-74-16 Logic Test (continued)	
	[5]	ENSURE the following Integrated Computer System (ICS) points are in scan:	
		A. FD2024	
	[6]	ENSURE the following transfer switch on Panel 2-L-11A is in N	IORMAL:
		• 2-XS-74-16, RHR HT EX A OUTLET FLOW CNTL VLV TRANS	
	[7]	ADJUST 2-HIC-74-16C, RHR HX A FLOW CONTROL from 100 to 0% and back to 100%, AND VERIFY 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL does NOT move.	
	[8]	ADJUST 2-HIC-74-16A, RHR HX A FLOW CONTROL from 100 to 0% and back to 100%, AND VERIFY 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL cycles from closed to open to closed.	
	[9]	ENSURE Annunciator Window 148-B, ACR PNL 2-L-11A, is CLEAR.	
	[10]	ENSURE Event Display Monitor 148-B reports 148-B ACR PNL 2-L-11A XS IN AUX, NORMAL	
	[11]	PLACE transfer switch 2-XS-74-16, RHR HT EX A OUTLET FLOW CNTL VLV TRANS to AUX.	
	[12]	VERIFY Annunciator Window 148-B, ACR PNL 2-L-11A, ALARMS (Acc Crit 5.0[4]).	
	[13]	VERIFY Event Display Monitor 148-B reports 148-B ACR PNL 2-L-11A XS IN AUX, ALARM	
	[14]	PLACE transfer switch 2-XS-74-16, RHR HT EX A OUTLET FLOW CNTL VLV TRANS to NORMAL.	
	[15]	VERIFY Annunciator Window 148-B, ACR PNL 2-L-11A, is CLEAR.	
	[16]	VERIFY Event Display Monitor 148-B reports 148-B ACR PNL 2-L-11A XS IN AUX, NORMAL	

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6.11	Valve	e 2-F	CV-74-16 Logic Test (continued)		
	[17]	PL/ FL(ACE transfer switch 2-XS-74-16, RHR HT E OW CNTL VLV TRANS to AUX.	X A OUTLET	
	[18]	AD 100 RH doe	JUST 2-HIC-74-16A, RHR HX A FLOW CO) to 0% and back to 100%, AND VERIFY 2-I IR HEAT EXCHANGER 2A OUTLET FLOW es NOT move.	NTROL from FCV-74-16, CONTROL	
	[19]	AD 100 RH cyc	JUST 2-HIC-74-16C, RHR HX A FLOW CO to 0% and back to 100%, AND VERIFY 2-1 IR HEAT EXCHANGER 2A OUTLET FLOW cles from closed to open to closed.	NTROL from FCV-74-16, CONTROL	
	[20]	AD 100	JUST 2-HIC-74-16C, RHR HX A FLOW CC) to 0%.	NTROL from	
	[21]	VE FL(RIFY 2-FCV-74-16, RHR HEAT EXCHANG OW CONTROL OPENS.	ER 2A OUTLET	
	[22]	VE	RIFY ICS point FD2024 displays "NOT CLS	"	
	[23]	VE FC	RIFY 2-XI-74-16, RHR HX A OUTLET FLOV V-74-16 light is ON.	W CNTL	
	[24]	AD to 1	JUST 2-HIC-74-16C, RHR HX A FLOW CC 100%.	NTROL from 0	-
	[25]	VE FL	RIFY 2-FCV-74-16, RHR HEAT EXCHANG OW CONTROL CLOSES.	ER 2A OUTLET	
	[26]	VE	RIFY ICS point FD2024 displays "CLOSED"	".	
	[27]	VE FC	RIFY 2-XI-74-16, RHR HX A OUTLET FLOW V-74-16 light is OFF.	W CNTL	
	[28]	IN 2-F	STALL a jumper across TB-603-3 and TB-60 R-48 on the field side of the plastic isolators.	03-4 in Panel (SI signal)	
					CV
	[29]	VE FC	RIFY both white lights on 2-HS-74-16, RHR V SI SIGNAL RESET ON.	HX A OUTLET	

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6.11	Valve	e 2-FCV-74-16 Logic Test (continued)		
	[30]	VERIFY 2-FCV-74-16, RHR HEAT EXCHANG FLOW CONTROL does NOT open.	ER 2A OUTLET	
	[31]	PLACE transfer switch 2-XS-74-16, RHR HT E FLOW CNTL VLV TRANS to NORMAL.	X A OUTLET	
	[32]	VERIFY 2-FCV-74-16, RHR HEAT EXCHANG FLOW CONTROL opens (Acc Crit 5.0[17]A).	ER 2A OUTLET	
	[33]	PLACE 2-HS-74-16, RHR HX A OUTLET FCV RESET to RESET.	SI SIGNAL	
	[34]	VERIFY 2-FCV-74-16, RHR HEAT EXCHANG FLOW CONTROL remains open (Acc Crit 5.0)	ER 2A OUTLET [17]B) .	
	[35]	REMOVE jumper from TB-603-3 and TB-603-4 2-R-48.	in Panel	
· ·				CV
	[36]	VERIFY 2-FCV-74-16, RHR HEAT EXCHANG FLOW CONTROL remains open (Acc Crit 5.0)	ER 2A OUTLET [17]C) .	
	[37]	RESET relay S1A using 2-HS-74-16, RHR HX SI SIGNAL RESET (turn hand switch clockwise	A OUTLET FCV e).	
	[38]	VERIFY both white lights on 2-HS-74-16, RHR FCV SI SIGNAL RESET OFF.	HX A OUTLET	
	[39]	VERIFY 2-FCV-74-16, RHR HEAT EXCHANG FLOW CONTROL closes (Acc Crit 5.0[17]D).	ER 2A OUTLET	
	[40]	INSTALL a jumper across TB 603-3 and TB 60 2-R-48 on the field side of the plastic insulators	03-4 in Panel	
				CV
	[41]	VERIFY both white lights at 2-HS-74-16, RHR FCV SI SIGNAL RESET ON.	HX A OUTLET	
	[42]	VERIFY 2-FCV-74-16. RHR HEAT EXCHANG	ER 2A OUTLET	

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6.11	Valve	2-F	CV-74-16 Logic Test (continued)		
	[43]	RE 2-R	MOVE jumper from TB 603-3 and TB 603-4 -48.	in Panel –	
				-	CV
	[44]	RE: SI S	SET relay S1A using 2-HS-74-16, RHR HX SIGNAL RESET (Turn Hand switch Counter	A OUTLET FCV clockwise).	
	[45]	VE I FC	RIFY both white lights at 2-HS-74-16, RHR V SI SIGNAL RESET OFF.	HX A OUTLET -	
	[46]	VEI FL(RIFY 2-FCV-74-16, RHR HEAT EXCHANG DW CONTROL CLOSES.	ER 2A OUTLET	
	[47]	VE 5.0	RIFY successful completion of Subsection 6 [32], 5.0[33], 5.0[34], 5.0[36]).	5.11 (Acc Crit –	

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6.12 Valve 2-FCV-74-28 Logic Test

NOTE The main and auxiliary Hand Indicating Controller (HIC) for 2-FCV-74-28 indicates demand and NOT actual position. Any steps that need position verification should be done by using local position indication. [1] **VERIFY** the following prerequisites have been completed for Subsection 6.12. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7]) [2] **ESTABLISH** communications between MCR Panel 2-M-6, Backup Control Room Panel L-11B, and at valve 2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL, (A11V 713). **ENSURE** the following valves are CLOSED from 2-M-6: [3] Α. 2-FCV-63-11, RHR HX 2B-B OUTLET TO SIP 2B-B SUCT ISOL 2-FCV-63-94, RHR TO COLD LEG 1 & 4 INJECTION Β. **ISOLATION** 2-FCV-74-21, RHR PUMP 2B-B SUCTION C. 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET D. CROSSTIE [4] **ENSURE** 2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL CLOSED using local position indication. **ENSURE** the following Integrated Computer System (ICS) [5] points are in scan: Α. FD2372

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Valve	e 2-FCV-74-28 Logic Test (continued)		
[6]	ENSURE the following transfer switch on Pane	el 2-L-11B is in NO	RMAL:
	• 2-XS-74-28, RHR HT EX B OUTLET FLO TRANS	W CNTL VLV	
[7]	ADJUST 2-HIC-74-28C, RHR HX B FLOW CC 100 to 0% and back to 100%, AND VERIFY 2- RHR HEAT EXCHANGER 2B OUTLET FLOW does NOT move.	NTROL from FCV-74-28, CONTROL	
[8]	ADJUST 2-HIC-74-28A, RHR HX B FLOW CC 100 to 0% and back to 100%, AND VERIFY 2- RHR HEAT EXCHANGER 2B OUTLET FLOW cycles from closed to open to closed.	NTROL from FCV-74-28, CONTROL	
[9]	ENSURE Annunciator Window 148-C, ACR PI CLEAR.	NL 2-L-11B, is	
[10]	ENSURE Event Display Monitor 148-C reports PNL 2-L-11B XS IN AUX, NORMAL	148-C ACR	
[11]	PLACE transfer switch 2-XS-74-28, RHR HT E FLOW CNTL VLV TRANS to AUX.	EX B OUTLET	
[12]	VERIFY Annunciator Window 148-C, ACR PN ALARMS (Acc Crit 5.0[5]).	L 2-L-11B,	
[13]	VERIFY Event Display Monitor 148-C reports 7 2-L-11B XS IN AUX, ALARM	148-C ACR PNL	
[14]	PLACE transfer switch 2-XS-74-28, RHR HT E FLOW CNTL VLV TRANS to NORMAL.	EX B OUTLET	
[15]	VERIFY Annunciator Window 148-C, ACR PN CLEAR.	L 2-L-11B, is	
[16]	VERIFY Event Display Monitor 148-C reports 2-L-11B XS IN AUX, NORMAL	148-C ACR PNL	
[17]	PLACE transfer switch 2-XS-74-28, RHR HT E	EX B OUTLET	

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6.12	Valve	2-F(CV-74-28 Logic Test (continued)	
	[18]	AD. 100 RHI doe	JUST 2-HIC-74-28A, RHR HX B FLOW CO to 0% and back to 100%, AND VERIFY 2-H R HEAT EXCHANGER 2B OUTLET FLOW as NOT move.	NTROL from FCV-74-28, CONTROL
	[19]	AD, 100 RHI cycl	JUST 2-HIC-74-28C, RHR HX B FLOW CO to 0% and back to 100%, AND VERIFY 2-F R HEAT EXCHANGER 2B OUTLET FLOW les from closed to open to closed.	NTROL from FCV-74-28, CONTROL
	[20]	AD 100	JUST 2-HIC-74-28C, RHR HX B FLOW CO to 0%.	NTROL from
	[21]	VEI FLC	RIFY 2-FCV-74-28, RHR HEAT EXCHANG DW CONTROL OPENS.	ER 2B OUTLET
	[22]	VE	RIFY ICS point FD2372 displays "NOT CLS	"
	[23]	VEI FC	RIFY 2-XI-74-28, RHR HX B OUTLET FLO\ √-74-28 light is ON.	W CNTL
	[24]	AD to 1	JUST 2-HIC-74-28C, RHR HX B FLOW CO 00%.	NTROL from 0
	[25]	VEI FLC	RIFY 2-FCV-74-28, RHR HEAT EXCHANG DW CONTROL CLOSES.	ER 2B OUTLET
	[26]	VE	RIFY ICS point FD2372 displays "CLOSED'	• • •
	[27]	VEI FC	RIFY 2-XI-74-28, RHR HX B OUTLET FLO∖ √-74-28 light is OFF.	W CNTL
	[28]	INS 2-R	TALL a jumper across TB-603-3 and TB-603-51 on the field side of the plastic isolators.	03-4 in Panel (SI signal)
			· · · ·	CV
	[29]	VEI FC	RIFY both white lights on 2-HS-74-28, RHR ✓ SI SIGNAL RESET ON.	
	[30]	VEI FLC	RIFY 2-FCV-74-28, RHR HEAT EXCHANG DW CONTROL does NOT open.	ER 2B OUTLET

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6.12	Valve	2-FCV-74-28 Logic Test (continued)	· .	
	[31]	PLACE transfer switch 2-XS-74-28, RHR HT E FLOW CNTL VLV TRANS to NORMAL.	EX B OUTLET	
	[32]	VERIFY 2-FCV-74-28, RHR HEAT EXCHANG FLOW CONTROL opens (Acc Crit 5.0[18]A).	ER 2B OUTLET	
	[33]	PLACE 2-HS-74-28, RHR HX B OUTLET FCV RESET to RESET.	SI SIGNAL	
	[34]	VERIFY 2-FCV-74-28, RHR HEAT EXCHANG FLOW CONTROL remains open (Acc Crit 5.0	ER 2B OUTLET [18]B)	
	[35]	REMOVE jumper from TB-603-3 and TB-603-4 2-R-51.	t in Panel	
				CV
	[36]	VERIFY 2-FCV-74-28, RHR HEAT EXCHANG FLOW CONTROL remains open (Acc Crit 5.0	ER 2B OUTLET [18]C).	
	[37]	RESET relay S1B using 2-HS-74-28, RHR HX SI SIGNAL RESET (turn hand switch clockwise	B OUTLET FCV e).	
	[38]	VERIFY both white lights on 2-HS-74-28, RHR FCV SI SIGNAL RESET OFF.	HX B OUTLET	
	[39]	VERIFY 2-FCV-74-28, RHR HEAT EXCHANG FLOW CONTROL closes (Acc Crit 5.0[18]D).	ER 2B OUTLET	
	[40]	INSTALL a jumper across TB 603-3 and TB 602-R-51 on the field side of the plastic insulators	03-4 in Panel s.	
				CV
	[41]	VERIFY both white lights at 2-HS-74-28, RHR FCV SI SIGNAL RESET ON.	HX B OUTLET	
	[42]	VERIFY 2-FCV-74-28, RHR HEAT EXCHANG FLOW CONTROL OPENS.	ER 2B OUTLET	

	nit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 161 of 274	· .
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.12	Valve	2-F(CV-74-28 Logic Test (continued)	·	
	[43]	REI 2-R	MOVE jumper from TB 603-3 and TB 603-4 -51.	in Panel	
					CV
	[44]	RES SI S	SET relay S1B using 2-HS-74-28, RHR HX SIGNAL RESET (Turn Hand switch Counter	B OUTLET FCV rclockwise).	
2.	[45]	VEI FC	RIFY both white lights at 2-HS-74-28, RHR / SI SIGNAL RESET OFF.	HX B OUTLET	
	[46]	VEI FLC	RIFY 2-FCV-74-28, RHR HEAT EXCHANG DW CONTROL CLOSES.	ER 2B OUTLET	
	[47]	VEI 5.0	RIFY successful completion of Subsection 6 [32], 5.0[33], 5.0[34], 5.0[36]).	6.12 (Acc Crit	

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6.13 Valve 2-FCV-74-32 Logic Test

	NOTE	
The main and and NOT actu local position	d auxiliary Hand Indicating Controller (HIC) for 2-FCV-74-32 indicates on ual position. Any steps that need position verification should be done by indication.	demand by using
[1]	VERIFY the following prerequisites have been completed for Subsection 6.13. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[18], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7])	,
[2]	ESTABLISH communications between MCR Panel 2-M-6, Backup Control Room Panel L-11A, and at valve 2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL, (A11W 729).	
[3]	ENSURE the following valves are CLOSED from 2-M-6:	
	A. 2-FCV-63-172, RHR TO HOT LEG 1 & 3 INJECTION ISOLATION	
	B. 2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	
	C. 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE	
[4]	ENSURE 2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL CLOSED using local position indication.	
[5]	ENSURE the following transfer switch on Panel 2-L-11A is in NORM	AL:
	2-XS-74-32, RHR HT EXCH A&B BPS FLOW CNTL VLV TRANS	
[6]	ADJUST 2-HIC-74-32C, RHR HXS BYPASS FLOW CONTROL from 100 to 0% and back to 100%, AND VERIFY 2-FCV-74-32, RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL does NOT move.	

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5.13	Valve	2-FCV-74-32 Logic Test (continued)	
	[7]	ADJUST 2-HIC-74-32A, RHR HXS BY CONTROL from 100 to 0% and back 2-FCV-74-32, RHR HEAT EXCHANG CONTROL cycles from closed to open	YPASS FLOW to 100%, AND VERIFY ER A/B BYPASS FLOW n to closed.
	[8]	ENSURE Annunciator Window 148-B CLEAR.	, ACR PNL 2-L-11A, is
,	[9]	ENSURE Event Display Monitor 148-I PNL 2-L-11A XS IN AUX, NORMAL	B reports 148-B ACR
	[10]	PLACE transfer switch 2-XS-74-32, R FLOW CNTL VLV TRANS to AUX.	HR HT EXCH A&B BPS
	[11]	VERIFY Annunciator Window 148-B, ALARMS (Acc Crit 5.0[4]).	ACR PNL 2-L-11A,
	[12]	VERIFY Event Display Monitor 148-B 2-L-11A XS IN AUX, ALARM	reports 148-B ACR PNL
	[13]	PLACE transfer switch 2-XS-74-32, R FLOW CNTL VLV TRANS to NORMA	HR HT EXCH A&B BPS L
	[14]	VERIFY Annunciator Window 148-B, CLEAR.	ACR PNL 2-L-11A, is
	[15]	VERIFY Event Display Monitor 148-B 2-L-11A XS IN AUX, NORMAL	reports 148-B ACR PNL
	[16]	PLACE transfer switch 2-XS-74-32, R FLOW CNTL VLV TRANS to AUX.	HR HT EXCH A&B BPS
	[17]	ADJUST 2-HIC-74-32A, RHR HXS B CONTROL from 100 to 0% and back 2-FCV-74-32, RHR HEAT EXCHANG CONTROL does NOT move.	YPASS FLOW to 100%, AND VERIFY ER A/B BYPASS FLOW
	[18]	ADJUST 2-HIC-74-32C, RHR HXS B CONTROL from 100 to 0% and back 2-FCV-74-32, RHR HEAT EXCHANG CONTROL cycles from closed to oper	YPASS FLOW to 100%, AND VERIFY ER A/B BYPASS FLOW n to closed.
	[19]	PLACE transfer switch 2-XS-74-32, F FLOW CNTL VLV TRANS to NORMA	RHR HT EXCH A&B BPS
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6.13 Valve 2-FCV-74-32 Logic Test (continued)

[20] VERIFY successful completion of Subsection 6.13 (Acc Crit 5.0[32], 5.0[33], 5.0[36]).

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6.14	Resi	Jual Heat Removal Pump 2A-A Logic Te	est	
	[1]	VERIFY the following prerequisites have Subsection 6.14. (4.1[1]-4.1[8], 4.1[10], 4 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7], 4.3	been completed for I.1[12]-4.1[19], [9])	
	[2]	ENSURE clearance on 2-PMP-74-10, RI for the performance of this section.	HR Pump 2A-A is lifted	
	[3]	ENSURE that Appendix G, Pump Logic I has been completed.	Electrical Checklist	
	[4]	ENSURE the following relays in 6900V S Panel are removed:	Shutdown Board 2A-A Log	ic Relay
		A. RHR BOX Relay		
			· · ·	CV
		B. RHR BOY Relay		
				<u> </u>
		C RHR UVX Relay	•	
				CV
		D. RHR UVY Relay		
				, CV
		E. SIATX Relay		
·			· .	CV
,				

Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 166 of 274
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6.14 Resid	ual Heat Removal Pump 2A-A Logic Test (c	ontinued)
[5]	INSTALL jumpers with test switches in the op following relay socket terminals in the rear of 6 Logic Relay Panel:	en position between the 5900V Shutdown Board 2
· · ·	A. 13C to 13D for relay RHR BOX	· · · · ·
-	B. 15C to 15D for relay RHR BOY	_
	· .	
	C. 13C to 13F for relay RHR UVX	
	· · · ·	
	D. 15C to 15F for relay RHR UVY	· · · · · ·
	E. 13A to 13D for relay RHR UVX	
	F. 15A to 15D for relay RHR UVY	
	•	

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U	VBN nit 2	R	ESIDUAL HEAT REMOVAL SYS PUMP/VALVE LOGIC	TEM 2-PTI-074-01 Rev. 0000 Page 167 of	274
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6.14	Resid	dual Hea	t Removal Pump 2A-A Logic Te	est (continued)	• .
	[6]	CLOSE	the test switch for the following j	umpers:	
,		A. 13	C to 13D for relay RHR BOX		
		B. 15	C to 15D for relay RHR BOY		
		C. 13	C to 13F for relay RHR UVX		· · · · · · · · · · · · · · · · · · ·
		D. 15	C to 15F for relay RHR UVY	. ·	
	[7]	IF term on plas	inals 9 and 10 of TB619 on 2-R-4 tic, THEN	8 are NOT terminate	ed
		PERFC	DRM steps 6.14[7]A through 6.14[7]I.	<u> </u>
		A. EN	SURE the following fuses are rel	noved.	
		A	A. 2-FU-211-A014/1N		
				· .	
·			· · · · · · · · · · · · · · · · · · ·		CV
		t	3. 2-FU-211-A014/1A		·
			· · · ·		CV
		(C. 2-FU-211-A014/2N	· ·	
					<u>.</u>
					CV
:		C	D. 2-FU-211-A014/2A		
					CV
		Ε	E. 2-FU-211-A014/3N		
		-		•	
					CV
		·			
				, ,	

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6.14	Residual	Heat Removal Pump 2A-A Logic Test (co	ontinued)	
		F. 2-FU-211-A014/3A		
				CV
	В.	LOCATE and IDENTIFY wire SA14C4 on 9 on 2-R-48.	TB619 terminal	
	C.	DISCONNECT wire SA14C4 on TB619 te 2-R-48.	rminal 9 on	. <u> </u>
	D.	RETERMINATE wire SA14C4 lifted from 9 on 2-R-48 on plastic.	TB619 terminal	
				CV
	E.	LOCATE and IDENTIFY wire SA14C5 on 10 on 2-R-48.	TB619 terminal	
	F.	DISCONNECT wire SA14C5 on TB619 te 2-R-48.	rminal 10 on	
	G.	RETERMINATE wire SA14C5 lifted from 10 on 2-R-48 on plastic.	TB619 terminal	
				CV
	H.	RECORD on Appendix I		

	WBN Unit 2	RES	BIDUAL H PUM	EAT REMOV	AL SYSTEM GIC	2-PTI-074-0 Rev. 0000 Page 169 c)1 of 274	
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6.14	Residual	Heat I	Removal	Pump 2A-A L	.ogic Test (co	ontinued)		
	i.	ENS	URE the	following fuse:	s are installed.			
		Α.	2-FU-21	1-A014/1N				
					·		_	
								CV
		В.	2-FU-21	1-A014/1A			-	
						·	-	CV
		C.	2-FU-21	1-A014/2N		• .		
							-	
							-	CV
		D.	2-FU-21	1-A014/2A			-	·····; ······
							-	
		_	2 511 24	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,			UV
		L.	2-1 0-2	11-AU 14/31			-	
							、 -	CV
		F.	2-FU-21	I1-A014/3A		÷	_	
	÷						-	· .
								CV
	[8] IN an	STALL d 12 of	. a jumpei f the K608	r with test swit 3 relay in cabir	ch open acros net 2-R-48 (SI	s terminals 1 signal).	-	

WBN Unit 2	2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 170 of 274	
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5.14 Res	sidual	Heat Removal Pump 2A-A Logic Test (co	ontinued)	
[9]	EN po	SURE the following Integrated Computer S ints are in scan:	ystem (ICS)	
	Α.	HD2032		
	В.	XD2025	· · · · · · · · · · · · · · · · · · ·	
	C.	XD2105		
	D.	Y0600D		
[10]] EN	SURE the following transfer switch on 6.9K	V SD BD 2A-A is in NOI	RMAL:
	A.	2-XS-74-10, RHR PUMP A-A TRANS SW	/ІТСН	
[11]] EN ST	ISURE hand switch 2-HS-74-10A, RHR PMI OP/PULL TO LOCK.	P A (ECCS) is in	
[12]] EN ins ch	ISURE 2-BKR-74-10 in 6.9KV SD BD 2A-A talled in the test position and OPEN with the ocked.	Compt. 14 is e wheels 	
[13]] IN 2A	STALL umbilical cord on 2-BKR-74-10 in 6.9 -A Compt. 14.	9KV SD BD	
[14]] IN: Co	STALL test link on 2-BKR-74-10 in 6.9KV S mpt. 14.	D BD 2A-A	
[15]] ES 6.9 Re	TABLISH communications between MCR F WV SD BD 2A-A, and 6900V Shutdown Boa lay Panel.	Panel 2-M-6, ard 2A-A Logic —	
[16]] V E	RIFY ICS point XD2025 displays "PWR OF	F"	
[17]] DE 6.9	EPRESS the TEST CLOSE pushbutton on 2 MKV SD BD 2A-A Compt. 14.	-BKR-74-10 in	
[18]] VE CL on	RIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A C OSES by observing the red closed flag and Compt. 14.	Compt. 14 local red light —	
[19] VE clo fla	RIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A C sing spring is discharged by observing the v g.	Compt. 14 white discharged	

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6.14	Resid	dual Heat Removal Pump 2A-A Logic Test (co	ontinued)
	[20]	DEPRESS the TEST TRIP pushbutton on 2-BI 6.9KV SD BD 2A-A Compt. 14.	<r-74-10 in<="" td=""></r-74-10>
	[21]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A C OPENS by observing the green open flag and on Compt. 14.	compt. 14 local green light
	[22]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A C closing spring is charged by observing the yell	Compt. 14 ow charged flag.
	[23]	PLACE hand switch 2-HS-74-10A, RHR PMP START position AND RELEASE .	A (ECCS) in the
	[24]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A C NOT CLOSE by observing the green open flag light on Compt. 14.	Compt. 14 did and local green
	[25]	PLACE hand switch 2-HS-74-10A, RHR PMP STOP/PULLTO LOCK position.	A (ECCS) in the
	[26]	REMOVE umbilical cord on 2-BKR-74-10 in 6. A Compt. 14.	9KV SD BD 2A
	[27]	REMOVE test link on 2-BKR-74-10 in 6.9KV S Compt. 14.	D BD 2A A
	[28]	REMOVE wheel chocks on 2-BKR-74-10 in 6.9 A Compt. 14.	9KV SD BD 2A
	[29]	REMOVE 2-BKR-74-10 from 6.9KV SD BD 2A	A Compt. 14.
	[30]	RAISE 6.9KV SD BD 2A A Compt. 14 elevator reaches full up position.	r until elevator
	[31]	INSTALL 2-BKR-74-10 into 6.9KV SD BD 2A- the test position.	A Compt. 14 to
	[32]	INSTALL umbilical cord on 2-BKR-74-10 in 6. A Compt. 14.	9KV SD BD 2A
	[33]	INSTALL test link on 2-BKR-74-10 in 6.9KV S Compt. 14.	D BD 2A A
	[34]	INSTALL wheel chocks on 2-BKR-74-10 in 6.9 Compt. 14.	9KV SD BD 2A A

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6.14	Resi	dual	Heat Removal Pump 2A-A Logic Test (co	ontinued)	
	[35]	VEI 5.0	RIFY ICS point XD2025 displays "PWR ON" [14])	' (Acc Crit	
	[36]	ES 690	TABLISH communications between MCR P 00V Shutdown Board 2A-A, and SSPS cabir	anel 2-M-6, net 2-R-48.	
	[37]	VE	RIFY ICS point HD2032 displays "PULLT-L'		
	[38]	VE	RIFY the following indications:		
		Α,	2-HS-74-10A green light ON	-	
		В.	2-HS-74-10A red light OFF		
		C.	2-HS-74-10A white light OFF		
		D.	Compt. 14 green light ON		
		Ε.	Compt: 14 red light OFF		
		F.	Logic Panel red light OFF		
		G.	Compt. 14 breaker OPEN (green open flag	g)	

NOTE

Hand Switch 2-HS-74-10A, RHR PMP A (ECCS) spring returns to A AUTO.

- [39] **PLACE** hand switch 2-HS-74-10A, RHR PMP A (ECCS) to A AUTO.
- [40] VERIFY ICS point HD2032 displays "NOT P-L".(Acc Crit 5.0[14]).
- [41] **PLACE** hand switch 2-HS-74-10A, RHR PMP A (ECCS) to STOP **AND RELEASE**.

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6.14	Resid	Residual Heat Removal Pump 2A-A Logic Test (continued)									
	[42]	VE	RIFY the following indications:								
		Â.	2-HS-74-10A green light ON								
		В.	2-HS-74-10A red light OFF	<u> </u>							
		C.	2-HS-74-10A white light OFF								
		D.	Compt. 14 green light ON								
		E.	Compt: 14 red light OFF	· · · · · · · · · · · · · · · · · · ·							
		F.	Logic Panel red light OFF	、							
		G.	Compt. 14 breaker OPEN (green open flag	g)							
	[43]	VE	RIFY ICS point XD2105 displays "NOT RUN	J".							
	[44]	PL/ El (ACE cool clean damp cloth on bulb of 2-TS- 676)	-30-175 (A11V							
	[45]	EN CO	SURE hand switch 2-HS-30-175, RHR PUN OLER to AUTO.	1P 2A-A ROOM							
	[46]	EN	SURE the following fuse is INSTALLED:								
		A.	2-FU-214-A019/1-A								
				CV							
	[47]	EN BD CL	SURE 2-BKR-30-175-A, 480V CONT & AU 2A1-A breaker 9A (RHR pump 2A-A RM C OSED.	X BLDG VENT ooler Fan) is 							
	[48]	DE 6.9	PRESS the TEST CLOSE pushbutton on 2- KV SD BD 2A-A Compt. 14.	BKR-74-10 in							
	[49]	VE NC ligh	RIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A C T close by observing the green open flag an t on Compt. 14.	ompt. 14 did							
	[50]	VE	RIFY 2-PMCL-30-175 did NOT start.								
	[51]	PL ST	ACE hand switch 2-HS-74-10C, RHR PMP ART AND RELEASE	A (ECCS) to							

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	Data	Package: Page of	Date
6.14	Resid	lual Heat Removal Pump 2A-A Logic Test (c	continued)
	[52]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A NOT close by observing the green open flag light on Compt. 14.	Compt. 14 does and local green
	[53]	VERIFY 2-PMCL-30-175 did NOT start.	
	[54]	PLACE hand switch 2-HS-74-10A, RHR PMF START AND RELEASE .	P A (ECCS) to
	[55]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A by observing the red closed flag and local red 14.	Compt. 14 closes I light on Compt.
	[56]	VERIFY ICS point Y0600D displays "CLOSE	D"
	[57]	VERIFY 2-PMCL-30-175 started (Acc Crit 5.	0[30]A) .
·	[58]	VERIFY ICS point XD2105 displays "RUNNIN 5.0[14]) .	NG" (Acc Crit
	[59]	VERIFY the following indications:	
		A. 2-HS-74-10A green light OFF	
		B. 2-HS-74-10A red light ON	
•	.	C. 2-HS-74-10A white light OFF	
		D. Compt. 14 green light OFF	
		E. Compt. 14 red light ON	
		F. Logic Panel red light ON. (Acc Crit 5.0[7	10])
	[60]	DEPRESS the TEST TRIP pushbutton on 6.9 Compt 14 breaker.	9KV SD BD 2A-A
	[61]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A NOT open by observing the red closed flag a on Compt. 14.	Compt. 14 did nd local red light
	[62]	VERIFY 2-PMCL-30-175 is running.	
	[63]	PLACE hand switch 2-HS-74-10C, RHR PMF STOP AND RELEASE .	P A (ECCS) to

WE Uni	BN it 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 175 of 274
[Data P	ackage: Page of	Date
6.14 F	Residu	al Heat Removal Pump 2A-A Logic Test (c	ontinued)
	64]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C NOT open by observing the red closed flag an on Compt. 14.	Compt. 14 did d local red light
. [65]	VERIFY 2-PMCL-30-175 is running.	
[66]	PLACE hand switch 2-HS-74-10A, RHR PMP STOP AND RELEASE	A (ECCS) to
[67]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C OPEN by observing the green open flag and lo on Compt. 14.	Compt. 14 is ocal green light
[68]	VERIFY ICS point Y0600D displays "OPEN".	
[69]	VERIFY the following indications:	
		A. 2-HS-74-10A green light ON	
		B. 2-HS-74-10A red light OFF	<u> </u>
		C. 2-HS-74-10A white light OFF	
		D. Compt. 14 green light ON	
		E. Compt. 14 red light OFF	
		F. Logic Panel red light OFF	
[70]	VERIFY 2-PMCL-30-175 has stopped.	
[71]	ENSURE 2-BKR-30-175-A, 480V CONT & AL BD 2A1-A breaker 9A (RHR pump 2A-A RM 0 OPEN.	IX BLDG VENT Cooler Fan) is
[72]	REMOVE cloth on bulb of 2-TS-30-175 (A11∨	′ El 676)
[73]	E NSURE Annunciator Window 149-A, 6.9 SD CLEAR.	BD 2A-A, is
, [74]	ENSURE Event Display Monitor 149-A reports BD 2A-A XS IN AUX, NORMAL	s 149-A 6.9 SD
[75]	PLACE transfer switch 2-XS-74-10, RHR PUI SWITCH to AUX.	MP A-A TRANS

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6.14	Resid	ual Heat Removal Pump 2A-A Logic Test (co	ontinued)	
	[76]	VERIFY Annunciator Window 149-A, 6.9 SD B ALARMS (Acc Crit 5.0[7]).	D 2A-A,	
	[77]	VERIFY Event Display Monitor 149-A reports 7 BD 2A-A XS IN AUX, ALARM	149-A 6.9 SD	
	[78]	PLACE transfer switch 2-XS-74-10, RHR PUM SWITCH to NORMAL.	IP A-A TRANS	
	[79]	VERIFY Annunciator Window 149-A, 6.9 SD B CLEAR.	D 2A-A, is 	
	[80]	VERIFY Event Display Monitor 149-A reports 7 BD 2A-A XS IN AUX, NORMAL	149-A 6.9 SD	
	[81]	PLACE transfer switch 2-XS-74-10, RHR PUM SWITCH to AUX.	1P A-A TRANS	
	[82]	PLACE hand switch 2-HS-74-10A, RHR PMP START AND RELEASE .	A (ECCS) to	
	[83]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C NOT close by observing the green open flag a light on Compt. 14.	Compt. 14 did nd local green	
	[84]	PLACE hand switch 2-HS-74-10C, RHR PMP START AND RELEASE .	A (ECCS) to	
	[85]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C CLOSED by observing the red closed flag and on Compt. 14.	Compt. 14 is l local red light _	

· .	L L	WBN Jnit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 177 of 274	
		Data	ackage: Page of	Date	_
	6.14	Resid	ual Heat Removal Pump 2A-A Logic Test (c	ontinued)	
		[86]	VERIFY the following indications:		•
			A. 2-HS-74-10A green light OFF		-
			B. 2-HS-74-10A red light OFF		-
			C. 2-HS-74-10A white light OFF		- ·
• •			D. Compt. 14 green light OFF	·	-
			E. Compt. 14 red light ON	·	_
			F. Logic Panel red light ON		. * . <u>-</u>
	· .	[87]	PLACE hand switch 2-HS-74-10A, RHR PMP STOP AND RELEASE.	A (ECCS) to	_
		[88]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A 0 NOT open by observing the red closed flag ar on Compt. 14.	Compt. 14 did nd local red light	-
		[89]	PLACE hand switch 2-HS-74-10C, RHR PMP STOP AND RELEASE .	P A (ECCS) to	_
		[90]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A (OPEN by observing the green open flag and I on Compt. 14.	Compt. 14 is ocal green light	_
		[91]	VERIFY the following indications:		
			A. 2-HS-74-10A green light OFF.		_
			B. 2-HS-74-10A red light OFF.	· · · · · · · · · · · · · · · · · · ·	_
			C. 2-HS-74-10A white light OFF.		_
			D. Compt. 14 green light ON.		_
			E. Compt. 14 red light OFF.		_
			F. Logic Panel red light OFF.		-
		[92]	PLACE transfer switch 2-XS-74-10, RHR PUI SWITCH to NORMAL.	MP A-A TRANS	-

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	Data	Package: Page of	Date	
6.14	Residual Heat Removal Pump 2A-A Logic Test (continued)			
	[93]	CLOSE the test switch on jumper connecting relay SIATX on Shutdown Board 2A-A Logic F	18B to 18C for Relay Panel	
	[94]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C CLOSED by observing the red closed flag and on Compt. 14.	Compt. 14 is I local red light	
	[95]	OPEN the test switch on jumper connecting 18 relay SIATX, on SHUTDOWN BOARD 2A-A L PANEL.	B to 18C for OGIC RELAY	
	[96]	PLACE hand switch 2-HS-74-10A, RHR PMP STOP AND RELEASE to open 2-BKR-74-10 i 2A A Compt.	A (ECCS) to in 6.9KV SD BD	
	[97]	CLOSE the test switch on jumper connecting to 12 on the K608 relay in cabinet 2-R-48.	terminals 11 and	
	[98]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C CLOSED by observing the red closed flag and on Compt. 14 (Acc Crit 5.0[13]).	Compt. 14 is I local red light	
	[99]	OPEN the test switch on jumper connecting te 12 on the K608 relay in cabinet 2-R-48.	rminals 11 and	
	[100]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C remains CLOSED by observing the red closed red light on Compt. 14 (Acc Crit 5.0[13]).	Compt. 14 I flag and local	
	[101]	CLOSE the test switch connecting terminals 1 relay RHR UVX.	3A to 13D for	
	[102]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C remains CLOSED by observing the red closed red light on Compt. 14.	Compt. 14 I flag and local	
	[103]	OPEN the test switch connecting terminals 13 relay RHR UVX.	A to 13D for	
	[104]	CLOSE the test switch connecting terminals 15A to 15D for relay RHR UVY.		
	[105]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C remains CLOSED by observing the red closed red light on Compt. 14.	Compt. 14 I flag and local	
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	Data I	Package: Page of	Date	
6.14	Resid	ual Heat Removal Pump 2A-A Logic Test (c	continued)	
	[106]	CLOSE the test switch connecting terminals 1 relay RHR UVX.	13A to 13D for	<u>.</u>
	[107]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A OPEN by observing the green open flag and l on Compt. 14.	Compt. 14 is local green light	
	[108]	OPEN the test switch connecting terminals 13 relay RHR UVX.	3A to 13D for	
	[109]	OPEN the test switch connecting terminals 15 relay RHR UVY.	5A to 15D for	
	[110]	OPEN the test switch connecting terminals 13 relay RHR UVX.	3C to 13F for	
	[111]	OPEN the test switch connecting terminals 15 relay RHR UVY.	5C to 15F for	
	[112]	CLOSE the test switch on jumper connecting 12 on the K608 relay in cabinet 2-R-48.	terminals 11 and	
	[113]	CLOSE the test switch connecting terminals 1 relay RHR UVX.	13C to 13F for	
	[114]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A CLOSED by observing the red closed flag and on Compt. 14.	Compt. 14 is d local red light 	
	[115]	OPEN the test switch connecting terminals 13 relay RHR UVX.	3C to 13F for	
	[116]	PLACE 2-HS-74-10A, RHR PMP A (ECCS) to RELEASE to open 2-BKR-74-10 in 6.9KV SD 14.	o STOP AND) BD 2A A Compt. 	
	[117]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A OPEN by observing the green open flag and l on Compt. 14.	Compt. 14 is local green light	
	[118]	CLOSE the test switch connecting terminals ' relay RHR UVY.	15C to 15F for	

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6.14	Resid	ual Heat Removal Pump 2A-A Logic Test (c	ontinued)	
	[119]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C CLOSED by observing the red closed flag and on Compt. 14.	Compt. 14 is I local red light 	
	[120]	OPEN the test switch connecting terminals 15 relay RHR UVY.	C to 15F for	
	[121]	OPEN 2-BKR-74-10 in 6.9KV SD BD 2A A Coplacing 2-HS-74-10A, RHR PMP A (ECCS) to RELEASE .	mpt. 14 by STOP AND	
	[122]	OPEN the test switch connecting terminals 13C to 13D for relay RHR BOX.		
	[123]	OPEN the test switch connecting terminals 15 relay RHR BOY.	C to 15D for	

NOTE

Steps 6.14[124] through 6.14[136] will test breaker closing through time delay relay RHR/ST which has approximately a 15 second delay time.

- [124] **CLOSE** the test switch connecting terminals 15C to 15F for relay RHR UVY.
- [125] **VERIFY** 2-BKR-74-10 in 6.9KV SD BD 2A A Compt. 14 CLOSES after a short delay by observing the red closed flag and local red light on Compt. 14.
- [126] **OPEN** the test switch connecting terminals 15C to 15F for relay RHR UVY.
- [127] PLACE hand switch 2-HS-74-10A, RHR PMP A (ECCS) to STOP AND RELEASE to open 2-BKR-74-10 in 6.9KV SD BD 2A A Compt. 14.
- [128] **CLOSE** the test switch connecting terminals 13C to 13D for relay RHR BOX.
- [129] **CLOSE** the test switch connecting terminals 13C to 13F for relay RHR UVX.

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	Data F	Package: Page of	Date
6.14	Resid	ual Heat Removal Pump 2A-A Logic Test (co	ontinued)
	[130]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C CLOSES after a short delay by observing the r and local red light on Compt. 14.	ompt. 14 ed closed flag
	[131]	OPEN the test switch connecting terminals 130 relay RHR UVX.	C to 13F for
	[132]	PLACE hand switch 2-HS-74-10A, RHR PMP STOP AND RELEASE to open 2-BKR-74-10 in 2A A Compt. 14.	A (ECCS) to n 6.9KV SD BD
	[133]	OPEN the test switch connecting terminals 130 relay RHR BOX.	C to 13D for
	[134]	CLOSE the test switch connecting terminals 15 relay RHR BOY.	5C to 15D for
	[135]	CLOSE the test switch connecting terminals 15 relay RHR UVY.	5C to 15F for
	[136]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A-A C short delay, by observing the red closed flag ar on Compt. 14.	ompt. 14 after a nd local red light
	[137]	OPEN the test switch connecting terminals 150 relay RHR UVY.	C to 15F for
	[138]	OPEN the test switch on jumper connecting ter 12 on the K608 relay in cabinet 2-R-48.	rminals 11 and
	[139]	ENSURE Annunciator 14-E, M-1 THRU M-6 M TRIPOUT, is CLEAR.	OTOR
	[140]	ENSURE Event Display Monitor reports, 14-E MOTOR TRIPOUT is CLEAR.	M-1 THRU M-6
	[141]	MANUALLY ACTUATE the instantaneous over 50 AØ at 6.9KV SD BD 2A-A Compt. 14, AND	er current relay RELEASE .
	[142]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C OPEN by observing the green open flag and lo on Compt. 14.	ompt. 14 is ocal green light
	[143]	VERIFY the trip target is actuated on instantan current relay 50 A \emptyset at 6 9KV SD BD 2A A Con	eous over

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6.14	Resid	ual Heat Removal Pump 2A-A Logic Test (continued)	
	[144]	VERIFY 2-HS-74-10A white light is ON.	
	[145]	VERIFY Annunciator 14-E, M-1 THROUGH M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (Acc Crit 5.0[11]).	
	[146]	VERIFY Event Display Monitor reports, 14-E M-1 THRU M-6 MOTOR TRIPOUT is in ALARM.	
	[147]	RESET the trip target on instantaneous over current relay 50 A $ \varnothing $ at 6.9KV SD BD 2A A Compt. 14.	
	[148]	PLACE hand switch 2-HS-74-10A, RHR PMP A (ECCS) to STOP AND RELEASE .	
	[149]	VERIFY 2-HS-74-10A white light is OFF.	
	[150]	VERIFY Annunciator 14-E, M-1 THRU M-6 MOTOR TRIPOUT is CLEAR.	Г,
	[151]	VERIFY Event Display Monitor reports, 14-E M-1 THRU M-6 MOTOR TRIPOUT is CLEAR.	
	[152]	VERIFY audible buzzer is SILENT.	
	[153]	CLOSE 2-BKR-74-10 in 6.9KV SD BD 2A A Compt. 14 by placing hand switch 2-HS-74-10A, RHR PMP A (ECCS) to START AND RELEASE .	
	[154]	MANUALLY ACTUATE the instantaneous over current relay 50 C \emptyset at 6.9KV SD BD 2A A Compt. 14, AND RELEASE .	
·	[155]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	
	[156]	VERIFY the trip target is actuated on instantaneous over current relay 50 C $ \oslash$ at 6.9KV SD BD 2A A Compt. 14.	
	[157]	RESET the trip target on instantaneous over current relay 50 C $ \emptyset$ at 6.9KV SD BD 2A A Compt. 14.	
	[158]	PLACE hand switch 2-HS-74-10A, RHR PMP A (ECCS) to STOP AND RELEASE .	

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6.14	Resid	ual Heat Removal Pump 2A-A Logic Test (continued)	
	[159]	VERIFY 2-HS-74-10A white light is OFF.	
	[160]	VERIFY Annunciator 14-E, M-1 THRU M-6 MOTOR TRIPOU is CLEAR.	Т,
	[161]	VERIFY Event Display Monitor reports, 14-E M-1 THRU M-6 MOTOR TRIPOUT is CLEAR.	
	[162]	CLOSE 2-BKR-74-10 in 6.9KV SD BD 2A A Compt. 14 by placing hand switch 2-HS-74-10A, RHR PMP A (ECCS) to START AND RELEASE .	
	[163]	ENSURE Annunciator 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	
	[164]	ENSURE Event Display Monitor reports, 14-D, M-1 THRU M-MOTOR OVERLOAD is CLEAR.	6
	[165]	CLOSE the contacts on Relay 51/83 A $ \emptyset$ at 6.9KV SD BD 2A Compt. 14 by manually rotating and holding the disk.	A
	[166]	VERIFY 2-HS-74-10A white light is ON.	
	[167]	VERIFY Annunciator 14-D, M-1 THROUGH M-6 MOTOR OVERLOAD, ALARMS (Acc Crit 5.0[12]).	
	[168]	VERIFY Event Display Monitor reports, 14-D, M-1 THRU M-6 MOTOR OVERLOAD is in ALARM.	
	[169]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A Compt. 14 does NOT TRIP.	
	[170]	RELEASE the disk on Relay 51/83 A $ \emptyset $ at 6.9KV SD BD 2A A Compt. 14.	·
	[171]	VERIFY 2-HS-74-10A white light is OFF.	
	[172]	VERIFY Annunciator 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	
~	[173]	VERIFY Event Display Monitor reports, 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	
	[174]	CLOSE the contacts on Relay 51/83 A $ \oslash$ at 6.9KV SD BD 2A Compt. 14 by manually rotating and holding the disk.	A

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6.14 Resid	lual Heat Removal Pump 2A-A Logic Test (co	ontinued)	
[175]	MOMENTARILY PLACE a jumper across term on the back of Relay 51/83 A \emptyset at 6.9KV SD BI 14.	ninals 9 and 10 D 2A A Compt. -	
		-	CV
[176]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C OPEN by observing the green open flag and lo on Compt. 14.	ompt. 14 is ocal green light	
[177]	VERIFY the trip target is actuated on Relay 51, SD BD 2A A Compt. 14.	/83 A∅ at 6.9KV -	
[178]	RELEASE the disk on Relay 51/83 AØ at 6.9K Compt. 14.	V SD BD 2A A	
[179]	PLACE hand switch 2-HS-74-10A, RHR PMP STOP AND RELEASE .	A (ECCS) to	
[180]	RESET the trip target on Relay 51/83 A $ \varnothing$ at 6. A Compt. 14.	9KV SD BD 2A -	· · ·
[181]	CLOSE 2-BKR-74-10 in 6.9KV SD BD 2A A Coplacing hand switch 2-HS-74-10A, RHR PMP A START AND RELEASE .	ompt. 14 by A (ECCS) to	
[182]	CLOSE the contacts on Relay 51/83 C \emptyset at 6.9 Compt. 14 by manually rotating and holding the	9KV SD BD 2A A e disk.	
[183]	MOMENTARILY PLACE a jumper across term on the back of Relay 51/83 CØ at 6.9KV SD B 14.	ninals 9 and 10 D 2A A Compt.	
			CV
[184]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C OPEN by observing the green open flag and lo on Compt. 14.	compt. 14 is ocal green light	
[185]	RELEASE the disk on Relay 51/83 CØ at 6.9k Compt. 14.	KV SD BD 2A A	,

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	Data Pa	ackage: Page of	Date	
6.14	Residu	al Heat Removal Pump 2A-A Logic Test (co	ontinued)	
	[186] ;	PLACE hand switch 2-HS-74-10A, RHR PMP STOP AND RELEASE	A (ECCS) to	
	[187] ;;	RESET the trip target on the time over current at 6.9KV SD BD 2A A Compt. 14.	Relay 51/83 CØ	
	[188]	VERIFY Annunciator 14-D, M-1 THRU M-6 MC OVERLOAD is CLEAR.		
	[189]	VERIFY Event Display Monitor reports, 14-D, I MOTOR OVERLOAD is CLEAR.	M-1 THRU M-6	
	[190]	CLOSE 2-BKR-74-10 in 6.9KV SD BD 2A A Co placing hand switch 2-HS-74-10A, RHR PMP / START AND RELEASE .	ompt. 14 by A (ECCS) to	
	[191]	MANUALLY ACTUATE ground fault relay 500 BD 2A A Compt. 14.	G at 6.9KV SD	
	[192]	VERIFY 2-BKR-74-10 in 6.9KV SD BD 2A A C OPEN by observing the green open flag and lo on Compt. 14.	compt. 14 is ocal green light 	
	[193]	VERIFY ground fault relay 50G trip target is ac SD BD 2A A Compt. 14.	ctuated at 6.9KV	
	[194]	RESET ground fault relay 50G trip target at 6.9 A Compt. 14.	9KV SD BD 2A	
	[195]	PLACE hand switch 2-HS-74-10A, RHR PMP STOP AND RELEASE	A (ECCS) to	
	[196]	REMOVE umbilical cord on 2-BKR-74-10 in 6. A Compt. 14.	9KV SD BD 2A	
	[197]	REMOVE test link on 2-BKR-74-10 in 6.9KV S Compt. 14.	D BD 2A A	
	[198]	REMOVE wheel chocks on 2-BKR-74-10 in 6. A Compt. 14.	9KV SD BD 2A	
	[199]	REMOVE the breaker from 6.9KV SD BD 2A-/	A Compt. 14.	
·	[200]	LOWER 6.9KV SD BD 2A A Compt. 14 elevat reaches full down position.	or until elevator	

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEI PUMP/VALVE LOGIC	M 2-PTI-074-01 Rev. 0000 Page 186 of 274	
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6.14	Residua	I Heat Removal Pump 2A-A Logic Test	(continued)	
	[201] R	EPLACE the breaker into 6.9KV SD BD 2/	A-A Compt. 14.	<u></u>
	[202] R re	EMOVE temporary jumpers from the follov ar of 6900V Shutdown Board 2A-A Logic I	ving relay socket termin Relay Panel:	als in the
	A	13C to 13D for relay RHR BOX		
				CV
	B	. 15C to15D for relay RHR BOY	· .	
				CV
	С	13C to 13F for relay RHR UVX		
			х.	
	Л	15C to 15E for rolay PHP UV/V		Cv
	D			
			·.	CV
•	E	. 13A to 13D for relay RHR UVX		
				CV
	F	15A to 15D for relay RHR UVY		
			· · ·	<u></u>
				CV
	G	. 18B to 18C for relay SIATX		. —
				CV

WBN Unit 2	RES	SIDUAL H PUM	EAT REMO	VAL SYSTEM OGIC	2-PTI-074-01 Rev. 0000 Page 187 of 2	274	
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6.14 Resid	ual Heat	Removal	Pump 2A-A	Logic Test (c	ontinued)	. · ·	
[203]	IF step6.	14[7] was	performed,	THEN			
	PERFOR	M steps 6	5.14[203]A th	nrough 6.14[203	3]I.		<u> </u>
	A. ENS	URE the f	following fus	es are removed	d.		
	Α.	2-FU-21	1-A014/1N				
						<u> </u>	
	B	2-FU-21	1-A014/1A	,			v
•	0.	21021		•	:		
						, CV	V
	C.	2-FU-21	1-A014/2N				
	D.	2-FU-21	1-A014/2A				-
					,		
		· .				C/	V
	E.	2-FU-21	1-A014/3N				
						C\	V
	F.	2-FU-21	1-A014/3A		,		
				· .		C	V
	B. LOC 9 or	ATE and 2-R-48.		vire SA14C4 or	n TB619 termina	al	
	C. DIS 2-R-	CONNECT 48.	T wire SA14	C4 on TB619 te	erminal 9 on		
					· .		ï

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\	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 188 of 274
	Data Pacl	kage: Page of	Date
6.14	Residual	Heat Removal Pump 2A-A Logic Test (co	ontinued)
	D.	RETERMINATE wire SA14C4 lifted from ⁻ 9 on 2-R-48 on metal.	TB619 terminal
			CV
	E.	LOCATE and IDENTIFY wire SA14C5 on 10 on 2-R-48.	TB619 terminal
	F.	DISCONNECT wire SA14C5 on TB619 te 2-R-48.	rminal 10 on
	G.	RETERMINATE wire SA14C5 lifted from 10 on 2-R-48 on metal.	TB619 terminal
			CV
	H.	RECORD on Appendix I	

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WBN Unit	RES 2	SIDUAL HEAT F PUMP/VAI	REMOVAL SYSTE	M 2-PTI-074-0 Rev. 0000 Page 189 of	1 ⁻ 274	
Da	ta Package:	Page of			Date	
6.14 Re	sidual Heat	Removal Pump	o 2A-A Logic Test	(continued)		
	I. ENS	URE the followi	ing fuses are instal	led.		
	A.	2-FU-211-A01	14/1N			
			,		CV	,
	В.	2-FU-211-A01	14/1A			
					CV	,
	C.	2-FU-211-A01	14/2N			
					CV	
	D.	2-FU-211-A01	14/2A			
					CV	1
	E.	2-FU-211-A01	14/3N			
					CV	,
	F.	2-FU-211-A01	14/3A			
					CV	1
[20	04] REMOV relay in c	E the jumper act abinet 2-R-48.	ross terminals 11 a	nd 12 on the K60		
						/

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 190 of 274
	Data Pa	ckage: Page of	Date
6.14	Residua	I Heat Removal Pump 2A-A Logic Test (co	ontinued)
	[206] R Pa	EINSTALL the following relays in 6900V Shu anel OR ENTER N/A for the relay AND EXPL	tdown Board 2A-A Logic Relay _AIN in the Test Log:
	А	RHR BOX Relay	· · · · · · · · · · · · · · · · · · ·
			CV
	В	RHR BOY Relay	
	с	RHR UVX Relay	CV
	D	. RHR UVY Relay	CV
			CV
.΄ χ	E	SIATX Relay	
			CV

[207] VERIFY successful completion of Subsection 6.14 (Acc Crit 5.0[33]).

י נ	WBN Jnit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 191 of 274
	Data	Pack	cage: Page of	Date
.15	Rèsio	dual	Heat Removal Pump 2B-B Logic Test	
	[1]	VEI Sut 4.1	RIFY the following prerequisites have been psection 6.15. (4.1[1]-4.1[8], 4.1[10], 4.1[12] [21], 4.1[22], 4.2[1], 4.2[2], 4.3[7], 4.3[9])	completed for -4.1[19],
	[2]	EN: for	SURE clearance on 2-PMP-74-20, RHR Pu the performance of this section.	mp 2B-B is lifted
	[3]	EN has	SURE that Appendix G, Pump Logic Electric been completed.	cal Checklist
	[4]	EN : Par	SURE the following relays in 6900V Shutdo nel are removed:	wn Board 2B-B Logic Relay
		A.	RHR BOX Relay	
		В.	RHR BOY Relay	CV
		C.	RHR UVX Relay	CV
		D.	RHR UVY Relay	CV
				CV
		E.	SIATX Relay	
				CV

	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 192 of 274
	Data	Pack	cage: Page of	Date
6.15	Resid	dual	Heat Removal Pump 2B-B Logic Test (co	ontinued)
	[5]	INS follo Log	STALL jumpers with test switches in the oper powing relay socket terminals in the rear of 6 gic Relay Panel:	en position between the 900V Shutdown Board 2B-B
		Α.	13C to 13D for relay RHR BOX	
				CV
		Β.	15C to 15D for relay RHR BOY	
				CV
		C.	13C to 13F for relay RHR UVX	
				CV
		D.	15C to 15F for relay RHR UVY	-
			· · · · ·	CV
		E.	13A to 13D for relay RHR UVX	·
			· · ·	CV
		F.	15A to 15D for relay RHR UVY	
				CV
		G.	18B to 18C for relay SIATX	
				CV

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	WBN Unit 2	RES	IDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 193 of 274	
	Data P	ackage:	Page of	Date	
6.15	Residu	al Heat I	Removal Pump 2B-B Logic Test (co	ontinued)	
	[6]	CLOSE t	he test switch for the following jumper	rs:	·
		A. 13C	to 13D for relay RHR BOX		
	· I	B. 15C	to 15D for relay RHR BOY		
	(C. 13C	to 13F for relay RHR UVX		
	· [D. 15C	to 15F for relay RHR UVY		
	[7] I	F termina	als 9 and 10 of TB619 on 2-R-51 are , THEN	NOT terminated	
	I	PERFOR	M steps 6.15[7]A through 6.15[7]I.		
	- I	A. ENS	URE the following fuses are removed	J.	
		Ά.	2-FU-211-B014/1N		
					CV
		В.	2-FU-211-B014/1A		
				. v	CV
,		C.	2-FU-211-B014/2N		
			(CV
		D.	2-FU-211-B014/2A		
		–			UV
		⊏.	2-FU-211-DU14/3IN		

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 194 of 274	
	Data Pacl	cage: Page of	Date	
5.15	Residual	Heat Removal Pump 2B-B Logic Test (co	ontinued)	
		F. 2-FU-211-B014/3A	-	
			-	CV
	. В.	LOCATE and IDENTIFY wire SB14C4 on 9 on 2-R-48.	TB619 terminal	
	C.	DISCONNECT wire SB14C4 on TB619 te 2-R-48.	rminal 9 on	
	. D.	RETERMINATE wire SB14C4 lifted from 9 on 2-R-48 on plastic.	TB619 terminal	
				CV
	· E.	LOCATE and IDENTIFY wire SB14C5 on 10 on 2-R-48.	TB619 terminal	
	F.	DISCONNECT wire SB14C5 on TB619 te 2-R-48.	rminal 10 on	
	G.	RETERMINATE wire SB14C5 lifted from 10 on 2-R-48 on plastic.	TB619 terminal	
				CV
	H.	RECORD on Appendix I		

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	WBN Jnit 2	RES	SIDUAL HEAT REMOV PUMP/VALVE LC	AL SYSTEM	2-PTI-074-01 Rev. 0000 Page 195 of 274	
	Data Pa	ckage:	Page of		Ďat	e
.15	Residua	I Heat	Removal Pump 2B-B	Logic Test (co	ontinued)	
	Ι.	ENS	URE the following fuse	es are installed		·
		A.	2-FU-211-B014/1N			
						CV
		В.	2-FU-211-B014/1A			
						CV
		C.	2-FU-211-B014/2N			•
				· ·		
						CV
		D.	2-FU-211-B014/2A			
						CV
		E.	2-FU-211-B014/3N			
		x				CV
		F.	2-FU-211-B014/3A			
					•	CV
	[8] I	NSTALL	a jumper with test swift the K608 relay in cab	itch open acros	ss terminals 11 signal).	
	a					
						CV
				·		

WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 196 of 274
Dat	Package: Page of	Date
6.15 Res	dual Heat Removal Pump 2B-B Logic Test (co	ontinued)
[9]	ENSURE the following Integrated Computer S points are in scan:	ystem (ICS)
	A. HD2066	
	B. XD2076	
	C. XD2077	
	D. Y0601D	
[10]	ENSURE the following transfer switch on 6.9K	V SD BD 2B-B is in NORMAL:
	A. 2-XS-74-20, RHR PUMP B-B TRANS SW	/ITCH
[11]	ENSURE hand switch 2-HS-74-20A, RHR PM STOP/PULL TO LOCK.	P B (ECCS) is in
[12]	ENSURE 2-BKR-74-20 in 6.9KV SD BD 2B-B installed in the test position and OPEN with the chocked.	Compt. 14 is e wheels
[13]	INSTALL umbilical cord on 2-BKR-74-20 in 6. 2B-B Compt. 14.	9KV SD BD
[14]	INSTALL test link on 2-BKR-74-20 in 6.9KV S Compt. 14.	D BD 2B-B
[15]	ESTABLISH communications between MCR F 6.9KV SD BD 2B-B, and 6900V Shutdown Boa Relay Panel.	Panel 2-M-6, ard 2B-B Logic
[16]	VERIFY ICS point XD2076 displays "PWR OF	F"
[17]	DEPRESS the TEST CLOSE pushbutton on 2 6.9KV SD BD 2B-B Compt. 14.	2-BKR-74-20 in
[18]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C CLOSES by observing the red closed flag and on Compt. 14.	Compt. 14 I local red light
[19]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C closing spring is discharged by observing the flag.	Compt. 14 white discharged

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6.15	Resid	ual Heat Removal Pump 2B-B Logic Test (co	ontinued)
	[20]	DEPRESS the TEST TRIP pushbutton on 2-BI 6.9KV SD BD 2B-B Compt. 14.	KR-74-20 in
	[21]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C OPENS by observing the green open flag and on Compt. 14.	Compt. 14 local green light
	[22]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C closing spring is charged by observing the yell	Compt. 14 ow charged flag.
	[23]	PLACE hand switch 2-HS-74-20A, RHR PMP START position AND RELEASE .	B (ECCS) in the
	[24]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C NOT CLOSE by observing the green open flag light on Compt. 14.	Compt. 14 did and local green
	[25]	PLACE hand switch 2-HS-74-20A, RHR PMP STOP/PULLTO LOCK position.	B (ECCS) in the
	[26]	REMOVE umbilical cord on 2-BKR-74-20 in 6. 2B-B Compt. 14.	9KV SD BD
	[27]	REMOVE test link on 2-BKR-74-20 in 6.9KV S Compt. 14.	D BD 2B-B
	[28]	REMOVE wheel chocks on 2-BKR-74-20 in 6.8 2B-B Compt. 14.	9KV SD BD
	[29]	REMOVE the 2-BKR-74-20 from 6.9KV SD BE 14.	D 2B-B Compt.
	[30]	RAISE 6.9KV SD BD 2B-B Compt. 14 elevator reaches full up position.	r until elevator
	[31]	INSTALL 2-BKR-74-20 into 6.9KV SD BD 2B- the test position.	B Compt. 14 to
	[32]	INSTALL umbilical cord on 2-BKR-74-20 in 6. 2B-B Compt. 14.	9KV SD BD
	[33]	INSTALL test link on 2-BKR-74-20 in 6.9KV S Compt. 14.	D BD 2B-B

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	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 198 of 274
	Data	Pack	age: Page of	Date
6.15	Resid	dual	Heat Removal Pump 2B-B Logic Test (co	ontinued)
	[34]	INS Cor	TALL wheel chocks on 2-BKR-74-20 in 6.9 mpt. 14.	KV SD BD 2B-B
	[35]	VE 5.0	RIFY ICS point XD2076 displays "PWR ON" [14])	" (Acc Crit
	[36]	ES 690	TABLISH communications between MCR P00V Shutdown Board 2B-B and SSPS cabin	Panel 2-M-6, et 2-R-51.
	[37]	VE	RIFY ICS point HD2066 displays "PULLT-L	н •
	[38]	VE	RIFY the following indications:	
		Α.	2-HS-74-20A green light ON	
		В.	2-HS-74-20A red light OFF	<u></u>
		C.	2-HS-74-20A white light OFF	
		D.	Compt. 14 green light ON	
		Ε.	Compt: 14 red light OFF	
		F.	Logic Panel red light OFF	<u> </u>
		G.	Compt. 14 breaker OPEN (green open fla	g)

NOTE

Hand Switch 2-HS-74-20A, RHR PMP B (ECCS) spring returns to A AUTO.

- [39] **PLACE** hand switch 2-HS-74-20A, RHR PMP B (ECCS) to A AUTO.
- [40] VERIFY ICS point HD2066 displays "NOT P-L".(Acc Crit 5.0[14]).
- [41] **PLACE** hand switch 2-HS-74-20A, RHR PMP B (ECCS) to C STOP **AND RELEASE**.

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	Data	Package: Page of	Date	e
6.15	Resi	lual Heat Removal Pump 2B-B Logic Test (c	continued)	
	[42]	VERIFY the following indications:		
		A. 2-HS-74-20A green light ON		
		B. 2-HS-74-20A red light OFF		
		C. 2-HS-74-20A white light OFF		
		D. Compt. 14 green light ON		
		E. Compt: 14 red light OFF		
		F. Logic Panel red light OFF		,
		G. Compt. 14 breaker OPEN (green open fl	ag)	
	[43]	VERIFY ICS point XD2077 displays "NOT RU	JN".	
	[44]	PLACE cool clean damp cloth on bulb of 2-TS EI 676)	S-30-176 (A11V	
	[45]	ENSURE hand switch 2-HS-30-176, RHR PU COOLER to AUTO.	IMP 2B-B ROOM	
	[46]	ENSURE the following fuse is INSTALLED:		
		A. 2-FU-214-B019/1-A		
				CV
	[47]	ENSURE 2-BKR-30-176-B, 480V CONT & AU BD 2B1-B breaker 9A (RHR pump 2B-B RM C CLOSED.	UX BLDG VENT Cooler Fan) is	
	[48]	DEPRESS the TEST CLOSE pushbutton on 2 6.9KV SD BD 2B-B Compt. 14.	2-BKR-74-20 in	
	[49]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B NOT close by observing the green open flag light on Compt. 14.	Compt. 14 did and local green	
	[50]	VERIFY 2-PMCL-30-176 did NOT start.		
	[51]	PLACE hand switch 2-HS-74-20C, RHR PMF START AND RELEASE .	P B (ECCS) to	

	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 200 of 274
	Data	Pacl	kage: Page of	Date
6.15	Resid	dual	Heat Removal Pump 2B-B Logic Test (co	ntinued)
	[52]	VE NO ligh	RIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C T close by observing the green open flag ar t on Compt. 14.	ompt. 14 does nd local green
	[53]	VE	RIFY 2-PMCL-30-176 did NOT start.	·
	[54]	PL ST	ACE hand switch 2-HS-74-20A, RHR PMP I ART AND RELEASE	B (ECCS) to
	[55]	VE by 14.	RIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C observing the red closed flag and local red I	ompt. 14 closes ight on Compt
	[56]	VE	RIFY ICS point Y0601D displays "CLOSED"	'
	[57]	VE	RIFY 2-PMCL-30-176 started (Acc Crit 5.0)	30]B).
	[58]	VE 5.0	RIFY ICS point XD2077 displays "RUNNING [14]).	G" (Acc Crit
	[59]	VE	RIFY the following indications:	
		Α.	2-HS-74-20A green light OFF	
		В.	2-HS-74-20A red light ON	
		C.	2-HS-74-20A white light OFF	
		D.	Compt. 14 green light OFF	
		E.	Compt. 14 red light ON	
		F.	Logic Panel red light ON. (Acc Crit 5.0[10])
	[60]	DE 6.9	PRESS the TEST TRIP pushbutton on 2-BK KV SD BD 2B-B Compt. 14.	(R-74-20 in
	[61]	VE NC on	RIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C T open by observing the red closed flag and Compt. 14.	ompt. 14 did I local red light
	[62]	VE	RIFY 2-PMCL-30-176 is running.	· · · · · · · · · · · · · · · · · · ·
	[63]	PL ST	ACE hand switch 2-HS-74-20C, RHR PMP OP AND RELEASE.	B (ECCS) to

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	Data F	Package: Page of	Date
6.15	Resid	ual Heat Removal Pump 2B-B Logic Test (continued)	
	[64]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 did NOT open by observing the red closed flag and local red light on Compt. 14.	
	[65]	VERIFY 2-PMCL-30-176 is running.	
	[66]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE .	
	[67]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	· · · ·
	[68]	VERIFY ICS point Y0601D displays "OPEN".	
· .	[69]	VERIFY the following indications:	
		A. 2-HS-74-20A green light ON	
		B. 2-HS-74-20A red light OFF	
		C. 2-HS-74-20A white light OFF	
		D. Compt. 14 green light ON	
		E. Compt. 14 red light OFF	·
		F. Logic Panel red light OFF	
	[70]	VERIFY 2-PMCL-30-176 has stopped.	
• .	[71]	ENSURE 2-BKR-30-176-B, 480V CONT & AUX BLDG VENT BD 2B1-B breaker 9A (RHR pump 2B-B RM Cooler Fan) is OPEN.	
L.	[72]	REMOVE cloth on bulb of 2-TS-30-176 (A11V EI 676)	
	[73]	ENSURE Annunciator Window 150-A, 6.9 SD BD 2B-B is CLEAR.	
	[74]	ENSURE Event Display Monitor 150-A reports 150-A 6.9 SD BD 2B-B XS IN AUX, NORMAL	
· .	[75]	PLACE transfer switch 2-XS-74-20, RHR PUMP B-B TRANS SWITCH to AUX.	

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	Data	Package: Page of	Date
6.15	Resi	dual Heat Removal Pump 2B-B Logic Test (continued)	·
	[76]	VERIFY Annunciator Window 150-A, 6.9 SD BD 2B-B ALARMS (Acc Crit 5.0[8]).	
	[77]	VERIFY Event Display Monitor 150-A reports 150-A 6.9 SD BD 2B-B XS IN AUX, ALARM	
	[78]	PLACE transfer switch 2-XS-74-20, RHR PUMP B-B TRANS SWITCH to NORMAL.	·
	[79]	VERIFY Annunciator Window 150-A, 6.9 SD BD 2B-B is CLEAR.	
	[80]	VERIFY Event Display Monitor 150-A reports 150-A 6.9 SD BD 2B-B XS IN AUX, NORMAL	
	[81]	PLACE transfer switch 2-XS-74-20, RHR PUMP B-B TRANS SWITCH to AUX.	
	[82]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to START AND RELEASE.	
	[83]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 did NOT close by observing the green open flag and local green light on Compt. 14.	· · · · ·
	[84]	PLACE hand switch 2-HS-74-20C, RHR PMP B (ECCS) to START AND RELEASE .	
	[85]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is CLOSED by observing the red closed flag and local red light on Compt. 14.	

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`	Data F	Package: Page of	Date
6.15	Resid	lual Heat Removal Pump 2B-B Logic Test (continued)	
	[86]	VERIFY the following indications:	
		A. 2-HS-74-20A green light OFF	
.'		B. 2-HS-74-20A red light OFF	
		C. 2-HS-74-20A white light OFF	
		D. Compt. 14 green light OFF	
		E. Compt. 14 red light ON	
		F. Logic Panel red light ON	
	[87]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE.	
	[88]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 did NOT open by observing the red closed flag and local red light on Compt. 14.	
	[89]	PLACE hand switch 2-HS-74-20C, RHR PMP B (ECCS) to STOP AND RELEASE .	
	[90]	VERIFY 2-BKR-74-20 in 6.9V SD BD 2B-B Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	
	[91]	VERIFY the following indications:	
		A. 2-HS-74-20A green light OFF.	
		B. 2-HS-74-20A red light OFF.	<u> </u>
		C. 2-HS-74-20A white light OFF.	
		D. Compt. 14 green light ON.	
		E. Compt. 14 red light OFF.	
		F. Logic Panel red light OFF.	· · · · · · · · · · · · · · · · · · ·
	[92] [,]	PLACE transfer switch 2-XS-74-20, RHR PUMP B-B TRANS SWITCH to NORMAL.	

	Data	Package: Page of	Date						
6.15	Residual Heat Removal Pump 2B-B Logic Test (continued)								
	[93]	CLOSE the test switch on jumper connecting 18B to 18C for relay SIATX on Shutdown Board 2B-B Logic Relay Panel.							
	[94]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is CLOSED by observing the red closed flag and local red light on Compt. 14.							
	[95]	OPEN the test switch on jumper connecting 18B to 18C for relay SIATX, on SHUTDOWN BOARD 2B-B LOGIC RELAY PANEL.							
	[96]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE to open 2-BKR-74-20 in 6.9KV SD BE 2B-B Compt. 14.)						
	[97]	CLOSE the test switch on jumper connecting terminals 11 an 12 on the K608 relay in cabinet 2-R-51.	d						
	[98]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is CLOSED by observing the red closed flag and local red light on Compt. 14 (Acc Crit 5.0[13]).							
	[99]	OPEN the test switch on jumper connecting terminals 11 and 12 on the K608 relay in cabinet 2-R-51.							
	[100]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 remains CLOSED by observing the red closed flag and local red light on Compt. 14 (Acc Crit 5.0[13]).	、 						
	[101]	CLOSE the test switch connecting terminals 13A to 13D for relay RHR UVX.							
	[102]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 remains CLOSED by observing the red closed flag and local red light on Compt. 14.							
	[103]	OPEN the test switch connecting terminals 13A to 13D for relay RHR UVX.							
	[104]	CLOSE the test switch connecting terminals 15A to 15D for relay RHR UVY.							
	[105]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 remains CLOSED by observing the red closed flag and local red light on Compt. 14.							

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6.15	Resid	ual Heat Removal Pump 2B-B Logic Test (continued)	· ·
X	[106]	CLOSE the test switch connecting terminals 13A to 13D for relay RHR UVX.	
	[107]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	
·	[108]	OPEN the test switch connecting terminals 13A to 13D for relay RHR UVX.	
	[109]	OPEN the test switch connecting terminals 15A to 15D for relay RHR UVY.	
	[110]	OPEN the test switch connecting terminals 13C to 13F for relay RHR UVX.	
	[111]	OPEN the test switch connecting terminals 15C to 15F for relay RHR UVY.	
	[112]	CLOSE the test switch on jumper connecting terminals 11 an 12 on the K608 relay in cabinet 2-R-51.	d .
	[113]	CLOSE the test switch connecting terminals 13C to 13F for relay RHR UVX.	
	[114]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is CLOSED by observing the red closed flag and local red light on Compt. 14.	
	[115]	OPEN the test switch connecting terminals 13C to 13F for relay RHR UVX.	
	[116]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE to open 2-BKR-74-20 in 6.9KV SD BE 2B-B Compt. 14.)
	[117]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	
	[118]	CLOSE the test switch connecting terminals 15C to 15F for relay RHR UVY.	

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	Data I	Package: Page of	Date
.15	Resid	ual Heat Removal Pump 2B-B Logic Test (continued)	
	[119]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is CLOSED by observing the red closed flag and local red light on Compt. 14.	
	[120]	OPEN the test switch connecting terminals 15C to 15F for relay RHR UVY.	
	[121]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE to open 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14.)
	[122]	OPEN the test switch connecting terminals 13C to 13D for relay RHR BOX.	
	[123]	OPEN the test switch connecting terminals 15C to 15D for relay RHR BOY.	 .

NOTE

Steps 6.15[124] through 6.15[136] will test breaker closing through time delay relay RHR/ST which has approximately a 15 second delay time.

- [124] CLOSE the test switch connecting terminals 15C to 15F for relay RHR UVY.
- [125] VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 CLOSES after a short delay, by observing the red closed flag and local red light on Compt. 14.
- [126] **OPEN** the test switch connecting terminals 15C to 15F for relay RHR UVY.
- [127] PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE to open 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14.
- [128] **CLOSE** the test switch connecting terminals 13C to 13D for relay RHR BOX.
- [129] **CLOSE** the test switch connecting terminals 13C to 13F for relay RHR UVX.

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6.15	Resid	ual Heat Removal Pump 2B-B Logic Test (continued)	
	[130]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 CLOSES after a short delay, by observing the red closed flag and local red light on Compt. 14.	
	[131]	OPEN the test switch connecting terminals 13C to 13F for relay RHR UVX.	
	[132]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE to open 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14.	
	[133]	OPEN the test switch connecting terminals 13C to 13D for relay RHR BOX.	
	[134]	CLOSE the test switch connecting terminals 15C to 15D for relay RHR BOY.	
	[135]	CLOSE the test switch connecting terminals 15C to 15F for relay RHR UVY.	
	[136]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 CLOSES after a short delay, by observing the red closed flag and local red light on Compt. 14.	
	[137]	OPEN the test switch connecting terminals 15C to 15F for relay RHR UVY.	
	[138]	OPEN the test switch on jumper connecting terminals 11 and 12 on the K608 relay in cabinet 2-R-51.	
	[139]	ENSURE Annunciator 14-E, M-1 THRU M-6 MOTOR TRIPOUT, is CLEAR.	
	[140]	ENSURE Event Display Monitor reports, 14-E M-1 THRU M-MOTOR TRIPOUT is CLEAR.	6
	[141]	MANUALLY ACTUATE the instantaneous over current relay 50 A $ \varnothing$ at 6.9KV SD BD 2B-B Compt. 14, AND RELEASE .	
•	[142]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	
	[143]	VERIFY the trip target is actuated on instantaneous over current relay 50 AØ at 6.9KV SD BD 2B-B Compt. 14.	

	Data	Package: Page of [Date
6.15	Resid	lual Heat Removal Pump 2B-B Logic Test (continued)	
	[144]	VERIFY 2-HS-74-20A, RHR PMP B (ECCS) white light is ON.	
	[145]	VERIFY Annunciator 14-E, M-1 THROUGH M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (Acc Crit 5.0[11]).	
	[146]	VERIFY Event Display Monitor reports, 14-E M-1 THRU M-6 MOTOR TRIPOUT is in ALARM.	
	[147]	RESET the trip target on instantaneous over current relay 50 A $ \varnothing$ at 6.9KV SD BD 2B-B Compt. 14.	
	[148]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE .	,
	[149]	VERIFY 2-HS-74-20A, RHR PMP B (ECCS) white light is OFF.	
	[150]	VERIFY Annunciator 14-E, M-1 THRU M-6 MOTOR TRIPOUT, is CLEAR.	
	[151]	VERIFY Event Display Monitor reports, 14-E M-1 THRU M-6 MOTOR TRIPOUT is CLEAR.	
	[152]	VERIFY audible buzzer is SILENT.	
	[153]	CLOSE 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 by placing hand switch 2-HS-74-20A, RHR PMP B (ECCS) to START AND RELEASE .	
	[154]	MANUALLY ACTUATE the instantaneous over current relay 50 C \emptyset at 6.9KV SD BD 2B-B Compt. 14, AND RELEASE .	
	[155]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	
	[156]	VERIFY the trip target is actuated on instantaneous over current relay 50 C \emptyset at 6.9KV SD BD 2B-B Compt. 14.	
	[157]	RESET the trip target on instantaneous over current relay 50 $C\emptyset$ at 6.9KV SD BD 2B-B Compt. 14.	
	[158]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE .	

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	Data I	Package: Page of	Date
6.15	Resid	ual Heat Removal Pump 2B-B Logic Test (continued)	
	[159]	VERIFY 2-HS-74-20A, RHR PMP B (ECCS) white light is OFF	=
	[160]	VERIFY Annunciator 14-E, M-1 THRU M-6 MOTOR TRIPOUT is CLEAR.	Г,
	[161]	VERIFY Event Display Monitor reports, 14-E M-1 THRU M-6 MOTOR TRIPOUT is CLEAR.	
	[162]	CLOSE 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 by placing hand switch 2-HS-74-20A, RHR PMP B (ECCS) to START AND RELEASE .	,
	[163]	ENSURE Annunciator 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	
	[164]	ENSURE Event Display Monitor reports, 14-D, M-1 THRU M-MOTOR OVERLOAD is CLEAR.	6
	[165]	CLOSE the contacts on Relay 51/83 A \emptyset at 6.9KV SD BD 2B-Compt. 14 by manually rotating and holding the disk.	В
•	[166]	VERIFY 2-HS-74-20A, RHR PMP B (ECCS) white light is ON	•
	[167]	VERIFY Annunciator 14-D, M-1 THRU M-6 MOTOR OVERLOAD, ALARMS (Acc Crit 5.0[12])	
	[168]	VERIFY Event Display Monitor reports, 14-D, M-1 THRU M-6 MOTOR OVERLOAD is in ALARM.	
	[169]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 does NOT TRIP.	
	[170]	RELEASE the disk on Relay 51/83 AØ at 6.9KV SD BD 2B-B Compt. 14.	
	[171]	VERIFY 2-HS-74-20A, RHR PMP B (ECCS) white light is OF	F
	[172]	VERIFY Annunciator 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	
	[173]	VERIFY Event Display Monitor reports, 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	
	[174]	CLOSE the contacts on Relay 51/83 A \emptyset at 6.9KV SD BD 2B Compt. 14 by manually rotating and holding the disk.	-B

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 210 of 274
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.15	Resid	ual Heat Removal Pump 2B-B Logic Test (co	ntinued)
	[175]	MOMENTARILY PLACE a jumper across term on the back of Relay 51/83 A \emptyset at 6.9KV SD BE 14.	inals 9 and 10) 2B-B Compt.
			CV
	[176]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Co OPEN by observing the green open flag and lo on Compt. 14.	ompt. 14 is cal green light
	[177]	VERIFY the trip target is actuated on Relay 51/ SD BD 2B-B Compt. 14.	/83 AØ at 6.9KV
	[178]	RELEASE the disk on Relay 51/83 A \emptyset at 6.9K Compt. 14.	V SD BD 2B-B
	[179]	PLACE hand switch 2-HS-74-20A, RHR PMP I STOP AND RELEASE .	B (ECCS) to
	[180]	RESET the trip target on Relay 51/83 AØ at 6.9 2B-B Compt. 14.	9KV SD BD
	[181]	CLOSE 2-BKR-74-20 in 6.9KV SD BD 2B-B Co placing hand switch 2-HS-74-20A, RHR PMP E START AND RELEASE .	ompt. 14 by 3 (ECCS) to
	[182]	CLOSE the contacts on Relay 51/83 C $ \varnothing$ at 6.9 Compt. 14 by manually rotating and holding the	KV SD BD 2B-B e disk.
	[183]	MOMENTARILY PLACE a jumper across term on the back of Relay 51/83 CØ at 6.9KV SD BI 14.	inals 9 and 10 D 2B-B Compt.
			CV
	[184]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B C OPEN by observing the green open flag and lo on Compt. 14.	ompt. 14 is cal green light
	[185]	RELEASE the disk on Relay 51/83 CØ at 6.9K	V SD BD 2B-B

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6.15	Resid	ual Heat Removal Pump 2B-B Logic Test (continued)	
	[186]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE .	
	[187]	RESET the trip target on the time over current Relay 51/83 Co at 6.9KV SD BD 2B-B Compt. 14.	ð
	[188]	VERIFY Annunciator 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	
	[189]	VERIFY Event Display Monitor reports, 14-D, M-1 THRU M-6 MOTOR OVERLOAD is CLEAR.	,
	[190]	CLOSE 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 by placing hand switch 2-HS-74-20A, RHR PMP B (ECCS) t o START AND RELEASE .	
	[191]	MANUALLY ACTUATE ground fault relay 50G at 6.9KV SD BD 2B-B Compt. 14.	
	[192]	VERIFY 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14 is OPEN by observing the green open flag and local green light on Compt. 14.	
	[193]	VERIFY ground fault relay 50G trip target is actuated at 6.9KV SD BD 2B-B Compt. 14.	/ ·
	[194]	RESET ground fault relay 50G trip target at 6.9KV SD BD 2B-B Compt. 14.	
	[195]	PLACE hand switch 2-HS-74-20A, RHR PMP B (ECCS) to STOP AND RELEASE .	
	[196]	REMOVE umbilical cord on 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14.	
	[197]	REMOVE test link on 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14.	
	[198]	REMOVE wheel chocks on 2-BKR-74-20 in 6.9KV SD BD 2B-B Compt. 14.	
	[199]	REMOVE 2-BKR-74-20 from 6.9KV SD BD 2B-B Compt. 14.	
	[200]	LOWER 6.9KV SD BD 2B-B Compt. 14 elevator until elevator reaches full down position.	-

WBN Unit 2			RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	M 2-PTI-074-01 Rev. 0000 Page 212 of 274 Date		
	Data F	Data Package: Page of				
6.15	Residual Heat Removal Pump 2B-B Logic Test (continued)					
	[201]	RE	PLACE 2-BKR-74-20 into 6.9KV SD BD 2B	B-B Compt. 14.		
	[202]	RE rea	MOVE temporary jumpers from the followin r of 6900V Shutdown Board 2B-B Logic Re	g relay socket term lay Panel:	inals in the	
		A.	13C to 13D for relay RHR BOX			
					CV	
		В.	15C to15D for relay RHR BOY			
					CV	
		C.	13C to 13F for relay RHR UVX			
					CV	
		D.	15C to 15F for relay RHR UVY			
		F	13A to 13D for relay RHR UVX		CV	
		_		. •	CV	
		₽.	15A to 15D for relay RHR UVY			
					CV	
		G.	18B to 18C for relay SIATX		. <u> </u>	

l	WBN Unit 2	RESIDUAL HI PUM	EAT REMOVAL SYSTEM P/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 213 of 274	
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6.15	Residual	Heat Removal I	Pump 2B-B Logic Test (co	ontinued)	·
	[203] I F s	step 6.15[7] was	performed, THEN		
	PE	RFORM steps 6	.15[203]A through 6.15[203]I.	,
	Α.	ENSURE the f	ollowing fuses are removed		
		A. 2-FU-21	1-B014/1N	4	
					CV
		B. 2-FU-21	1-B014/1A	· · · ·	
					CV
		C. 2-FU-21	1-B014/2N		
		D. 2-FU-21	1-B014/2A		CV
		E. 2-FU-21	1-B014/3N		CV
		F. 2-FU-21	1-B014/3A		CV
					CV
	В.	LOCATE and 9 on 2-R-48.	IDENTIFY wire SB14C4 on	TB619 terminal	
	C.	DISCONNECT 2-R-48.	۲ wire SB14C4 on TB619 te	rminal 9 on	

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6.15	Residual	Heat Removal Pump 2B-B Logic Test (co	ntinued)
	` D.	RETERMINATE wire SB14C4 lifted from 7 9 on 2-R-48 on metal.	FB619 terminal
			CV
	E.	LOCATE and IDENTIFY wire SB14C5 on 10 on 2-R-48.	TB619 terminal
	F.	DISCONNECT wire SB14C5 on TB619 ter 2-R-48.	rminal 10 on
	G.	RETERMINATE wire SB14C5 lifted from ⁻ 10 on 2-R-48 on metal.	FB619 terminal
			CV
	Н.	RECORD on Appendix I	

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(WBN Unit 2	RE	SIDUAL PU	HEAT REMOV	AL SYSTEM GIC	2-PTI-074-01 Rev. 0000 Page 215 of 274	<u></u>
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.15	Resid	ual Heat	Remova	al Pump 2B-B L	ogic Test (co.	ntinued)	
		1. EN	SURE th	e following fuse:	s are installed.		
		A.	2-FU-	211-B014/1N			
							CV
		В.	2-FU-	211-B014/1A			
							CV
		C.	2-FU-	211-B014/2N			
		D.	2-FU-	211-B014/2A	÷ .		CV
		E.	2-FU-	211-B014/3N			CV
		F.	2-FU-	211-B014/3A			CV
							CV
	[204]	REMOV relay in	E the jur cabinet 2	nper across terr 2-R-51.	ninals 11 and	12 on the K608	
							CV
	[205]	PLACE any sec	clearanc tions fror	e back on 2-PM n 6.1 to 6.13 are	P-74-20, RHR NOT complet	t Pump 2B-B if te.	

ļ	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 216 of 274	
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6.15	Resid	lual	Heat Removal Pump 2B-B Logic Test (co	ontinued)	
	[206]	RE Par	INSTALL the following relays in 6900V Shu nel OR ENTER N/A for the relay AND EXPL	tdown Board 2B-B Logic Re AIN in the Test Log:	əlay
		A.	RHR BOX Relay	· .	
				CV	,
		В.	RHR BOY Relay		
				CV	1
		U.	KHR UVX Kelay		
	,	D.	RHR UVY Relay	CV	<u>,</u>
				CV	
		E.	SIATX Relay		
				CV	,

[207] VERIFY successful completion of Subsection 6.15 (Acc Crit 5.0[33]).

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6.16 System 074 131-F ESF Component Not Normal Annunciator Test

- [1] VERIFY the following prerequisites have been completed for Subsection 6.16. (4.1[1]-4.1[8], 4.1[10], 4.1[12]-4.1[19], 4.1[21], 4.1[22], 4.2[1], 4.2[2], 4.3[7])
- [2] **IF** a danger tag is placed on 2-FCV-63-1, **THEN**

REQUEST a temporary lift of the clearance.

- [3] **ENSURE** the following valves are CLOSED from 2-M-6:
 - A. 2-FCV-63-8, RHR PMP 2A-A TO CHG PMP & SIP 2A-A SUCT ISOL
 - B. 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL
 - C. 2-FCV-72-44, CNTMT SUMP TO HDR A FLOW CONT VALVE
 - D. 2-FCV-63-11, RHR HX 2B-B OUTLET TO SIP 2B-B SUCT ISOL
 - E. 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP 2B-B ISOL
 - F. 2-FCV-72-45, CNTMT SUMP TO HDR B FLOW CONT VALVE
 - G. 2-FCV-72-40, RHR SPRAY HDR A ISOLATION
 - H. 2-FCV-72-41, RHR SPRAY HDR B ISOLATION
- [4] **ENSURE** the following valves are CLOSED from 0-M-27B
 - A. :2-FCV-70-153, RHR HEAT EXCHANGER 2B CCS OUTLET
 - B. 2-FCV-70-156, RHR HEAT EXCHANGER 2A CCS OUTLET

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6.16	Syste (cont	m 074 131-F ESF Component Not Norn inued)	nal Annunciato	r Test
	[5]	ENSURE the following valves are OPEN	from 2-M-6:	
		A. 2-FCV-63-1, RWST TO RHR SUCT	ION	
		B. 2-FCV-63-3, SI PUMP MINI FLOW RWST ISOL	RECIRC HDR TO	0
		C. 2-FCV-74-3, RHR PUMP 2A-A SUG	CTION OPEN	
		D. 2-FCV-63-4, SI PUMP 2A-A MINI F RWST ISOL	LOW RECIRC T	O
		E. 2-FCV-74-21, RHR PUMP 2B-B SL	JCTION OPEN	
		F. 2-FCV-63-175, SI PUMP 2B-B MIN RWST	I FLOW RECIRC	то
		G. 2-FCV-63-5, RWST TO SI PUMP S	UCTION ISOL	
	[6]	ENSURE Annunciator Window 131-F, E NOT NORMAL, is CLEAR.	SP COMPONEN	IT
	[7]	ENSURE Event Display Monitor reports ABNORMAL RECIRCULATION LINEUF	131-F ESP P, NORMAL	
	[8]	CLOSE 2-FCV-74-3, RHR PUMP 2A-A 2-HS-74-3A, RHR PMP A SUCTION.	SUCTION by usi	ing
	[9]	VERIFY Annunciator Window 131-F, ES NORMAL, ALARMS (Acc Crit 5.0[6]).	F COMPONENT	NOT
	[10]	VERIFY Event Display Monitor reports 1 ABNORMAL RECIRCULATION LINE UI	31-F ESP P, ALARM	
	[11]	OPEN 2-FCV-74-3, RHR PUMP 2A-A S 2-HS-74-3A, RHR PMP A SUCTION.	UCTION by usin	g
	[12]	VERIFY Annunciator Window 131-F, ES NORMAL, is CLEAR.	F COMPONENT	NOT
	[13]	VERIFY Event Display Monitor reports 1 ABNORMAL RECIRCULATION LINE UI	31-F ESP P, NORMAL	

۱ د	WBN Jnit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 219 of 274
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6.16	Syste (cont	em 0 tinue	74 131-F ESF Component Not Normal Ai	nnunciator Test
	[14]	CL 2-F	OSE 2-FCV-74-21, RHR PUMP 2B-B SUC IS-74-21A, RHR PMP B SUCTION.	TION by using
	[15]	VE NO	RIFY Annunciator Window 131-F, ESF CON RMAL, ALARMS (Acc Crit 5.0[6]) .	MPONENT NOT
	[16]	VE AB	RIFY Event Display Monitor reports 131-F E NORMAL RECIRCULATION LINE UP, ALA	ESP RM
	[17]	ОР 2-Н	EN 2-FCV-74-21, RHR PUMP 2B-B SUCT IS-74-21A, RHR PMP B SUCTION.	ION by using
	[18]	VE NO	RIFY Annunciator Window 131-F, ESF CON RMAL, is CLEAR.	MPONENT NOT
	[19]	VE AB	RIFY Event Display Monitor reports 131-F E NORMAL RECIRCULATION LINE UP, NOF	ESP RMAL
	[20]	EN	SURE the following valves are CLOSED fro	om 2-M-6:
		Α.	2-FCV-72-40, RHR SPRAY HDR A ISOLA	ATION
		В.	2-FCV-63-7, RHR HX 2A-A OUTLET TO SUCT	SIP PUMP 2A-A
		C.	2-FW-72-41, RHR SPRAY HDR B ISOLA	TION
		D.	2-FCV-63-6, RHR HX A OUTLET TO SI F	PUMP SUCT
	[21]	EN	SURE the following valves are OPEN from	2-M-6:
		A.	2-FCV-74-33, RHR HEAT EXCHANGER : CROSSTIE	2A OUTLET
		В.	2-FCV-63-47, SAFETY INJ PUMP 2A-A S ISOLATION	SUCTION
	ł	C.	2-FCV-63-177, RHR HX 2A-A OUTLET T SUCT ISOL	O SIP 2A-A
		D.	2-FCV-74-35, RHR HEAT EXCHANGER	2B OUTLET

WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 220 of 274		
·	Data	Package: Page of	Date		
6.16	System 074 131-F ESF Component Not Normal Annunciator Test (continued)				
		E. 2-FCV-63-48, SAFETY INJ PUMP 2B-B S ISOLATION			
	[22]	ENSURE the following valves are OPEN using	local position indication:		
		A. 2-FCV-74-16, RHR HEAT EXCHANGER FLOW CONTROL	2A OUTLET		
		B. 2-FCV-74-28, RHR HEAT EXCHANGER FLOW CONTROL	2B OUTLET		
	[23]	ENSURE Annunciator Window 131-F, ESF CC NOT NORMAL, is CLEAR.	DMPONENT		
•	[24]	ENSURE Event Display Monitor reports 131-F ABNORMAL RECIRCULATION MODE, NORM	ESP //AL		
	[25]	CLOSE valve 2-FCV-74-33, RHR HEAT EXCHOUTLET CROSSTIE using 2-HS-74-33A, RHF XTIE.	HANGER 2A R HX A OUTLET 		
	[26]	VERIFY Annunciator Window 131-F, ESF CON NORMAL, ALARMS. (Acc Crit 5.0[6])			
	[27]	VERIFY Event Display Monitor reports 131-F E ABNORMAL RECIRCULATION MODE, ALAR	ESP M		
	[28]	OPEN valve 2-FCV-74-33, RHR HEAT EXCHA OUTLET CROSSTIE using 2-HS-74-33A, RHF XTIE.	ANGER 2A R HX A OUTLET 		
	[29]	VERIFY Annunciator Window 131-F, ESF COI NORMAL, is CLEAR.			
	[30]	VERIFY Event Display Monitor reports 131-F E ABNORMAL RECIRCULATION MODE, NORM	ESP MAL		
	[31]	CLOSE valve 2-FCV-74-35, RHR HEAT EXCHOUTLET CROSSTIE using 2-HS-74-35A, RHF XTIE.	HANGER 2B R HX B OUTLET		
·	[32]	VERIFY Annunciator Window 131-F, ESF COI NORMAL, ALARMS (Acc Crit 5.0[6]).			

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	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 221 of 274
	Data	Package: Page of	Date
6.16	Syste (cont	em 074 131-F ESF Component Not Normal A inued)	nnunciator Test
	[33]	VERIFY Event Display Monitor reports 131-F E ABNORMAL RECIRCULATION MODE, ALAR	ESP M
	[34]	OPEN valve 2-FCV-74-35, RHR HEAT EXCHA OUTLET CROSSTIE using 2-HS-74-35A, RHF XTIE.	ANGER 2B R HX B OUTLET
	[35]	VERIFY Annunciator Window 131-F, ESF COI NORMAL, is CLEAR.	
	[36]	VERIFY Event Display Monitor reports 131-F E ABNORMAL RECIRCULATION MODE, NORM	ESP MAL
	[37]	CLOSE valve 2-FCV-74-16, RHR HEAT EXCHOUTLET FLOW CONTROL using 2-HIC-74-16 FLOW CONTROL.	HANGER 2A 6A, RHR HX A
	[38]	VERIFY Annunciator Window 131-F, ESF COI NORMAL, ALARMS, when 2-FCV-74-16, RHF EXCHANGER 2A OUTLET FLOW CONTROL full open position. (Acc Crit 5.0[6]).	MPONENT NOT R HEAT comes off the
,	[39]	VERIFY Event Display Monitor reports 131-F I ABNORMAL RECIRCULATION MODE, ALAR	ESP M
	[40]	OPEN valve 2-FCV-74-16, RHR HEAT EXCH/ OUTLET FLOW CONTROL using 2-HIC-74-16 FLOW CONTROL.	ANGER 2A 6A, RHR HX A
	[41]	VERIFY Annunciator Window 131-F, ESF CON NORMAL does NOT CLEAR until 2-FCV-74-1 EXCHANGER 2A OUTLET FLOW CONTROL	MPONENT NOT 6, RHR HEAT . is fully OPEN.
	[42]	VERIFY Event Display Monitor reports 131-F I ABNORMAL RECIRCULATION MODE, NORM	ESP MAL
	[43]	CLOSE valve 2-FCV-74-28, RHR HEAT EXCH OUTLET FLOW CONTROL using 2-HIC-74-28 FLOW CONTROL.	HANGER 2B 8A, RHR HX B
	[44]	VERIFY Annunciator Window 131-F, ESF CON NORMAL, ALARMS, when 2-FCV-74-28, RHF EXCHANGER 2B OUTLET FLOW CONTROL full open position. (Acc Crit 5.0[6]).	MPONENT NOT R HEAT . comes off the

		WBN Unit 2		RESIDUAL HEAT REMO PUMP/VALVE LO	VAL SYSTEM DGIC	2-PTI-074-01 Rev. 0000 Page 222 of 274
		Data	Pack	age: Page of		Date
	6.16	Syste (conti	m 07 inue	74 131-F ESF Component d)	Not Normal Ar	nunciator Test
		[45]	VEI Abi	RIFY Event Display Monitor NORMAL RECIRCULATION	reports 131-F E I MODE, ALARI	SP M
		[46]	OU OU FLC	EN valve 2-FCV-74-28, RHF TLET FLOW CONTROL usi DW CONTROL.	R HEAT EXCHA ng 2-HIC-74-28	NGER 2B A, RHR HX B
•		[47]	VEI NO EX(RIFY Annunciator Window 1 RMAL does NOT CLEAR ur CHANGER 2B OUTLET FLC	31-F, ESF CON htil 2-FCV-74-28 DW CONTROL	IPONENT NOT , RHR HEAT is fully OPEN.
		[48]	VEI ABI	RIFY Event Display Monitor NORMAL RECIRCULATION	reports 131-F E I MODE, NORM	IAL
		[49]	CLO	DSE the following valves:		
ъ.			A.	2-FCV-74-16, RHR HEAT FLOW CONTROL	EXCHANGER 2 2-HIC-74-16	2A OUTLET
·			В.	2-FCV-74-28, RHR HEAT FLOW CONTROL	EXCHANGER 2 2-HIC-74-28	
		,	C.	2-FCV-74-33, RHR HEAT CROSSTIE	EXCHANGER 2 2-HS-74-33	
			D.	2-FCV-74-35, RHR HEAT CROSSTIE	EXCHANGER 2 2-HS-74-35	2B OUTLET
			E.	2-FCV-74-3, RHR PUMP 2	2A-A SUCTION 2-HS-74-3	
			F.	2-FCV-74-21, RHR PUMP	2B-B SUCTIO 2-HS-74-21	N
		[50]	IF a	a temporary lift was obtained	t in step 6.16[2]	THEN
			RE	-ESTABLISH the clearance	on 2-FCV-63-1	·

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 223 of 274
	Data P	ackage: Page of	Date
6.17	RHR M	liniflow Recirculation	
	[1]	VERIFY the following prerequisites have been Subsection 6.17. (4.1[1]-4.1[22], 4.2[1], 4.2[2],	completed for 4.3[7], 4.3[8])
	[2]	COMPLETE the checklists for this Section con Appendix H.	tained in
	[3]	IF a danger tag is placed on 2-FCV-63-1, THE	Ν
	· .	REQUEST a temporary lift of the clearance.	
	[4]	ENSURE clearance on 2-PMP-74-10, RHR Put for the performance of this section.	Imp 2A-A is lifted
	[5]	ENSURE clearance on 2-PMP-74-20, RHR Put for the performance of this section.	Imp 2B-B is lifted
·	[6]	FILL AND VENT the RHR piping including the lines per 2-SOI-74.01 Sections 5.1 and 5.2.	HTX bypass
	[7]	ESTABLISH communications between MCR F 6900V SHUTDOWN BOARDS 2A-A AND 2B-I pump rooms.	Panel 2-M-6, B, and the RHR
	[8]	ENSURE Component Cooling is available to R water heat exchangers.	RHR pump mechanical seal
		RHR Pump 2A-A	
		RHR Pump 2B-B	
	[9]	ENSURE RHR pump room cooling is available Pump 2A-A and 2B-B.	ofor both RHR

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYS PUMP/VALVE LOGIC	STEM 2-PTI-074-01 Rev. 0000 Page 224 of 274
	Data	Package: Page of	Date
6.17	RHR	Miniflow Recirculation (continued)	
	[10]	ENSURE the following valves are CLOS	SED from 2-M-6 :
		A. 2-FCV-63-93, RHR TO COLD LEG ISOLATION	2 & 3 INJECTION
		B. 2-FCV-63-94, RHR TO COLD LEG ISOLATION	1 & 4 INJECTION
		C. 2-FCV-63-172, RHR TO HOT LEG ISOLATION	1 & 3 INJECTION
		D. 2-FCV-74-35, RHR HEAT EXCHAN CROSSTIE	NGER 2B OUTLET
	[11]	ENSURE the following valves are OPEN	N from 2-M-6 :
۰.		A. 2-FCV-63-1, RWST TO RHR SUC	TION
		B. 2-FCV-74-3, RHR PUMP 2A-A SU	CTION
		C. 2-FCV-74-21, RHR PUMP 2B-B SI	
		D. 2-FCV-74-33, RHR HEAT EXCHAN CROSSTIE	NGER 2A OUTLET
	[12]	ENSURE the following valve are closed	using local position indication:
		A. 2-FCV-74-16, RHR HEAT EXCHAN FLOW CONTROL	NGER 2A OUTLET
		B. 2-FCV-74-28, RHR HEAT EXCHAN FLOW CONTROL	NGER 2B OUTLET
		C. 2-FCV-74-32, RHR HEAT EXCHAN FLOW CONTROL	NGER A/B BYPASS
	[13]	ENSURE the following hand switches a	re in P-AUTO:
		A. 2-HS-74-12A, RHR PMP A MINI FI	LOW
		B. 2-HS-74-24A, RHR PMP B MINI FI	LOW
	[14]	ENSURE Annunciator Window 113-C, F PRESS HI/MINI FLOW CONDITION, is	RHR PUMP DISCH CLEAR

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•	Data	Pack	age: Page of	Date
6.17	RHR	Minif	low Recirculation (continued)	
	[15]	EN: ON	SURE Event Display Monitor reports, 113-C RHR TRAIN A OR B, NORMAL.	LOW FLOW
			CAUTION	
Do N(OT oper	ate F	RHR pump at less than 500 gpm miniflow.	
	[16]	VEF FLC	RIFY valve 2-FCV-74-12, RHR PUMP 2A-A OW VALVE is CLOSED.	
	[17]	STA (EC	ART RHR Pump 2A-A using 2-HS-74-10A, CS).	RHR PMP A
	[18]	VEF Flo	RIFY valve 2-FCV-74-12, RHR PUMP 2A-A DW VALVE OPENS (Acc Crit 5.0[28]) .	
	[19]	RE 2-F gpn	CORD RHR Pump 2A-A miniflow (Acc Crit I-74-12 (A9V EI 680)gpm (5 n)	5.0[19]) . 00 to 1500
				CV
	[20]	VEI PRI 5.0	RIFY Annunciator Window 113-C, RHR PU ESS HI/MINI FLOW CONDITION, ALARMS [9]) .	MP DISCH S (Acc Crit
	[21]	VEI RH	RIFY Event Display Monitor reports, 113-C R TRAIN A OR B, ALARM.	LOW FLOW ON
	[22]	THI EX0 usir	ROTTLE OPEN valve 2-FCV-74-16, RHR H CHANGER 2A OUTLET FLOW CONTROL ng 2-HIC-74-16.	IEAT to full open
	[23]	SL(2-F CL(2-F gpn	OWLY THROTTLE OPEN valve 2-HCV-74- CV-74-12, RHR PUMP 2A-A MINIMUM FL OSES AND RECORD RHR Pump 2A-A min I-74-12 (A9V EI 680)gpm (1 n)(Acc Crit 5.0[28])	34 until valve OW VALVE hiflow 400±22.5

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	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM 2-PTI-074-01 PUMP/VALVE LOGIC Rev. 0000 Page 226 of 274	1
	Data	Package: Page of Data	ate
5.17	RHR	Miniflow Recirculation (continued)	
	[24]	VERIFY Annunciator Window 113-C, RHR PUMP DISCH PRESS HI/MINI FLOW CONDITION, CLEARS.	
	[25]	VERIFY Event Display Monitor reports, 113-C LOW FLOW ON RHR TRAIN A OR B, NORMAL.	
	[26]	VERIFY:	
		A. Ammeter 2-EI-74-5A (Panel 2-M-6) is reading within its operating range (i.e. 0-30 AMPS). (Acc Crit 5.0[35])	
		 Ammeter 2-EI-74-5B (6900 SD BD 2A-A, Compt 14) indicates approximately the same as 2-EI-74-5A. (Acc Crit 5.0[35]) 	
	[27]	SLOWLY CLOSE valve 2-HCV-74-34 until valve 2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE OPENS AND RECORD RHR Pump 2A-A miniflow 2-FI-74-12 (A9V EI 680) gpm (750±22.5 gpm). (Acc Crit 5.0[28])	•
			CV
	[28]	STOP RHR Pump 2A-A using 2-HS-74-10A, RHR PMP A (ECCS).	
·	[29]	CLOSE valve 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL using 2-HIC-74-16.	
	[30]	ENSURE 2-HS-74-12A, RHR PMP A MINI FLOW is in P AUTO.	
	[31]	PLACE transfer switch 2-XS-74-10, RHR PUMP A-A TRANS SWITCH to AUX.	
	[32]	VERIFY valve 2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE is CLOSED.	
	[33]	START RHR Pump 2A-A using 2-HS-74-10C, RHR PMP A (ECCS).	
	[34]	VERIFY valve 2-FCV-74-12, RHR PUMP 2A-A MINIMUM	

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	Data I	Package: Page of	Date
6.17	RHR	Miniflow Recirculation (continued)	
	[35]	THROTTLE OPEN valve 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL to full open using 2-HIC-74-16.	· · .
	[36]	SLOWLY THROTTLE OPEN valve 2-HCV-74-34 until valve 2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE CLOSES.	
	[37]	SLOWLY CLOSE valve 2-HCV-74-34.	
	[38]	VERIFY valve 2-FCV-74-12, RHR PUMP 2A-A MINIMUM FLOW VALVE OPENS.	
	[39]	STOP RHR Pump 2A-A using 2-HS-74-10C, RHR PMP A (ECCS).	·
	[40]	CLOSE valve 2-FCV-74-16, RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL using 2-HIC-74-16.	
	[41]	CLOSE valve 2-FCV-74-33, RHR HEAT EXCHANGER 2A OUTLET CROSSTIE using 2-HS-74-33A, RHR HX A OUTLE XTIE.	т.
	[42]	PLACE transfer switch 2-XS-74-10, RHR PUMP A-A TRANS SWITCH to NORMAL.	
	[43]	VERIFY Annunciator Window 113-C, RHR PUMP DISCH PRESS HI/MINI FLOW CONDITION, CLEARS.	
	[44]	VERIFY Event Display Monitor reports, 113-C LOW FLOW O RHR TRAIN A OR B, NORMAL.	N
	[45]	CLOSE valve 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE using 2-HS-74-35A, RHR HX B OUTLE XTIE.	т

CAUTION

Do NOT operate RHR pump at less than 500 gpm miniflow.

[46] **VERIFY** valve 2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE is CLOSED.

WB Unit	iN t 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 228 of 274
D	ata Pac	kage: Page of	Date
6.17 R	HR Min	iflow Recirculation (continued)	
[4	17] ST (E0	ART RHR Pump 2B-B using 2-HS-74-20A, I CCS).	RHR PMP B
[4	18] VE FL	RIFY valve 2-FCV-74-24, RHR PUMP 2B-B OW VALVE OPENS (Acc Crit 5.0[29]) .	MINIMUM
[4	19] RE 2-F gpt	CORD RHR Pump 2B-B miniflow (Acc Crit FI-74-24 (A9V EI 680)gpm (5 m)	5.0[19]) . 00 to 1500
[5	50] VE PR 5.0	RIFY Annunciator Window 113-C, RHR PU ESS HI/MINI FLOW CONDITION, ALARMS [[9]).	MP DISCH 6 (Acc Crit
[5	51] VE RH	RIFY Event Display Monitor reports, 113-C IR TRAIN A OR B, Alarm.	LOW FLOW ON
[5	52] TH EX usi	ROTTLE OPEN valve 2-FCV-74-28, RHR H CHANGER 2B OUTLET FLOW CONTROL ing 2-HIC-74-28.	IEAT to full open
[5	53] SL 2-F CL 2-F gp	OWLY THROTTLE OPEN valve 2-HCV-74- CV-74-24, RHR PUMP 2B-B MINIMUM FLO OSES AND RECORD RHR Pump 2A-A mir FI-74-24 (A9V EI 680)gpm (1 m)(Acc Crit 5.0[29])	34 until valve OW VALVE hiflow 400±22.5
[5	54] EN PF	ISURE Annunciator Window 113-C, RHR PI RESS HI/MINI FLOW CONDITION, CLEARS	JMP DISCH
[5	55] VE RH	RIFY Event Display Monitor reports, 113-C IR TRAIN A OR B, Normal.	LOW FLOW ON

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l	WBN Jnit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 229 of 274		
	Data	Pack	age: Page of	Date _		
6.17	RHR	Mini	flow Recirculation (continued)			
	[56]	VE	RIFY:			
·		A.	Ammeter 2-EI-74-17A (Panel 2-M-6) is rea operating range (0-30 AMPS). (Acc Crit 5	iding within its .0[35]) _		
		B.	Ammeter 2-EI-74-17B (6900V SD BD 2B-E indicates approximately the same as 2-EI- Crit 5.0[35])	3, Compt 14) 74-17A. (Acc –		
	[57]	SL(RH 2-F (Ac	OWLY CLOSE valve 2-HCV-74-34 until valve R PUMP 2B-B MINIMUM FLOW VALVE OF CORD RHR Pump 2A-A miniflow I-74-24 (A9V EI 680)gpm (7 c Crit 5.0[29])	ve 2-FCV-74-24, PENS AND 50±22.5 gpm). —		
					CV	
	[58]	ST((EC	DP RHR Pump 2B-B using 2-HS-74-20A, RI CCS).	HR PMP B		
	[59]	CL OU	OSE valve 2-FCV-74-28, RHR HEAT EXCH TLET FLOW CONTROL using 2-HIC-74-28	ANGER 2B		
	[60]	EN : AU	SURE 2-HS-74-24A, RHR PMP B MINI FLC TO.	DW is in P 		
	[61]	PL/ SW	ACE transfer switch 2-XS-74-20, RHR PUM /ITCH to AUX.	P B-B TRANS		
	[62]	VEI FL(RIFY valve 2-FCV-74-24, RHR PUMP 2B-B DW VALVE is CLOSED.	MINIMUM		
	[63]	ST/ (EC	ART RHR Pump 2B-B using 2-HS-74-20C, I CCS).	RHR PMP B		
	[64]	VEI FLC	RIFY valve 2-FCV-74-24, RHR PUMP 2B-B DW VALVE OPENS.	MINIMUM		
	[65]	TH EX usir	ROTTLE OPEN valve 2-FCV-74-28, RHR H CHANGER 2B OUTLET FLOW CONTROL ng 2-HIC-74-28.	IEAT to full open –		

	Data I	Package: Page of	Date
6.17	RHR I	Miniflow Recirculation (continued)	
	[66]	SLOWLY THROTTLE OPEN valve 2-HCV-74-34 until valve 2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE CLOSES.	
	[67]	SLOWLY CLOSE valve 2-HCV-74-34.	
. •	[68]	VERIFY valve 2-FCV-74-24, RHR PUMP 2B-B MINIMUM FLOW VALVE OPENS.	
	[69]	STOP RHR Pump 2B-B using 2-HS-74-20C, RHR PMP B (ECCS).	
	[70]	CLOSE valve 2-FCV-74-28, RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL using 2-HIC-74-28.	
	[71]	CLOSE valve 2-FCV-74-35, RHR HEAT EXCHANGER 2B OUTLET CROSSTIE using 2-HS-74-35A, RHR HX B OUTLET XTIE.	- ·
	[72]	PLACE transfer 2-XS-74-20, RHR PUMP B-B TRANS SWITCH to NORMAL.	. •
	[73]	ENSURE Annunciator Window 113-C, RHR PUMP DISCH PRESS HI/MINI FLOW CONDITION, is CLEAR.	
	[74]	LIFT the lead at TB23L terminal 1 on the field side in Panel 2-R-23.	
			CV
	[75]	VERIFY Annunciator Window 113-C, RHR PUMP DISCH PRESS HI/MINI FLOW CONDITION, ALARMS (Acc Crit 5.0[9]).	
	[76]	VERIFY Event Display Monitor reports, 113-C RHR PUMP A HIGH DISCH PRESS (PS-74-13), Alarm.	·
	[77]	RELAND the lead at TB23L terminal 1 on the field side in Panel 2-R-23.	

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6.17	RHR	Mini	flow Recirculation (continued)			
	[78]	EN: PRI	SURE Annunciator Window 113-C, RHR PL ESS HI/MINI FLOW CONDITION, CLEARS	JMP DISCH		
	[79]	VEI HIG	RIFY Event Display Monitor reports, 113-C GH DISCH PRESS (PS-74-13), Normal.	RHR PUMP A	_	
	[80]	LIF 2-R	T the lead at TB21L terminal 1 on the field s -21.	side in Panel		
					_	CV
	[81]	VEI PRI 5.0	RIFY Annunciator Window 113-C, RHR PUI ESS HI/MINI FLOW CONDITION, ALARMS [9]) .	MP DISCH 5 (Acc Crit		
	[82]	VEI HIG	RIFY Event Display Monitor reports, 113-C GH DISCH PRESS (PS-74-26), ALARM.	RHR PUMP B	_	
	[83]	RE i Par	LAND the lead at TB21L terminal 1 on the f nel 2-R-21.	ield side in	_	
					_	CV
	[84]	EN: PR	SURE Annunciator Window 113-C, RHR PL ESS HI/MINI FLOW CONDITION, CLEARS	JMP DISCH		
	[85]	VEI HIC	RIFY Event Display Monitor reports, 113-C GH DISCH PRESS (PS-74-26), Normal.	RHR PUMP B		
	[86]	IF a	a temporary lift was obtained in step 6.17[3]	, THEN		
		RE	-ESTABLISH the clearance on 2-FCV-63-1	•	_	
	[87]	VE 5.0	RIFY successful completion of Subsection 6 [32]).	6.17 (Acc Crit	_	

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				.:	
6.18	Misce	ellan	eous Instrument Annunciators		
	[1]	VEI Sut 4.1	RIFY the following prerequisites have been osection 6.18. (4.1[1]-4.1[8], 4.1[10], 4.1[12] [21], 4.1[22], 4.2[1], 4.2[2], 4.3[7])	completed for -4.1[18],	
	[2]	ES ⁻ upp	TABLISH communications between MCR Pper level of pipe chase, EI. 713 (A11V).	anel 2-M-6 and	d
	[3]	EN: Pip	SURE Annunciator Window 113-B "RHR/C\ E BREAK" is CLEAR.	/CS HI TEMP	
	[4]	EN: Lin	SURE Events Display Monitor reports, 113- E HI TEMP PIPE BREAK (TS-74-43) is CLI	B RHR RET EAR.	
	[5]	VEI BRI	RIFY white light 2-XI-74-43, LOOP 4 HL TO EAK - 125 F is OFF.	RHR PIPE	
	[6]	PL/ HTI 737	ACE a jumper across the terminals (Wire No R12) in JB-3443 (2-TS-74-43) on ceiling of p 7, A11V).	os. HTR11 and bipe chase, El.	l
					CV
	[7]	` VE I PIP	RIFY Annunciator Window 113-B "RHR/CV(E BREAK" is CLEAR.	CS HI TEMP	
	[8]	VE I LIN	RIFY Events Display Monitor reports, 113-B E HI TEMP PIPE BREAK (TS-74-43) is CLI	RHR RET EAR.	
	[9]	PL/ in J A11	ACE a jumper the terminals (Wire Nos. HTF B-3443 (2-TS-74-44) on ceiling of pipe chas IV).	R12 and HTR13 se, (El. 737,	3)
					CV
	[10]	VE I PIP	RIFY Annunciator Window 113-B "RHR/CV(PE BREAK" ALARMS (Acc Crit 5.0[20]) .	CS HI TEMP	
	[11]	VE LIN	RIFY Events Display Monitor reports, 113-B E HI TEMP PIPE BREAK (TS-74-43) is in A	RHR RET LARM.	

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	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 233 of 274	
	Data	Package: Page of	Date	- <u></u>
}	Misc	ellaneous Instrument Annunciators (continue	ed)	
	[12]	VERIFY white light 2-XI-74-43, LOOP 4 HL TC BREAK - 125 F is ON. (Acc Crit 5.0[20])	RHR PIPE	
	[13]	REMOVE the jumper across the terminals HTF in JB-3443 (2-TS-74-43).	R11 and HTR12)	
				CV
	[14]	VERIFY Annunciator Window 113-B "RHR/CV PIPE BREAK" is CLEAR.	CS HI TEMP	
	[15]	VERIFY Events Display Monitor reports, 113-E LINE HI TEMP PIPE BREAK (TS-74-43) is CL	3 RHR RET EAR.	
	[16]	REMOVE the jumper across the terminals (Winand HTR13) in JB-3443 (2-TS-74-44).	re Nos. HTR12	
				CV
	[17]	VERIFY Annunciator Window 113-B "RHR/CV PIPE BREAK" is CLEAR.	CS HI TEMP	
	[18]	VERIFY Events Display Monitor reports, 113-E LINE HI TEMP PIPE BREAK (TS-74-43) is CL	3 RHR RET EAR.	
	[19]	VERIFY white light 2-XI-74-43, LOOP 4 HL TC BREAK - 125 F is OFF.	ORHR PIPE	
	[20]	VERIFY white light 2-XI-74-45, LOOP 4 HL TC BREAK - 125 F is OFF.	ORHR PIPE	
	[21]	PLACE a jumper across the terminals (Wire N HTR22) in JB-3444 (2-TS-74-45) on ceiling of 737, A11V).	os. HTR21 and pipe chase, (el	
			•	CV
	[22]	VERIFY Annunciator Window 113-B "RHR/CV PIPE BREAK" is CLEAR.	CS HI TEMP	
	[23]	VERIFY Events Display Monitor reports, 113-E LINE HI TEMP PIPE BREAK (TS-74-43) is CL	3 RHR RET EAR.	

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	WBN Unit 2		RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 234 of 274	
	Data	Pack	age: Page of	Date	-
6.18	Misc	ellan	eous Instrument Annunciators (continue	ed)	
	[24]	PL/ HTI 737	ACE a jumper across the terminals (Wire Nor R23) in JB-3444 (2-TS-74-46)on ceiling of p 7, A11V).	os. HTR22 and ipe chase, (el 	
				_	CV
	[25]	VE I PIP	RIFY Annunciator Window 113-B "RHR/CV E BREAK" ALARMS (Acc Crit 5.0[20]) .	CS HI TEMP	
	[26]	VE I LIN	RIFY Events Display Monitor reports, 113-E E HI TEMP PIPE BREAK (TS-74-43) is in A	RHR RET	
	[27]	VE BR	RIFY white light 2-XI-74-45, LOOP 4 HL TC EAK - 125 F is ON. (Acc Crit 5.0[20])	RHR PIPE	
	[28]	RE and	MOVE the jumper across the terminals (Win HTR22) in JB-3444 (2-TS-74-45).	e Nos. HTR21	
				·	CV
	[29]	VE I PIP	RIFY Annunciator Window 113-B "RHR/CV PE BREAK" is CLEAR.	СЅ НІ ТЕМР	
	[30]	VE LIN	RIFY Events Display Monitor reports, 113-E E HI TEMP PIPE BREAK (TS-74-43) is CL	B RHR RET EAR	
	[31]	RE HT	MOVE the jumper across terminals (Wire N R23) in JB-3444 (2-TS-74-46).	os. HTR22 and	
					CV
	[32]	ES Par	TABLISH communications between MCR F nel 2-L-12, El. 676, Col A9V.	Panel 2-M-6 and	
·	[33]	EN SE	SURE Annunciator Window 113-D "RHR P AL HX TEMP HI/HI-HI" is CLEAR.	UMP A/B MECH	
	[34]	EN Me	SURE Event Display Monitor reports, 113-E CH SEAL HX TEMP HI (TIS-74-7), NORM/) RHR PUMP A AL	
	[35]	VE BR	RIFY white light 2-XI-74-45, LOOP 4 HL TC EAK - 125 F is OFF.	RHR PIPE	

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U	vBN nit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 235 of 27	4
	Data	Package: Page of	D	ate
3	Misc	ellaneous Instrument Annunciators (continue	ed)	
	[36]	PLACE a jumper across terminals BB4 and BE 2-L-12 EI. 676, Col A9V (TIS-74-7, HI).	35 in Panel	
				CV
	[37]	VERIFY Annunciator Window 113-D "RHR PU SEAL HX TEMP HI/HI-HI" ALARMS (Acc Crit	MP A/B MECH 5.0[21]).	
	[38]	VERIFY Event Display Monitor reports, 113-D MECH SEAL HX TEMP HI (TIS-74-7), Alarm.	RHR PUMP A	
	[39]	REMOVE the jumper across terminals BB4 an 2-L-12.	d BB5 in Panel	· ·
				CV
	[40]	ENSURE Annunciator Window 113-D "RHR P SEAL HX TEMP HI/HI-HI" is CLEAR.	UMP A/B MECH	
	[41]	VERIFY Event Display Monitor reports, 113-D MECH SEAL HX TEMP HI (TIS-74-7), NORM/	RHR PUMP A AL.	
	[42]	PLACE a jumper across terminals BB7 and BI 2-L-12 (TIS-74-7, HI-HI).	38 in Panel	
				CV
	[43]	VERIFY Annunciator Window 113-D "RHR PU SEAL HX TEMP HI/HI-HI" ALARMS (Acc Crit	IMP A/B MECH 5.0[21]).	
	[44]	VERIFY Event Display Monitor reports, 113-D MECH SEAL HX TEMP HI-HI (TIS-74-7), Alar	RHR PUMP A m.	
•	[45]	REMOVE the jumper across terminals BB7 an 2-L-12.	d BB8 in Panel	
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WE Uni	N RESIDUAL HEAT REMOVAL SYSTEM 2-PTI-07 2 PUMP/VALVE LOGIC Rev. 000 Page 23	4-01)0 6 of 274	
C	ata Package: Page of	Date	
6.18 N	iscellaneous Instrument Annunciators (continued)	. •	
[4	7] VERIFY Event Display Monitor reports, 113-D RHR PUM MECH SEAL HX TEMP HI-HI (TIS-74-7), Normal.	1P A	-
[4	8] ESTABLISH communication between MCR Panel 2-M-6 Panel 2-L-13, El. 676, Col A9V.	and	
[4	9] PLACE a jumper across terminals BB4 and BB5 in Pane 2-L-13 El. 676, Col A9V (TIS-74-19, HI).	9 1	~
		C	V
[{	0] VERIFY Annunciator Window 113-D "RHR PUMP A/B M SEAL HX TEMP HI/HI-HI" ALARMS (Acc Crit 5.0[21]).	IECH	
[{	1] VERIFY Event Display Monitor reports, 113-D RHR PUM MECH SEAL HX TEMP HI (TIS-74-19), Alarm.	ИР В	
[{	2] REMOVE the jumper across terminals BB4 and BB5 in F 2-L-13.	Panel	
		C	;v
[{	3] ENSURE Annunciator Window 113-D "RHR PUMP A/B I SEAL HX TEMP HI/HI-HI" is CLEAR.	MECH	
[{	4] VERIFY Event Display Monitor reports, 113-D RHR PUN MECH SEAL HX TEMP HI (TIS-74-19), Normal.	/IP B	
[{	 PLACE a jumper across terminals BB7 and BB8 in Pane 2-L-13 (TIS-74-19, HI-HI). 	9l 	
			<u>:</u>
[{	6] VERIFY Annunciator Window 113-D "RHR PUMP A/B M SEAL HX TEMP HI/HI-HI" ALARMS (Acc Crit 5.0[21]).	IECH	
[{	 7] VERIFY Event Display Monitor reports, 113-D RHR PUN MECH SEAL HX TEMP HI-HI (TIS-74-19), Alarm. 	/IP B	'
		· · ·	

	WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM 2-PTI-074-01 PUMP/VALVE LOGIC Rev. 0000 Page 237 of 27	74
	Data	Package: Page of [Date
6.18	Misc	ellaneous Instrument Annunciators (continued)	
	[58]	REMOVE the jumper across terminals BB7 and BB8 in Panel 2-L-13.	
		• • •	CV
	[59]	ENSURE Annunciator Window 113-D "RHR PUMP A/B MECH SEAL HX TEMP HI/HI-HI" is CLEAR.	
	[60]	VERIFY Event Display Monitor reports, 113-D RHR PUMP B	

MECH SEAL HX TEMP HI-HI (TIS-74-19), Normal.

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	Unit 2	PUMP/VALVE LOGIC	2-P11-074-01 Rev. 0000 Page 238 of 274
	Data	Package: Page of	Date
7.0	POST		
	[1]	REMOVE the jumper with a test switch across 27 (wires 10D05 and 10D06) on rear panel of REAC MOV BD 2A1-A.	s points 16 and 10D on 480V
		х	CV
·	[2]	REMOVE the jumper with a test switch across 27 (wires 10D05 and 10D06) on rear panel of REAC MOV BD 2B1-B.	s points 16 and 10D on 480V
			CV
	[3]	REMOVE the temporary jumper from the lifte TB112-2 in Panel 2-R-54 on the field side and to TB112-1.	d wire and d reland the wire
			CV
	[4]	REMOVE the temporary jumper from the lifte TB214-11 in Panel 2-R-55 on the field side an to TB214-10.	d wire and nd reland the wire
			CV
	[5]	NOTIFY the Unit 2 Supervisor (US/SRO) or S (SM) or Designee (DS) of the test completion alignment.	Shift Manager and System
		U2 US/SRO/SM/DS	Signature Date
	[6]	NOTIFY the Unit 1 Supervisor (US/SRO) or S (SM) or Designee (DS)of the test completion alignment.	Shift Manager and System

	Data	Package: Page of	Date					
7.0	POST PERFORMANCE ACTIVITY (continued)							
•	[7]	ENSURE participants who initialed or signed steps in the prerequisite and instruction sections, test logs, or data sheets enter their initials and signature on Appendix I, Signature Log	; 					
	[8]	VERIFY that Post-test calibration of the M&TE used to record quantitative acceptance criteria has been satisfactorily performed and results RECORDED on SMP-9.0, Measuring and Test Equipment (M&TE) Log.	l .					
	[9]	VERIFY that Post-test calibration of permanent plant instruments used to record quantitative acceptance criteria ha been satisfactorily performed and the results RECORDED on Appendix C, Permanent Plant Instrumentation Log.	as 					

Data Package: Page ____ of ____

Date _

8.0 RECORDS

A. QA Records

The following documents are QA records and are handled in accordance with the approved with the approved Document Control Records Management (DCRM) Program.

Completed Test Package

B. Non-QA Records

None

Appendix A (Page 1 of 2)

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)	
FSAR				
FSAR SECTIONS 6.2 AND 6.3				
FSAR Section 14.2				
2-SOI-74.01				
2-TSD-030A-1				
2-TSD-074-1				
2-F-74-12				
2-F-74-24				
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Appendix A (Page 2 of 2)

TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

Data Package: Page ____ of ____

Date _____

PROCEDURE/ INSTRUCTION	REVISION/CHANGES	IMPAĊT Yes/No	INITIAL AND DATE. (N/A for no change)	
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Reviewed By: ____/____/

WBN Unit 2

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RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC

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Appendix B (Page 1 of 1)

TEMPORARY CONDITION LOG

Data Package: Page _____ of ____

Date _

NOTE

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

	TEMPORARY	PERFORMED		RETURNED TO NORMAL		
ITEM	CONDITION	Step	Perf. By/Date	Step	Returned By/Date	
NUMBER	DESCRIPTION	Number	2nd By/Date	Number	2nd By/Date	
		×				
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Appendix C (Page 1 of 1)

PERMANENT PLANT INSTRUMENTATION LOG

Data Package: Page ____ of ____

Date ____

INSTRUMENT OR INSTRUMENT LOOP NO.	CAL DUE DATE	FILLED AND VENTED ¹	PLACED IN SERVICE ¹	USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		USED FOR QUANTITATIVE ACC CRIT		POST-TEST CAL DATE ²	POST-TEST CALIBRATION ACCEPTANCE
		INITIAL/DATE	INITIAL/DATE	YES	NO		INITIAL/DATE																
2-FI-74-12																							
2-FI-74-24																							
2-EI-74-5A		. :																					
2-EI-74-5B																							
2-EI-74-17A																							
2-EI-74-17B																							
	<u> </u>																						
			* -																				

1 This data to be entered during test conduct.

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

WBN F Unit 2	WBN RESIDUAL HEAT REMOVAL SYSTEM 2 Jnit 2 PUMP/VALVE LOGIC F				
	Appendix D (Page 1 of 4)				
	VALVE LINEUP				
Data Packag	e: Page of		Date		
	· · ·				
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	VERIFIER INITIAL
	Auxiliary Bldg el. 676		د		· ·
RHR PUMP 2A-A SUCTION	A10V/676 Pmp Rm 2A	OPEN	2-FCV-74-3		CV
	Auxiliary Bldg el. 676		. <u>, ,</u>		
RHR PUMP 2B-B SUCTION	A10U/676 Pmp Rm 2B	CLOSED	2-FCV-74-21		CV
· · ·	Auxiliary Bldg el. 676			· ·	
RHR PUMP 2A-A MINIMUM FLOW VALVE	A11V/676 Pipechase	CLOSED	2-FCV-74-12		CV
RHR PUMP 2B-B MINIMUM FLOW VALVE	A11U/676 Pipechase	CLOSED	2-FCV-74-24		CV
· · · · · · · · · · · · · · · · · · ·	Auxiliary Bldg el. 692				
RWST TO RHR SUCTION	A11U/692 Pipe Chase	CLOSED	2-FCV-63-1		CV
CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL	A12V/692 Pipe Chase (RHR Sump VIv Rm)	CLOSED	2-FCV-63-72		CV

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VALVE LINEUP

Data Package: Page _____ of _____

Date _____

NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	VERIFIER INITIAL
CONTAINMENT SUMP TO RHR PUMP 2B-B ISOL	A12V/692 Pipe Chase (RHR Sump Vlv Rm)	CLOSED	2-FCV-63-73		CV
2-FCV-63-72 BONNET PRESS EQUALIZING VALVE	A12V/692 Pipe Chase (RHR Sump Vlv Rm)	CLOSED	2-ISV-63-72		cv
2-FCV-63-73 BONNET PRESS EQUALIZING VALVE	A12V/692 Pipe Chase (RHR Sump Vlv Rm)	CLOSED	2-ISV-63-73		CV
	Auxiliary Bldg el. 713				
RHR HX 2B-B OUTLET TO SIP 2B-B SUCT ISOL	A11V/713 BIT Rm	CLOSED	2-FCV-63-11		CV
RHR TO HOT LEG 1 & 3 INJECTION ISOLATION	A11W/713 BIT Rm	CLOSED	2-FCV-63-172		CV
RHR PMP 2A-A TO CHG PMP & SIP 2A-A SUCT	A11W/713 BIT Rm	CLOSED	2-FCV-63-8		CV
RHR TO COLD LEG 2 & 3 INJECTION ISOLATION	A11W/713 BIT Rm	CLOSED	2-FCV-63-93		CV
RHR TO COLD LEG 1 & 4 INJECTION ISOLATION	A11W/713 BIT Rm	CLOSED	2-FCV-63-94		CV

	WBN Unit 2	RESID	IDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC		2-PTI-0 Rev. 00 Page 24	74-01 00 \$7 of 274		
_			Appendix D (Page 3 of 4)		3			
			VALVE LINEUP					
Data Pack	age: Page of _		C	Date _		-		
NOME	ENCLATURE		LOCATION	PC	SITION	UNID	PERF	VERIFIER INITIAL
			Auxiliary Bldg el. 713					
RHR HEAT EXCHANG CONTROL	ER 2B OUTLET FLOW		A9V/713 Hx Rm 2B	CI	LOSED	2-FCV-74-28		CV
RHR HEAT EXCHANG	ER 2B OUTLET CROSS	ΓIE	A9V/728 Hx Rm 2B	C	LOSED	2-FCV-74-35		CV
RHR RWST RETURN			A9V/728 Hx Rm 2B	C	LOSED	2-HCV-74-34		CV
RHR HEAT EXCHANG	ER 2B MANUAL BYPAS	3	A9V/713 Hx Rm 2B	C	LOSED	2-HCV-74-37		CV
			Auxiliary Bldg el. 713				ų ir	
RHR HEAT EXCHANG CONTROL	ER 2A OUTLET FLOW		A9W/713 Hx Rm 2A	C	LOSED	2-FCV-74-16		cv
RHR HEAT EXCHANG CONTROL	ER A/B BYPASS FLOW		A9W/728 Hx Rm 2A	C	LOSED	2-FCV-74-32		CV
RHR HEAT EXCHANG	ER 2A OUTLET CROSS	TIE	A9W/728 Hx Rm 2A	C	LOSED	2-FCV-74-33		CV

A9W/713 Hx Rm 2A

RHR HEAT EXCHANGER 2A MANUAL BYPASS

2-HCV-74-36

CLOSED

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CV

WBN Unit 2	RESIDUAL HEAT REMOVAL SYSTEM PUMP/VALVE LOGIC	2-PTI-074-01 Rev. 0000 Page 248 of 274
	Appendix D	
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	VALVE LINEUP	
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NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	VERIFIER INITIAL		
Containment							
LOOP 4 HOT LEG TO RHR SUCTION	706-AZ345 Inside Polar Crane Wall	CLOSED	2-FCV-74-1	-	CV		
LOOP 4 HOT LEG TO RHR SUCTION	716-AZ301 #4 Accum Rm	CLOSED	2-FCV-74-2		CV		
2-FCV-74-2 BYPASS RHR SUCTION	716-AZ304 #4 Accum Rm	CLOSED	2-FCV-74-8		CV.		
2-FCV-74-1 BYPASS RHR SUCTION	706-AZ345 Inside Polar Crane Wall	CLOSED	2-FCV-74-9		CV		

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VALVE LOGIC ELECTRICAL CHECKLIST

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Date ____

COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-BKR-235-0001/44-D	6.3	SSPS B CH I INPUT RELAYS PNL 2-R-49	120V AC VIT BD 2-I BKR 44	ON	
2-BKR-235-0003/30-F	6.3, 6.4	SEPARATION AUX RELAY PANELS 2-R-73/2-R-74	120V AC VIT BD 2-III BKR 30	ON	
2-BKR-235-0003/40-F	6.5	AUX RELAY RACK SSPS AUX RELAYS	120V AC VIT BD 2-III BKR 40	ON	
2-BKR-235-0004/39-G	6.4, 6.6	SEPARATION AUX RELAY PANELS 2-R-77-/2-R-78	120V AC VIT BD 2-IV BKR 39	ON	
2-BKR-235-0001/32-D	6.11	SEPARATION AUX RELAY PANELS 2-R-73/1-R-74	120V AC VITAL INST PWR BD 2-I BKR 32	OŅ	
2-BKR-235-0002/32-E	6.12	SEPARATION AUX RELAY PANELS 2-R-77/1-R-78	120V AC VITAL INST PWR BD 2-II BKR 32	ON	
2-FU-275-R073/N11	6.3, 6.4	RHR ISOL VLV SEP RELAY	2-R-73 in the Aux Instrument Room	INSTALLED	
2-FU-275-R073/N12	6.3, 6.4	RHR ISOL VLV SEP RELAY	2-R-73 in the Aux Instrument Room	INSTALLED	

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VALVE LOGIC ELECTRICAL CHECKLIST

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-FU-275-R074/K19-A	6.3	RHR SYS MID LOOP ANN RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
2-FU-275-R074/K20-A	6.3	RHR SYS MID LOOP ANN RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
2-FU-275-R074/K21-A	6.5	RHR SYS MID LOOP ANN RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
2-FU-275-R074/K22-A	6.5	RHR SYS MID LOOP ANN RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
2-FU-275-R074/K23-A	6.5	RHR SYS MID LOOP ANN RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
2-FU-275-R074/K24-A	6.5	RHR SYS MID LOOP ANN RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
2-FU-275-R074/L1	6.3	RHR SYS ISOL VLV SEP RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
2-FU-275-R074/L2	6.3	RHR SYS ISOL VLV SEP RELAY	2-R-74 in the Aux Instrument Room	INSTALLED	
WBN	RESIDUAL HEAT REMOVAL SYSTEM	2-PTI-074-01			
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VALVE LOGIC ELECTRICAL CHECKLIST

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-FU-275-R077/L1	6.4	RHR ISOL VLV FCV-74-2 SEP RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	
2-FU-275-R077/L19-B	6.4	RHR SYS MID LOOP ANN RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	
2-FU-275-R077/L2	6.4	RHR ISOL VLV FCV-74-2 SEP RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	
2-FU-275-R077/L20-B	6.4	RHR SYS MID LOOP ANN RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	
2-FU-275-R077/L21-B	6.6	RHR SYS MID LOOP ANN RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	
2-FU-275-R077/L22-B	6.6	RHR SYS MID LOOP ANN RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	
2-FU-275-R077/L23-B	6.6	RHR SYS MID LOOP ANN RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	
2-FU-275-R077/L24-B	6.6	RHR SYS MID LOOP ANN RELAY	2-R-77 in the Aux Instrument Room	INSTALLED	

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VALVE LOGIC ELECTRICAL CHECKLIST

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-FU-214-A017/31A	6.1	RHR PUMP 2A-A INLET FCV	480V C&A VENT BD 2A1-A	INSTALLED	
2-FU-214-A017/31N	6.1	RHR PUMP 2A-A INLET FCV	480V C&A VENT BD 2A1-A	INSTALLED	
2-BKR-74-3-A	6.1	RHR PMP 2A-A INLET (2-FCV-74-3); BKR 7D	480V C&A VENT BD 2A1-A, COMPT 7D	CLOSED	
2-FU-214-B017/31A	6.2	RHR PUMP 2B-B INLET FLOW CONTROL VALVE	480V C&A VENT BD 2B1-B	INSTALLED	
2-FU-214-B017/31N	6.2	RHR PUMP 2B-B INLET FLOW CONTROL VALVE	480V C&A VENT BD 2B1-B	INSTALLED	
2-BKR-74-21	6.2	RHR PUMP WB SUCTION (2-FCV-74-21)	480V C&A VENT BD 2B1-B, COMPT 7D	CLOSED	
2-FU-213-A026/31	6.5	RHR SYS ISOLATION BYPASS VLV	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A026/32	6.5	RHR SYS ISOLATION BYPASS VLV	480V REACTOR MOV BD 2A1-A	INSTALLED	

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2-FU-213-A110/1A	6.3, 6.4	RWST TO RHR PUMP FCV	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A110/1N	6.3, 6.4	RWST TO RHR PUMP FCV	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A110/31A	6.3	RHR SYS ISLN	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A110/31N	6.3	RHR SYS ISLN	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A110/32	6.3	RHR SYS ISLN	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A111/11A	6.1	RHR HEX A TO CVCS CHARGING PUMP	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A111/11N	6.1	RHR HEX A TO CVCS CHARGING PUMP	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A112/11A	6.1, 6.3	CNTMT SUMP TO RHR PUMP A-A	480V REACTOR MOV BD 2A1-A	INSTALLED	

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-FU-213-A112/11N	6.1, 6.3	CNTMT SUMP TO RHR PUMP A-A	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A114/31A	6.7	RHR PUMP 2A-A MINIMUM FLOW VALVE	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A114/31N	6.7	RHR PUMP 2A-A MINIMUM FLOW VALVE	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A114/41A	6.9	RHR HEX BY-PASS VALVE	480V REACTOR MOV BD 2A1-A	INSTALLED	
2-FU-213-A114/41N	6.9	RHR HEX BY-PASS VALVE	480V REACTOR MOV BD 2A1-A	INSTALLED	-
2-FU-213-B015/21	6.6	RHR SYSTEM ISOLATION BYPASS VALVE	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B015/22	6.6	RHR SYSTEM ISOLATION BYPASS VALVE	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B110/31A	6.4	RHR SYS ISLN	480V REACTOR MOV BD 2B1-B	INSTALLED	

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-FU-213-B110/31N	6.4	RHR SYS ISLN	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B110/32	6.4	RHR SYS ISLN	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B111/11A	6.2	RHR HEX B SIS PUMP	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B111/11N	6.2	RHR HEX B SIS PUMP	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B112/31A	6.2, 6.4	CNTMT SUMP TO RHR PUMP B-B	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B112/31N	6.2, 6.4	CNTMT SUMP TO RHR PUMP B-B	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B115/11A	6.8	RHR PUMP 2B-B MINIMUM FLOW VALVE	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B115/11N	6.8	RHR PUMP 2B-B MINIMUM FLOW VALVE	480V REACTOR MOV BD 2B1-B	INSTALLED	

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-FU-213-B115/31A	6.10	RHR HEX 2B BYPASS VALVE	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-FU-213-B115/31N	6.10	RHR HEX 2B BYPASS VALVE	480V REACTOR MOV BD 2B1-B	INSTALLED	
2-BKR-63-1-B/A	6.3, 6.4	RWST TO RHR SUCT (2-FCV-63-1)	480V RX MOV BD 2A1-A COMPT 10A	CLOSED	
2-BKR-74-1-A	6.3	480V REAC MOV BD 2A1-A BKR 10D (TO BKR 5B RHR SYSTEM ISOLATION, 2-FCV-74-1-A)	480V RX MOV BD 2A1-A COMPT 10D	CLOSED	
2-BKR-63-8-A	6.1	RHRP 2A TO CHG PMP/SIP 2A SUCT (2-FCV-63-8)	480V RX MOV BD 2A1-A COMPT 11B	CLOSED	
2-BKR-63-72-A	6.1, 6.3	CNTMT SMP TO RHRP 2A ISOL (2-FCV-63-72)	480V RX MOV BD 2A1-A COMPT 12B	CLOSED	
2-BKR-74-12	6.7	RHR PMP 2A-A MIN FLOW VLV; 2-FCV-74-12-A	480V RX MOV BD 2A1-A COMPT 14D	CLOSED	
2-BKR-74-33	6.9	480V REAC MOV BD 2A1-A BKR 14E RHR HX 2A BPSS (2-FCV-74-33-A)	480V RX MOV BD 2A1-A COMPT 14E	CLOSED	

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
2-BKR-63-1-A/A	6.3, 6.4	RWST TO RHR SUCT (2-FCV-63-1)	480V RX MOV BD 2A1-A COMPT 2E1	CLOSED	
2-BKR-74-1-A	6.3	480V REAC MOV BD 2A1-A BKR 5B RHR SYSTEM ISOLATION (2-FCV-74-1-A)	480V RX MOV BD 2A1-A COMPT 5B	CLOSED	
2-BKR-74-8-A	6.5	2-FCV-74-2 BYPASS RHR SUCTION (2-FCV-74-8-A)	480V RX MOV BD 2A2-A COMPT 5C	CLOSED	
2-BKR-74-2-B	6.4	LOOP 4 HOT LEG TO RHR SUCTION (2-FCV-74-2)	480V RX MOV BD 2B1-B COMPT 10D	CLOSED	
2-BKR-63-11-A	6.2	RHR HX 2B OUTLET TO SIP 2B SUCT (2-FCV-63-11)	480V RX MOV BD 2B1-B COMPT 11B	CLOSED	
2-BKR-63-73-B	6.2, 6.4	CNTMT SMP TO RHRP 2B ISOL (2-FCV-63-73)	480V RX MOV BD 2B1-B COMPT 12D	CLOSED	
2-BKR-74-9-B	6.6	2-FCV-74-1 BYPASS RHR SUCTION (2-FCV-74-9)	480V RX MOV BD 2B1-B COMPT 5C	CLOSED	
2-BKR-74-24	6.8	RHR PMP 2B-B MIN FLOW (2-FCV-74-24)	480V RX MOV BD 2B1-B, COMPT 15B	CLOSED	

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2-BKR-74-35	6.10	RHR HX 2B OUTLET XTIE (2-FCV-74-35)	480V RX MOV BD 2B1-B, COMPT 15D	CLOSED	
2-BKR-74-2	6.4	LOOP 4 HOT LEG TO RHR SUCTION (2-FCV-74-2)	480V RX MOV BD 2B1-B, COMPT 5B	CLOSED	

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COMPONENT	SECTION	DESCRIPTION	LOCATION	POSITION	INITIALS/DATE
			120V AC VIT BD 2-II		
2-BKR-235-0002/06-D	6.15	AUX RELAY RACK 2-R-76 BUS B	BKR 6	ON	
· · · · · · · · · · · · · · · · · · ·	1		120V AC VIT BD 2-II		
2-BKR-235-0002/09-D	6.15	AUX RELAY RACK B BUS TO PNL 2-R-75	BKR 9	ON	
· · · · ·			120V AC VIT BD 2-I		
2-BKR-235-0001/11-D	6.14	AUX RELAY RACK A BUS TO PNL 2-R-75	BKR 11	ON	
			120V AC VIT BD 2-I		
2-BKR-235-0001/07-D	6.14	AUX RELAY RACK 2-R-76 BUS A	BKR 7	ON	
		PNL M-1 THUR M-6 MOTOR OVERLOAD	2-R-75 in the Aux		
2-FU-275-R075/I23	6.15	ANNUNCIATION SEPARATION RELAY	Instrument Room	INSTALLED	
		PNL M-1 THUR M-6 MOTOR OVERLOAD	2-R-75 in the Aux		
2-FU-275-R075/124	6.15	ANNUNCIATION SEPARATION RELAY	Instrument Room	INSTALLED	
		PNL M-1 THUR M-6 MOTOR OVERLOAD	2-R-75 in the Aux		
2-FU-275-R075/I5	6.14	ANNUNCIATION SEPARATION RELAY	Instrument Room	INSTALLED	
		PNL M-1 THUR M-6 MOTOR OVERLOAD	2-R-75 in the Aux		
2-FU-275-R075/16	6.14	ANNUNCIATION SEPARATION RELAY	Instrument Room	INSTALLED	
		PANELS 2-M-1 THRU 2-M-6 MOTOR			
		TRIPOUT ANNUNCIATION SEPARATION	2-R-76 in the Aux		
2-FU-275-R076/I11	6.14	RELAY	Instrument Room	INSTALLED	
		PANELS 2-M-1 THRU 2-M-6 MOTOR			
		TRIPOUT ANNUNCIATION SEPARATION	2-R-76 in the Aux		
2-FU-275-R076/I12	6.14	RELAY	Instrument Room	INSTALLED	
		PANELS 2-M-1 THRU 2-M-6 MOTOR			
		TRIPOUT ANNUNCIATION SEPARATION	2-R-76 in the Aux		
2-FU-275-R076/I15	6.15	RELAY	Instrument Room	INSTALLED	

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		PANELS 2-M-1 THRU 2-M-6 MOTOR			
		TRIPOUT ANNUNCIATION SEPARATION	2-R-76 in the Aux		
2-FU-275-R076/I16	6.15	RELAY	Instrument Room	INSTALLED	
2-FU-214-A019/1-A	6.14	RESIDUAL HEAT REMOVAL PUMP 2A-A	480V C&A VENT BD		
		COOLER FAN 2-MTR-30-175-A	2A1-A	INSTALLED	
2-FU-214-B019/1-A	6.15	RESIDUAL HEAT REMOVAL PUMP 2B-B	480V C&A VENT BD		
		ROOM COOLER FAN 2-MTR-30-176-B	2B1-B	INSTALLED	
			480V CONT & AUX		
		RHR PUMP 2A-A RM COOLER	BLDG VENT BD		
2-BKR-30-175-A	6.14	(2-PMCL-30-175)	2A1-A breaker 9A	OPEN	
			480V CONT & AUX		
		RHR PUMP 2B-B RM COOLER	BLDG VENT BD		
2-BKR-30-176-B	6.15	(2-PMCL-30-176)	2B1-B breaker 9A	OPEN	
			6.9KV SD BD 2A-A	OPEN AND	
2-BKR-74-10	6.14	6.9KV SD BD 2A-A BKR 14 RHR PMP 2A-A	Compt. 14 breaker	RACKED DOWN	
			6.9KV SD BD 2A-A		
2-FU-211-A014/1A	6.14	RHR PUMP 2A-A AUXILIARY TRIP	Compt. 14 breaker	INSTALLED	
			6.9KV SD BD 2A-A		
2-FU-211-A014/1N	6.14	RHR PUMP 2A-A NORMAL TRIP	Compt. 14 breaker	INSTALLED	
		-	6.9KV SD BD 2A-A		
2-FU-211-A014/2A	6.14	RHR PUMP 2A-A AUXILIARY CLOSE	Compt. 14 breaker	INSTALLED	
			6.9KV SD BD 2A-A	· · ·	
2-FU-211-A014/2N	6.14	RHR PUMP 2A-A NORMAL CLOSE	Compt. 14 breaker	INSTALLED	
		RHR PUMP 2A-A AUXILIARY ELEVATING	6.9KV SD BD 2A-A		
2-FU-211-A014/3A	6.14	CIRCUIT	Compt. 14 breaker	INSTALLED	

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		RHR PUMP 2A-A NORMAL ELEVATING	6.9KV SD BD 2A-A		
2-FU-211-A014/3N	6.14	CIRCUIT	Compt. 14 breaker	INSTALLED	
			6.9KV SD BD 2B-B	OPEN AND	
2-BKR-74-20	6.15	6.9KV SD BD 2B-B BKR 14 RHR PMP 2B-B	Compt. 14	RACKED DOWN	
			6.9KV SD BD 2B-B		
2-FU-211-B014/1A	6.15	RHR PUMP 2B-B AUXILIARY TRIP	Compt. 14	INSTALLED	
			6.9KV SD BD 2B-B		
2-FU-211-B014/1N	6.15	RHR PUMP 2B-B NORMAL TRIP	Compt. 14	INSTALLED	
			6.9KV SD BD 2B-B		
2-FU-211-B014/2A	6.15	RHR PUMP 2B-B AUXILIARY CLOSE	Compt. 14	INSTALLED	
			6.9KV SD BD 2B-B		
2-FU-211-B014/2N	6.15	RHR PUMP 2B-B NORMAL CLOSE	Compt. 14	INSTALLED	
		RHR PUMP 2B-B AUXILIARY ELEVATING	6.9KV SD BD 2B-B		
2-FU-211-B014/3A	6.15	CIRCUIT	Compt. 14	INSTALLED	
·		RHR PUMP 2B-B NORMAL ELEVATING	6.9KV SD BD 2B-B		
2-FU-211-B014/3N	6.15	CIRCUIT	Compt. 14	INSTALLED	

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· · · · · · · · · · · · · · · · · · ·	Auxiliary Bldg el	. 676	•		
RHR PUMP 2A-A SUCTION DRAIN	A10V/676 Pmp Rm 2A	CLOSED	2-DRV-74-508	······································	CV
RHR PUMP 2A-A DISCHARGE DRAIN	A10V/676 Pmp Rm 2A	CLOSED	2-DRV-74-516		CV
RHR PUMP 2A-A SUCTION	A10V/676 Pmp Rm 2A	OPEN	2-FCV-74-3		CV
RHR PUMP 2A-A DISCHARGE FLUSH	A10V/676 Pmp Rm 2A	CLOSED	2-FLV-74-512		CV
RHR PUMP 2A-A DISCHARGE ISOLATION	A10V/676 Pmp Rm 2A	OPEN	2-ISV-74-520		CV
2-PI-74-4 ROOT	A10V/676 Pmp Rm 2A	OPEN	2-RTV-74-100A		CV
2-PI-74-6 ROOT	A10V/676 Pmp Rm 2A	OPEN	2-RTV-74-101A		CV
2-PT-74-13 ROOT	A10V/676 Pmp Rm 2A	OPEN	2-RTV-74-104A		CV
RHR PMP 2A-A SEAL CAVITY VENT	A10V/676 Pmp Rm 2A	CLOSED	2-VTV-74-10		CV
	Auxiliary Bldg el	. 676			

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RHR PUMP 2B-B SUCTION DRAIN	A10U/676 Pmp Rm 2B	CLOSED	2-DRV-74-509		cv
RHR PUMP 2B-B DISCHARGE DRAIN	A10U/676 Pmp Rm 2B	CLOSED	2-DRV-74-517		CV
RHR PUMP 2B-B SUCTION	A10U/676 Pmp Rm 2B	OPEN	2-FCV-74-21		. CV
RHR PUMP 2B-B DISCHARGE FLUSH	A10U/676 Pmp Rm 2B	CLOSED	2-FLV-74-513		CV
RHR PUMP 2B-B DISCHARGE ISOLATION	A10U/676 Pmp Rm 2B	OPEN	2-ISV-74-521		CV
2-PI-74-22 ROOT	A10U/676 Pmp Rm 2B	OPEN	2-RTV-74-107A		cv
2-PI-74-18 ROOT	A10U/676 Pmp Rm 2B	OPEN	2-RTV-74-108A	ц	CV
2-PT-74-26 ROOT	A10U/676 Pmp Rm 2B	OPEN	2-RTV-74-111A		CV
RHR PMP 2B-B SEAL CAVITY VENT	A10U/676 Pmp Rm 2B	CLOSED	2-VTV-74-20		CV
	Auxiliary Bldg el	. 676	·······		
RHR PUMP 2A-A MINIMUM FLOW VALVE	A11V/676 Pipechase	CLOSED	2-FCV-74-12		CV

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RHR PUMP 2B-B MINIMUM FLOW VALVE	A11U/676 Pipechase	CLOSED	2-FCV-74-24		CV
RWST TO RHR SUCTION TEST VENT	A11U/676 Pipe Chase	CLOSED & FLANGED	2-TV-63-501		CV
RWST TO RHR SUCTION TEST CONN	A11U/676 Pipe Chase	CLOSED & FLANGED	2-TV-63-503		CV
	Auxiliary Bldg el. (692			
RWST TO RHR SUCTION	A11U/692 Pipe Chase	CLOSED	2-FCV-63-1		CV
CONTAINMENT SUMP TO RHR PUMP 2A-A ISOL	A12V/692 Pipe Chase (RHR Sump Vlv Rm)	CLOSED	2-FCV-63-72		CV
CONTAINMENT SUMP TO RHR PUMP 2B-B	A12V/692 Pipe Chase (RHR Sump Vlv Rm)	CLOSED	2-FCV-63-73		CV
2-FCV-63-72 BONNET PRESS EQUALIZING VALVE	A12V/692 Pipe Chase (RHR Sump Vlv Rm)	OPEN	2-ISV-63-72		CV

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2-FCV-63-73 BONNET PRESS EQUALIZING VALVE	A12V/692 Pipe Chase (RHR Sump Vlv Rm)	OPEN	2-ISV-63-73	-	CV
2-FIS-74-12 ROOT	A11W/692 Pipechase	OPEN	2-RTV-74-102A		CV
2-FIS-74-12 ROOT	A11W/692 Pipechase	OPEN	2-RTV-74-103A		CV
2-FIS-74-24 ROOT	A11V/692 Pipechase	OPEN	2-RTV-74-109A		CV
2-FIS-74-24 ROOT	A11V/692 Pipechase	OPEN	2-RTV-74-110A		CV
RWST TO RHR SUCTION VENT	A11U/692 Pipe Chase	CLOSED & FLANGED	2-VTV-63-500		cv
	Auxiliary Bldg el. 7	/13			
RHR HX 2B-B OUTLET TO SIP 2B-B SUCT ISOL	A11V/713 BIT Rm	CLOSED	2-FCV-63-11		CV
RHR TO HOT LEG 1 & 3 INJECTION ISOLATION	A11W/713 BIT Rm	CLOSED	2-FCV-63-172		cv

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RHR PMP 2A-A TO CHG PMP & SIP 2A-A SUCT ISOL	A11W/713 BIT Rm	CLOSED	2-FCV-63-8		cv
RHR TO COLD LEG 2 & 3 INJECTION ISOLATION	A11W/713 BIT Rm	CLOSED	2-FCV-63-93		cv
RHR TO COLD LEG 1 & 4 INJECTION ISOLATION	A11W/713 BIT Rm	CLOSED	2-FCV-63-94		CV
RHR PUMP 2A-A DISCHARGE SAMPLE	A11W/713 BIT Rm	OPEN	2-SMV-74-522		CV
RHR PUMP 2B-B DISCHARGE SAMPLE	A11V/713 BIT Rm	OPEN	2-SMV-74-523		CV
RHR PUMP 2A-A MINIFLOW SAMPLE	A11W/713 BIT Rm	OPEN	2-SMV-74-532		CV
RHR PUMP 2B-B MINIFLOW SAMPLE	A11V/713 BIT Rm	OPEN	2-SMV-74-533		CV
Auxiliary Bldg el. 713					
RHR HEAT EXCHANGER 2B DRAIN	A9V/713 Hx Rm 2B	CLOSED	2-DRV-74-519		CV
RHR HEAT EXCHANGER 2B INLET DRAIN	A9V/713 Hx Rm 2B	CLOSED	2-DRV-74-526		CV

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RHR HEAT EXCHANGER 2B OUTLET FLOW CONTROL	A9V/713 Hx Rm 2B	OPEN	2-FCV-74-28		cv
RHR HEAT EXCHANGER 2B OUTLET CROSSTIE	A9V/728 Hx Rm 2B	CLOSED	2-FCV-74-35		cv
RHR RWST RETURN	A9V/728 Hx Rm 2B	CLOSED	2-HCV-74-34		cv
RHR HEAT EXCHANGER 2B MANUAL BYPASS	A9V/713 Hx Rm 2B	CLOSED	2-HCV-74-37		cv
CONTROL AIR ISOLATION VALVE TO 2-FCV-74-28	A9V/713 Hx Rm 2B	OPEN	2-ISV-32-3089		cv
RHR HEAT EXCHANGER 2B DRAIN AUX CONN	A9V/713 Hx Rm 2B	CLOSED	2-ISV-74-518		cv
RHR HEAT EXCHANGER 2B INLET ISOLATION	A9U/713 Hx Rm 2B	OPEN	2-ISV-74-525		CV
RHR HEAT EXCHANGER 2B INLET DRAIN AUX CONN	A9V/713 Hx Rm 2B	CLOSED	2-ISV-74-527		cv

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MINIFLOW VALVE CHECKLIST

Data Package: Page ____ of ____

NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	VERIFIER INITIAL
RHR HX 2B OUTLET TO CVCS	A9V/713 Hx Rm 2B	CLOSED	2-SPV-74-531		CV CV
RHR HEAT EXCHANGER 2B DISCHARGE VENT	A9V/728 Hx Rm 2B	CLOSED	2-VTV-74-536		cv
	Auxiliary Bldg e	I. 713			
RHR HEAT EXCHANGER 2A INLET DRAIN	A9W/713 Hx Rm 2A	CLOSED	2-DRV-74-502		CV
RHR HEAT EXCHANGER 2A DRAIN	A9W/713 Hx Rm 2A	CLOSED	2-DRV-74-507		CV
RHR HEAT EXCHANGER DISCHARGE HDR DRAIN	A9W/728 Hx Rm 2A	CLOSED	2-DRV-74-537		cv
RHR FLOOD MODE DRAIN	A9W/728 Hx Rm 2A	CLOSED	2-DRV-74-540		CV
RHR HEAT EXCHANGER 2A OUTLET FLOW CONTROL	A9W/713 Hx Rm 2A	OPEN	2-FCV-74-16		cv
RHR HEAT EXCHANGER A/B BYPASS FLOW CONTROL	A9W/728 Hx Rm 2A	CLOSED	2-FCV-74-32		cv

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MINIFLOW VALVE CHECKLIST

Data Package: Page ____ of ____

NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	VERIFIER INITIAL
RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	A9W/728 Hx Rm 2A	CLOSED	2-FCV-74-33	· · · · · · · ·	cv
RHR HEAT EXCHANGER 2A MANUAL BYPASS	A9W/713 Hx Rm 2A	CLOSED	2-HCV-74-36		CV
CONTROL AIR ISOLATION VALVE TO 2-FCV-74-32	A9W/713 Hx Rm 2A	OPEN	2-ISV-32-3135		cv
CONTROL AIR ISOLATION VALVE TO 2-FCV-74-16	A9W/713 Hx Rm 2A	OPEN	2-ISV-32-3136		CV
RHR HEAT EXCHANGER 2A INLET AUXILIARY DRAIN	A9W/713 Hx Rm 2A	CLOSED	2-ISV-74-501		CV
RHR HEAT EXCHANGER 2A AUXILIARY DRAIN	A9W/713 Hx Rm 2A	CLOSED	2-ISV-74-506		CV
RHR HEAT EXCHANGER 2A INLET ISOLATION	A9W/713 Hx Rm 2A	OPEN	2-ISV-74-524		cv
RHR HX 2A OUTLET TO CVCS	A9W/713 Hx Rm 2A	CLOSED	2-SPV-74-530		CV

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MINIFLOW VALVE CHECKLIST

Data Package: Page ____ of ____

Date ____

NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	VERIFIER INITIAL
RHR HIGH POINT VENT	A10W/733 Hx Rm 2A	CLOSED	2-VTV-74-41		CV
RHR HIGH POINT VENT	A10W/733 Hx Rm 2A	CLOSED	2-VTV-74-42		CV
RHR HEAT EXCHANGER 2A DISCHARGE VENT	A9W/728 Hx Rm 2A	CLOSED	2-VTV-74-538		CV
RHR FLOOD MODE VENT	A9W/728 Hx Rm 2A	CLOSED	2-VTV-74-539		CV
	Containment				
RHR SUCTION HDR DRAIN	702-AZ345 Inside Polar Crane Wall	CLOSED	2-DRV-74-500		CV
RHR SUCTION HDR VLV LOW POINT DRAIN	702-AZ315 Inside Polar Crane Wall	CLOSED	2-DRV-74-503		CV
RHR SUCTION HDR DRAIN	702-AZ345 Inside Polar Crane Wall	CLOSED	2-DRV-74-541		CV
RHR SUCTION HDR VLV LOW POINT DRAIN	702-AZ315 Inside Polar Crane Wall	CLOSED	2-DRV-74-542		CV
LOOP 4 HOT LEG TO RHR SUCTION	706-AZ345 Inside Polar Crane Wall	CLOSED	2-FCV-74-1		CV
LOOP 4 HOT LEG TO RHR SUCTION	716-AZ301 #4 Accum Rm	CLOSED	2-FCV-74-2		CV

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MINIFLOW VALVE CHECKLIST

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NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	VERIFIER INITIAL
2-FCV-74-2 BYPASS RHR SUCTION	716-AZ304 #4 Accum Rm	CLOSED	2-FCV-74-8		CV
2-FCV-74-1 BYPASS RHR SUCTION	706-AZ345 Inside Polar Crane Wall	CLOSED	2-FCV-74-9		CV
RHR PUMP SUCT RELIEF	719-AZ300 #4 Accum Rm	INSTALLED	2-RFV-74-505		
RHR SUCTION HEADER TEST VENT	716-AZ301 #4 Accum Rm	CLOSED	2-TV-74-504		CV
RHR SUCTION HEADER TEST VENT	716-AZ301 #4 Accum Rm	CLOSED	2-TV-74-543		CV

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PREOPERATIONAL/ACCEPTANCE TEST INSTRUCTION TEST PERSONNEL SIGNATURE LOG

Data Package: Page ____ of ____

Date _____

NOTE

Additional copies of this table may be made as necessary.

NAME (PRINT)	TITLE/ ORGANIZATION	SIGNATURE	INITIAL/DATE
		· ·	
	×		

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LOG OF INSTALLED INSULATING DEVICES

Data Package: Page ____ of ____

Date _____

NOTE

Additional copies of this table may be made as necessary.

LOCATION	TERMINAL	INSTALLATION WORK DOCUMENT	REMOVAL WORK DOCUMENT	COMMENTS
	· ·			
		· · ·		

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CONFIGURATION CONTROL LOG FOR WIRE LIFTS

Data Package: Page _____ of ___

Date ____

CONFIGURATION CONTROL LOG FOR WIRE LIFTS

Sheet

of

NOTES 1. Any time wires are lifted and are left unattended, there must be a nonconductive tag attached to them identifying the work instruction that required the wire to be lifted.

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

AFFECTED DEVICE	WIRING DATA		OTHER DATA AS APPROPRIATE	AS-FOUND VERIFICATION		AS-LEFT VERIFICATION		BEND RADIUS	INSULATION /JACKET
COMPONENT ID Terminal Block, Relay, etc	Wire Number	Terminal Number	Drawing, Location, Panel, Box, Color, etc.	1st Party Date	CV Date	1st Party Date	CV Date	Accept Yes/No	Accept Yes/No
					-				
			· · · ·						
								· · · · · · ·	

· · · .	WATTS	BAR NUCLEAR PLANT	
	L	INIT 2 STARTUP	
	÷ .		
	· · ·		
	TITLE: Liqui	d Waste Processing Syst	em
· .	Instruc	ction No: 2-PTI-077-01	
	, F	Revision No: 0000	
PREPARED BY:	Kuit McCormack	had plead	DATE 10/28/10
	PRINT	NAME/ SIGNATURE	
REVIEWED BY:	Emmett Camp	Emait Cong	DATE 19/28/13
	PRINT	NAME/ SIGNATURE	· ·
		·	· · · ·
INSTRUCTION A	PPROVAL	:	
. ·		· · · · ·	
JTG MEETING N	2: 2-10-014		
JTG CHAIRMAN	WORLD -		
APPROVED BY:	VIII-	<u>را الا DATE (الما</u>	<u> </u>
	PREOPERATIONAL START		
		· · ·	
		· .	
TEST RESULTS	APPROVAL		
· .			
JTG MEETING N	O:		
JTG CHAIRMAN		DATE	
APPROVED BY:		DATE	
	PREOPERATIONAL START	UP MANAGER	
			· · · ·

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

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Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0000	16/11	ALL	Initial issue based on Rev. 1 of 1-PTI-077-01

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6.7 6.8	2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL Functional Test 2-LCV-77-415, RCDT LEVEL CONTROL Functional Test	

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1.0 INTRODUCTION

1.1 Test Objective

This Preoperational Test Instruction (PTI) will demonstrate the capability of the Liquid Waste Processing System to process liquid waste and transfer these wastes to their respective disposal points. It will also demonstrate the capability of associated containment isolation valves to properly respond to a Phase A containment isolation signal.

1.2 Scope

A. Containment Isolation Valves:

- 1. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL.
- 2. 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL.
- 3. 2-FCV-77-9, RCDT PUMP DISCH VLV FLOW CONTROL.
- 4. 2-FCV-77-10, RCDT PUMP DISCH VALVE FLOW CONTROL.
- 5. 2-FCV-77-17, RCDT TO VENT GA FLOW CONTROL.
- 6. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL.
- 7. 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL.
- B. Reactor Coolant Drain Tank Components:
 - 1. 2-LCV-77-415, RCDT DRAIN VALVE LEVEL CONTROL.
 - 2. 2-FCV-77-3, RCDT DRAIN VLV FLOW CONTROL.
 - 3. 2-PMP-77-4, REACTOR COOLANT DRAIN PMP 2A.
 - 4. 2-PMP-77-6, REACTOR COOLANT DRAIN PMP 2B.

Date _____

1.2 Scope (continued)

- C. Flow Paths
 - 1. Refueling Canal to the Holdup Tank via Reactor Coolant Drain Tank.
 - 2. Reactor Coolant Drain Tank to Tritiated Drain Collector Tank.
 - 3. Reactor Coolant Drain Tank to Flood Mode Boration Makeup System.
 - 4. Reactor Coolant Drain Tank to Refueling Water Storage Tank
 - 5. Excess Letdown Heat Exchanger to Reactor Coolant Drain Tank.
 - 6. Pressurizer Relief Tank to Reactor Coolant Drain Tank Pumps.
- D. Main Control Room Alarms.
- E. Waste Disposal Panel Alarms.

2.0 **REFERENCES**

2.1 **Performance References**

A. SMP-9.0, Conduct of Test

2.2 Developmental References

- A. Final Safety Analysis Report Amendment 101
 - a. Section 6.2.1 CONTAINMENT FUNCTIONAL DESIGN
 - b. Section 6.2.4 CONTAINMENT ISOLATION SYSTEMS (Including Table 6.2.4-1)
 - c. Section 11.2 LIQUID WASTE SYSTEMS
 - d. Table 14.2-1 PREOPERATIONAL TESTS SUMMARIES
 - (1) (SHEET 28 of 89) LIQUID WASTE PROCESSING SYSTEM TEST SUMMARY
 - (2) (SHEET 83 OF 89) CONTAINMENT ISOLATION SYSTEM TEST SUMMARY

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2.2 Developmental References (continued)

- B. Drawings
 - 1. Flow Diagrams
 - a. 2-47W809-1, Rev 3, Flow Diagram Chemical & Volume Control System
 - b. 2-47W809-3, Anticipated, Flow Diagram Chemical & Volume Control System DRA 53999-20
 - c. 2-47W809-7, Rev 2, Flow Diagram, Flood Mode Boration
 - d. 2-47W811-1, Rev 4, Flow Diagram, Safety Injection System
 - e. 2-47W812-1, Rev 3, Flow Diagram, Containment Spray System
 - f. 2-47W813-1, Rev 1, Flow Diagram Reactor Coolant System
 - g. 2-47W830-1, Rev 1, Flow Diagram Waste Disposal System
 - h. 2-47W830-6, Rev 2, Flow Diagram Waste Disposal System
 - i. 2-47W848-4, Rev 0, Flow Diagram Control Air
 - j. 2-47W848-5, Rev 1, Flow Diagram Control Air
 - k. 2-47W848-9, Rev 1, Flow Diagram Control Air
 - I. 2-47W855-1, Rev 0, Flow Diagram Fuel Pool Cooling and Cleaning System
 - 2. Electrical
 - a. 2-45W600-55-41, ANT, Wiring Diagram Annunciator System Key Diagram DRA 52384-26
 - b. 2-45W600-55-42, ANT, Wiring Diagram Annunciator System Key Diagram DRA 52453-03
 - c. 2-45W600-57-14, Rev 0, Wiring Diagram Separation & Misc Aux Relays Schematic Diagrams

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2.2 Developmental References (continued)

- d. 2-45W600-57-16, Rev 0, Wiring Diagram Separation & Misc Aux Relays Schematic Diagrams
- e. 2-45W600-57-18, Rev 1, Wiring Diagram Separation & Misc Aux Relays Schematic Diagrams
- f. 2-45W600-77-1, Rev 0, Wiring Diagram Waste Disposal System Schematic Diagrams DRA 52453-148, 52339-049
- g. 2-45W600-77-2, Rev 0, Wiring Diagram Waste Disposal System Schematic Diagrams
 DRA 52453-149, 52453-151, 52453-152, 52453-153, 52453-154
- h. 2-45W600-77-6, Rev 0, Wiring Diagram Waste Disposal System Schematic Diagrams
- i. 2-45W755-1, Rev 1, Wiring Diagram, 480V Reactor BD 2A-A Single Line Sheet 1
- j. 2-45W755-3, Rev 0, Wiring Diagram, 480V Reactor BD 2B-B Single Line Sheet 1
- k. 2-45W760-77-4, Rev 0, Wiring Diagram Waste Disposal System Schematic Diagrams DRA 53296-060, 53296-061
- I. 45N1635-47, Rev 3, Wiring Diagram, Local Instrument Panels Connection Diagram Sheet 47
- m. 2-45N2676-4, ANT, Wiring Diagrams Solid State Protection SYS Train A Connection Diagram SH-4
- n. 2-45N2677-4, ANT, Wiring Diagrams Solid State Protection SYS Train B Connection Diagram SH-4 DRA 53712-005
- 45N2630-74, Rev 3, Wiring Diagrams Misc. Valves Connection Diagram SH-74

Date

2.2 Developmental References (continued)

- p. 45N2680-3, Rev 9, Wiring Diagrams NSSS Aux Relay Panel 2-R-54 Connection Diagrams
- q. 45B2755-11D, Rev 6, 480V React. Vent BD 2A-A Compartment 11D
- r. 45B2756-11D, Rev 6, 480V React. Vent BD 2B-B Compartment 11D
- 3. Mechanical

None

- 4. Logic/Control
 - a. 2-47W611-77-1, Rev 1, Logic Diagram Waste Disposal System
 - b. 2-47W610-77-4, Rev 2, Control Diagram Waste Disposal System DRA 52339-75
- 5. Vendor Drawings
 - a. 271C858-60, Rev 901, U1&U2 Liquid Panel Ann
 - b. 271C858-61, Rev 5, Waste Disposal System Liquid Panel
 - c. 271C858-62, Rev 1, Waste Disposal System Liquid Panel
 - d. 271C858-63, Rev 2, Waste Disposal System Liquid Panel
 - e. 271C858-65, Rev 901, Waste Disposal System Liquid Panel

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2.2 Developmental References (continued)

- C. Documents
 - 1. 2-TSD-77-1 Rev 0, Liquid Waste Processing System.
 - 2. 2-TSD-88-5 Rev 1, Containment Isolation System
 - 3. N3-77C-4001, Rev 10, Liquid Waste Processing System
 - 4. WBN2-77C-4001, Rev 1, Liquid Waste Processing System
 - 1. SSD-1-PI-77-5, Rev 1, Reactor Coolant Drain Tank 2A Discharge Pressure

To be verified against SSD-2-PI-77-5, Reactor Coolant Drain Tank 2A Discharge Pressure [Later] in Appendix A.

5. SSD-1-PI-77-8, Rev 1, Reactor Coolant Drain Tank 2B Discharge Pressure

To be verified against SSD-2-PI-77-8, Reactor Coolant Drain Tank 2B Discharge Pressure [Later] in Appendix A.
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3.0 PRECAUTIONS AND LIMITATIONS

- A. Test should be coordinated with Unit 1 Operations to mitigate any adverse impact to Unit 1.
- B. Standard precautions shall be forwarded for working around energized electrical equipment in accordance with TVA Safety Manual Procedure 1021.
- C. Steps may be repeated if all components cannot be tested in a step. However, if the test has been exited, prerequisite steps must be re-verified and a Chronological Test Log (CTL) entry made.
- D. Component tags and labels may differ slightly (abbreviations, punctuation, letter case, etc.) from the description given in this test. If this situation occurs, it shall NOT be considered a test deficiency or procedure deviation. It shall be documented in the CTL and reconciled by way of a plant labeling request or drawing discrepancy or single line date typo change in the procedure as appropriate.
- E. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.
- F. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- G. Problems identified during the test shall be annotated on the Chronological Test Log (CTL) from SMP-9.0 including a description of the problem, the procedure step when/where the problem was identified, corrective action steps taken to resolve the problem, and the number of the corrective action document, if one was required.
- H. Observe all Radiation Protection (RP) requirements when working in or near contaminated areas.
- 1. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.
- J. Test personnel will coordinate with Unit 1 Operations when manipulating Unit 1 equipment if required.
- K. System water chemistry is within system specifiable parameters especially for fluids supplied from external sources.

Date _____

3.0 **PRECAUTIONS AND LIMITATIONS (continued)**

- L. During the performance of this procedure visual observation of piping and components is required. This includes steady state and transient operations with visual confirmation that vibration is not excessive.
- M. If the vibration is determined to be excessive the Test Engineer shall initiate a Test Deficiency Notice (TDN).

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4.0 PREREQUISITE ACTIONS

NOTE

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

4.1 **Preliminary Actions**

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

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

- A. Subsection 6.1
- B. Subsection 6.2
- C. Subsection 6.3
- D. Subsection 6.4
- E. Subsection 6.5
- F. Subsection 6.6
- G. Subsection 6.7
- H. Subsection 6.8
- I. Subsection 6.9
- J. Subsection 6.10
- K. Subsection 6.11
- L. Subsection 6.12
- M. Subsection 6.13
- N. Subsection 6.14
- O. Subsection 6.15

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	Data	Pacl	kage: Page of	Date
4.1	Prelii	mina	ry Actions (continued)	
		P	Subsection 6.16	
		Q.	Subsection 6.17	
	[2]	EN hav the	SURE changes to the references listed on <i>A</i> // // // // // // // // // // // // //	Appendix A, dversely affect
	[3]	VE dra ad∖	RIFY current revisions and change paper fo wings has been reviewed and determined N versely affect the test performance, AND	r referenced IOT to
		AT and	TACH documentation of current drawing revelocities that were reviewed to the date of the	rision numbers ata package.
	[4]	VE Ins not has	RIFY the test/performance copy of this Prec truction (PTI) is the current revision including ices and as needed, each test person assist the current revision including any change r	perational Test g any change ting in this test notices.
	[5]	OB of ६	TAIN copies of the applicable forms from th SMP-9.0, AND	e latest revision
		AT	TACH to this PTI for use during the perform	ance of this PTI.
	[6]	EN Eng Alte	SURE outstanding Design Change Notices gineering Design Change Requests (EDCR' erations (TA's) do NOT adversely impact tes	(DCN's), s) or Temporary sting, AND
÷		AT we	TACH documentation of DCN's, EDCR's, an reviewed to the data package.	nd TA's that
	[7]	EN prio	SURE required component testing has been or to start of test.	n completed
		A.	Subsection 6.1	
		Β.	Subsection 6.2	
		C.	Subsection 6.3	
		D.	Subsection 6.4	
		E.	Subsection 6.5	· · · · · · · · · · · · · · · · · · ·

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	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 17 of 218						
	Data	Data Package: Page of D								
4.1	Prelir	nina	ry Actions (continued)							
		F.	Subsection 6.6							
•••		G.	Subsection 6.7	х 						
		H.	Subsection 6.8							
		١.	Subsection 6.8							
		J.	Subsection 6.10							
		K.	Subsection 6.11							
		L.	Subsection 6.12							
		Μ.	Subsection 6.13							
		N.	Subsection 6.14							
		0.	Subsection 6.15							
		Ρ.	Subsection 6.16							
	•	Q.	Subsection 6.17							
	[8]	EN of for	SURE System cleanness as required for the this test has been completed in accordance piping systems.	e performance with SMP-7.0						
		A.	Subsection 6.12							
		B.	Subsection 6.13							
		C.	Subsection 6.14							
		D.	Subsection 6.15							
		E.	Subsection 6.16							

	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 18 of 218	
	Data	Pack	age: Page of	Da	ate
.1	Preli	mina	ry Actions (continued)		
	[9]	EN: inst	SURE Piping supports required for testing alled and adjusted.	are	
		Α.	Subsection 6.12		<u> </u>
		В.	Subsection 6.13		
		С.	Subsection 6.14		
		D.	Subsection 6.15		
		E.	Subsection 6.16		
	[10]	CO per	NDUCT a pretest briefing with Test and O sonnel in accordance with SMP-9.0.	perations	
	[11]	EN test	SURE communications are available for a ting is to be conducted.	reas where	
	[12]	VEI Pla wit	RIFY plant instruments, listed on Appendia ant Instrumentation Log, are placed in servine hin their calibration interval.	c C, Permanent vice and are	
		Α.	Subsection 6.12		
		В.	Subsection 6.13	,	
		C.	Subsection 6.14		
•		D.	Subsection 6.15		
		E.	Subsection 6.16		
	[13]	EN Re Ma are	SURE System 55, Annunciator and Seque cording System applicable TBK switches aster Switches are ON, and window softwa ENABLED for the following Annunciator	ential Events are ON, the are input(s) windows:	
		Α.	2-XA-55-6F/148-C		
	[14]	EN tes Sta	SURE components contained within the b t are under the jurisdictional control of Pre rtup Engineering (PSE) and/or Plant Oper	oundaries of this operational rations.	

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,	WBN Unit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 19 of 218	
	Data	Package: Page of	Dat	e
.1	Prelin	ninary Actions (continued)		
	[15]	ENSURE a review of outstanding Clearances coordinated with U2 Operations for impact to t performance, AND	has been he test	
		RECORD in Appendix B, Temporary Condition	n Log, if required	
	[16]	OBTAIN copies of the applicable forms from to of SMP-9.0 AND	he latest revision	
		ATTACH to this PTI for use during the perform	nance of this PTI.	
	[17]	VERIFY Measuring and Test Equipment (M&T test performance has been (as required) filled into service and recorded on Measuring and (M&TE) Log.	E) required for , vented, placed Test Equipment	
		A. Subsection 6.1		
		B. Subsection 6.2		
		C. Subsection 6.3		
		D. Subsection 6.4		
		E. Subsection 6.5		
		F. Subsection 6.6		
		G. Subsection 6.7		
		H. Subsection 6.12		<u> </u>
		I. Subsection 6.13		
	[18]	VERIFY Measuring and Test Equipment (M&T due dates will support the completion of this te	E) calibration est performance.	
		A. Subsection 6.1		
		B. Subsection 6.2		
		C. Subsection 6.3		
		D. Subsection 6.4		
		E. Subsection 6.5		

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	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 20 of 218	
	Data	Pack	kage: Page of	Dat	e
4.1	Prelii	nina	ry Actions (continued)		
		F.	Subsection 6.6		
		G.	Subsection 6.7		
		H.	Subsection 6.12		
		I.	Subsection 6.13		
	[19]	ОВ	TAIN a Caution order on the following har	ndswitches:	
		A.	2-HS-77-4A, RCDT PUMP 2A Caution Tag #		
		В.	2-HS-77-6A, RCDT PUMP 2B Caution Tag #		
		C.	2-HS-77-4C, RCDT PUMP 2A Caution Tag #		
		D.	2-HS-77-6C, RCDT PUMP 2B Caution Tag #	\sim	
	[20]	PE ens	RFORM a pretest walkdown on equipmen sure no conditions exist that will impact tes	t to be tested to st performance.	

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WBN

Unit 2

Date _____

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

- [1] **ENSURE** the following equipment is available:
 - 17 test switches
- [2] **ENSURE** the following M&TE or equivalent is available, within their calibration due dates, **AND**

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

- 0-60 min. Stopwatch (2) (Subsections 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7)
- Ultrasonic Flow meter (± 2% of range) (Subsections 6.12, 6.13, 6.14, 6.15, 6.16)
- 0-200 psi Pressure Gauge (1) (Subsections 6.12, 6.13)

	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 22 of 218
	Data	Pack	kage: Page of	Date
4.3	Field	i Prep	paration	
	[1]	PE	RFORM the Switch Lineups as follows:	
		Α.	Appendix D (Subsection 6.1)	
		В.	Appendix E (Subsection 6.2)	
		C.	Appendix F (Subsection 6.3)	
		D.	Appendix G (Subsection 6.4)	
		E.	Appendix H (Subsection 6.5)	
		F.	Appendix I (Subsection 6.6)	
		G.	Appendix J (Subsection 6.7)	
		H.	Appendix K (Subsection 6.8)	
		١.	Appendix L (Subsection 6.9)	
		J.	Appendix M (Subsection 6.10)	
		K.	Appendix N (Subsection 6.11)	
		L.	Appendix O (Subsection 6.12)	
		M.	Appendix P (Subsection 6.13)	
		N.	Appendix Q (Subsection 6.14)	<u></u>
		О.	Appendix R (Subsection 6.15)	
		Ρ.	Appendix S (Subsection 6.16)	
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	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 23 of 218				
	Data	Pacl	kage: Page of	Date				
.3	Field	d Preparation (continued)						
	[2]	PE	RFORM the Breaker Lineups as follows:					
		Α.	Appendix U (Subsection 6.12)					
		В.	Appendix V (Subsection 6.13)					
		C.	Appendix W (Subsection 6.14)					
		D.	Appendix X (Subsection 6.15)	·				
		E.	Appendix Y (Subsection 6.16)		- .			
	[3]	PE	RFORM the Valve Lineups as follows:					
		А.	ENSURE 2-ISV-32-3517, CONTROL AIF VALVE TO 2-FCV-77-16 is OPEN (Subs	R ISOLATION ection 6.1)				
		В.	ENSURE 2-ISV-32-3539, CONTROL AIF VALVE TO 2-FCV-77-18 is OPEN (Subs	R ISOLATION ection 6.2)				
		C.	ENSURE 2-ISV-32-3540, CONTROL AIF VALVE TO 2-FCV-77-9 is OPEN (Subse	R ISOLATION ction 6.3)				
		D.	ENSURE 2-ISV-32-3175, CONTROL AIF VALVE TO 2-FCV-77-10 is OPEN (Subs	R ISOLATION ection 6.4)				
		• E.	ENSURE 2-ISV-32-3183, CONTROL AIF VALVE TO 2-FCV-77-17 is OPEN (Subs	R ISOLATION ection 6.5)				
		F.	ENSURE 2-ISV-32-3187, CONTROL AIF VALVE TO 2-FCV-77-19 is OPEN (Subs	R ISOLATION ection 6.6)				
		G.	ENSURE 2-ISV-32-3174, CONTROL AIF VALVE TO 2-FCV-77-20 is OPEN (Subs	R ISOLATION ection 6.7)				
		H.	ENSURE 2-ISV-32-3526, CONTROL AIF VALVE TO 2-LCV-77-415 is OPEN (Sub	R ISOLATION section 6.8)				
		1.	ENSURE 2-ISV-32-3527, CONTROL AIF VALVE TO 2-FCV-77-3 is OPEN (Subse	R ISOLATION ction 6.9)				
		J.	Appendix AA (Subsection 6.12)					
		K.	Appendix BB (Subsection 6.13)					
		L.	Appendix CC (Subsection 6.14)					

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		WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 24 of 218	
		Data F	Pack	age: Page of	Date	•
	4.3	Field	Prep	paration (continued)		
			M.	Appendix DD (Subsection 6.15)		
			N.	Appendix EE (Subsection 6.16)		
·		[4]	INS SUI pun AUX (Su	TALL Spool Piece 2-SPPC-84-111, WAST PPLY TO FLOOD MODE BORATION, in the pp discharge line to Tank 0-TANK-84-110, F KILIARY BORATION MAKEUP TANK, 757/ bsection 6.15) AND	E DISPOSAL e Unit 2 RCDT FLOOD MODE A5W	
			RE	CORD WO#		
		[5]	VE F pla	RIFY The following systems are operational ced in service to the extent necessary to pe	and have been erform this test:	
			Α.	System 32, Control Air System		
			В.	System 62, Chemical and Volume Control	System	
			C.	System 55, Annunciator & Seq. Events Re	ecord System	
			D.	System 63, Safety Injection System		
			E.	System 68, Reactor Coolant System		
			F.	System 72, Containment Spray System		•
			G.	System 81, Primary Makeup Water System	n	
			H.	System 84, Flood Mode Boration System		<u> </u>
			I.	System 99, Solid State Protection System		
			J.	System 216, Fuel and Waste Handling Po	wer	
			K.	System 217, Chemical and Volume Contro	ol Power	
			L.	System 232, Reactor Vent Power		
			Μ.	System 237, 120V AC Instrument Power		
			N.	System 238, 120V AC Preferred Power		

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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 Signature	Date
[2]	OBTAIN the Unit 1 Supervisor's (US/SRO) or Shift Manager's (SM) authorization.	
	U2 US/SRO/SM Signature	Date
[3]	OBTAIN the Unit 2 Supervisor's (US/SRO) or Shift Manager's (SM) authorization.	
	U1 US/SRO/SM Signature	Date

Date _____

5.0 ACCEPTANCE CRITERIA

- [1] Automatic controls and interlocks function properly in response to normal simulated input signals.
- [2] The following valves can be operated from the Waste Disposal Panel:

A. 2-LCV-77-415 (Subsection 6.8)

- B. 2-FCV-77-3 (Subsection 6.9)
- [3] The following valves can be operated from the MCR. Indicating lights indicate the correct valve position in the MCR:
 - A. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL (Subsection 6.1)
 - B. 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL (Subsection 6.2)
 - C. 2-FCV-77-9, RCDT PUMP DISCH VLV FLOW CONTROL (Subsection 6.3)
 - D. 2-FCV-77-10, RCDT PUMP DISCH VALVE FLOW CONTROL (Subsection 6.4)
 - E. 2-FCV-77-17, RCDT TO VENT GA FLOW CONTROL (Subsection 6.5)
 - F. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL (Subsection 6.6)
 - G. 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL (Subsection 6.7)
- [4] The following valves close on a simulated Phase A Containment Isolation signal:
 - A. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL (Step 6.1[18]C)
 - B. 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL (Step 6.2[18]C)

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- C. 2-FCV-77-9, RCDT PUMP DISCH VLV FLOW CONTROL (Step 6.3[18]C)
- D. 2-FCV-77-10, RCDT PUMP DISCH VALVE FLOW CONTROL (Step 6.4[7]C)
- E. 2-FCV-77-17, RCDT TO VENT GA FLOW CONTROL (Step 6.5[7]C)
- F. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL (Step 6.6[8]C)
- G. 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL (Step 6.7[8]C)
- [5] The following valves remain closed upon reset of a Phase A Containment Isolation signal:
 - A. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL (Step 6.1[19]C)
 - B. 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL (Step 6.2[19]C)
 - C. 2-FCV-77-9, RCDT PUMP DISCH VLV FLOW CONTROL (Step 6.3[19]C)
 - D. 2-FCV-77-10, RCDT PUMP DISCH VALVE FLOW CONTROL (Step 6.4[8]C)
 - E. 2-FCV-77-17, RCDT TO VENT GA FLOW CONTROL (Step 6.5[8]C)
 - F. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL (Step 6.6[9]C)
 - G. 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL (Step 6.7[9]C)

Date

- [6] The Containment Isolation Status Panel Train A or B indicates that each of the following valves close upon receipt of a Phase A Containment Isolation Signal and remain closed upon signal reset:
 - A. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL (Steps 6.1[18]A, 6.1[18]B, 6.1[19]A, 6.1[19]B)
 - B. 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL (Steps 6.2[18]A, 6.2[18]B, 6.2[19]A, 6.2[19]B)
 - C. 2-FCV-77-9, RCDT PUMP DISCH VLV FLOW CONTROL (Steps 6.3[18]A, 6.3[18]B, 6.3[19]A, 6.3[19]B)
 - D. 2-FCV-77-10, RCDT PUMP DISCH VALVE FLOW CONTROL (Steps 6.4[7]A, 6.4[7]B, 6.4[8]A, 6.4[8]B)
 - E. 2-FCV-77-17, RCDT TO VENT GA FLOW CONTROL (Steps 6.5[7]A, 6.5[7]B, 6.5[8]A, 6.5[8]B)
 - F. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL (Steps 6.6[8]A, 6.6[8]B, 6.6[9]A, 6.6[9]B)
 - G. 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL (Steps 6.7[8]A, 6.7[8]B, 6.7[9]A, 6.7[9]B)
- [7] The following values close in \leq 10 seconds:
 - A. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL (Step 6.1[26.1], 6.1[26.2])
 - B. 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL (Step 6.2[26.1], 6.2[26.2])
 - C. 2-FCV-77-9, RCDT PUMP DISCH VLV FLOW CONTROL (Step 6.3[26.1], 6.3[26.2])
 - D. 2-FCV-77-10, RCDT PUMP DISCH VALVE FLOW CONTROL (Step 6.4[14.1], 6.4[14.2])

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- E. 2-FCV-77-17, RCDT TO VENT GA FLOW CONTROL (Step 6.5[14.1], 6.5[14.2])
- F. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL (Step 6.6[16.1], 6.6[16.2])
- G. 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL (Step 6.7[16.1], 6.7[16.2])
- [8] The following valves fail in the closed position upon a loss of air:
 - A. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL (Step 6.1[22.1])
 - B. 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL (Step 6.2[22.1])
 - C. 2-FCV-77-9, RCDT PUMP DISCH VLV FLOW CONTROL (Step 6.3[22.1])
 - D. 2-FCV-77-10, RCDT PUMP DISCH VALVE FLOW CONTROL (Step 6.4[11.1])
 - E. 2-FCV-77-17, RCDT TO VENT GA FLOW CONTROL (Step 6.5[11.1])
 - F. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL (Step 6.6[12.1])
 - G. 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL (Step 6.7[12.1])
- [9] 2-LCV-77-415, RCDT LEVEL CONTROL responds to RCDT level setpoints as follows:
 - A. Closes \leq RCDT LOW Level setpoint (Step 6.8[10]).
 - B. Opens \geq RCDT HI or HI-HI Level setpoints (Step 6.8[6], 6.8[8]).

Date

- [10] Annunciation occurs on Panel 0-L-2 for the following:
 - A. \geq HI and \leq LOW Liquid LVL setpoint (Step 6.12[3], 6.12[15])
 - B. \geq High Pressure setpoint (Step 6.14[27])
 - C. \geq High Temperature setpoint (Step 6.10[56])
- [11] Reactor Coolant Drain Tank Pumps can be operated from the waste disposal panel, local control station or applicable reactor vent board:
 - A. Reactor Coolant Drain Tank Pump 2A (Subsection 6.10)
 - B. Reactor Coolant Drain Tank Pump 2B (Subsection 6.11)
- [12] Reactor Coolant Drain Tank Pump 2A starts on HI level signal when FCV-77-9 and FCV-77-10 are in full open position (Step 6.10[27])
- [13] Reactor Coolant Drain Tank 2B starts with FCV-77-9 and FCV-77-10 in full open position under the following conditions:
 - A. FCV-68-310 in full open position (Step 6.11[32])
 - B. HI-HI level signal (Step 6.11[27])
- [14] Pumps stop on low level signal:
 - A. Reactor Coolant Drain Tank 2A (Step 6.10[28])
 - B. Reactor Coolant Drain Tank 2B (Step 6.11[36])
- [15] "Motor Locked Out" Annunciator on Waste Disposal Panel functions correctly (Steps 6.17[4], 6.17[8])

Date

- [16] The following design flow rates are met:
 - A. Reactor Coolant Drain Tank Pump 2A flow rate is at least 50 GPM at 175 feet Total Dynamic Head (Steps 6.12[28.1], 6.12[28.2]).
 - B. Reactor Coolant Drain Tank Pump 2B flow rate is at least 150 GPM at 175 feet Total Dynamic Head (Steps 6.13[17.1], 6.13[17.2]).
- [17] The system processes liquid waste from assigned collection points through system filters to designated discharge and storage locations:
 - A. Reactor Coolant Drain Tank Pumps
 - 2-TANK-77-1, REACTOR COOLANT DRAIN TANK to 2-TANK-62-1B, HOLD-UP TANK B (Step 6.12[29])
 - 2-TANK-77-1, REACTOR COOLANT DRAIN TANK To 0-TANK-77-2, TRITIATED DRAIN COLLECTOR TANK (Step 6.13[18])
 - 2-TANK-77-1, REACTOR COOLANT DRAIN TANK to 2-TANK-63-46, REFUELING WATER STORAGE TANK (Step 6.14[20])
 - 2-TANK-77-1, REACTOR COOLANT DRAIN TANK to 0-TANK 84-110, FLOOD MODE AUXILIARY BORATION MAKEUP TANK (Step 6.15[11])
 - Refueling Canal to 2-TANK-63-46, REFUELING WATER STORAGE TANK (Steps 6.14[18], 6.14[20])
 - CVCS Excess Letdown Heat Exchanger to 2-TANK-77-1, REACTOR COOLANT DRAIN TANK (Step 6.16[6.1])
 - 2-TANK-68-PRT, PRESSURIZER RELIEF TANK to RCDT Pumps (Step 6.12[13])

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6.0 **PERFORMANCE**

NOTES

- 1) Stroke timing of valves will be measured from the handswitch actuation to GREEN light OFF upon opening and RED light OFF upon closing.
- 2) Unit 1 Annunciator Window 135F is a common Unit 2 alarm window and may not clear during this test. When acknowledged, an additional alarm input will cause the window to reflash. In such event the steady "acknowledged" light will be utilized to identify "no additional alarm occurring."

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Date

6.1 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL, Functional Test

1) This section will test 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL from its control stations and verify operability of all interlocks, indicating lights, and annunciators.

NOTES

- 2) Reference drawing 2-45W600-77-2, valve location 716/AZ287
 - [1] **ENSURE** prerequisites listed in Section 4.0 for Subsection 6.1 have been completed.
 - [2] **PERFORM** the following prior to beginning this Subsection
 - [2.1] **LIFT** Wire WCG4 from Terminal Point 7 on Terminal Board TB 610 in Panel 2-R-51.

1st

CV

NOTE

TS-1 will simulate a Phase A Containment Isolation Signal for 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL, when placed to the OFF position.

[2.2] **INSTALL** a jumper with test switch in the ON position, labeled TS-1, between Wire WCG4 and Terminal Point 8 on Terminal Board TB 610 in Panel 2-R-51.

1st

CV

	WBN Unit 2		/BN Liquid Waste Processing System hit 2		18	
	Data	Pack	cage: Page of	Date		
6.1	2-FC Fund	V-77 ctiona	-16, RCDT TO GAS ANALYZER FLOW C al Test (continued)	ONTROL,		
	[3]	EN FL	SURE that 2-FCV-77-16, RCDT TO GAS A OW CONTROL, is CLOSED:	NALYZER		
		Α.	Green Light ON at 2-HS-77-16A, RCDT T CIV-ØA IN CNTMT, on 2-M-15.	TO GAS ANAL		
		В.	Red Light OFF at 2-HS-77-16A, RCDT T CIV-ØA IN CNTMT.	O GAS ANAL		
		C.	Green Light ON at Containment Isolation (CISP) 2-XX-55-6F, Window 94, FCV-77-	Status Panel 16.	<u></u>	
	¢	D.	Red Light OFF at CISP 2-XX-55-6F, Wine FCV-77-16.	dow 94,		
		E.	By local verification at 2-FCV-77-16, RCE ANALYZER FLOW CONTROL, 716/AZ28	DT TO GAS 87.		
	[4]	PL/ CN GA	ACE 2-HS-77-16A, RCDT TO GAS ANAL TMT, in the OPEN position until 2-FCV-77- S ANALYZER FLOW CONTROL is FULLY	CIV-ØA IN -16, RCDT TO ′ OPEN THEN		
		RE	LEASE to the A AUTO position.			

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	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 35 of 218		
	Data	Pack	age: Page of	Date		
.1	2-FC Func	V-77- tiona	16, RCDT TO GAS ANALYZER FLOW CC al Test (continued)	ONTROL,		
	[5]	VEI GA	RIFY the following indications for 2-FCV-77- S ANALYZER FLOW CONTROL:	16, RCDT TO		
		Α.	Green Light OFF at 2-HS-77-16A, RCDT T CIV-ØA IN CNTMT.	FO GAS ANAL		
		В.	Red Light ON at 2-HS-77-16A, RCDT TO CIV-ØA IN CNTMT.	GAS ANAL		
		C.	Green Light OFF at CISP 2-XX-55-6F, Wir FCV-77-16.	ndow 94,		
		D.	Red Light ON at CISP 2-XX-55-6F, Windo FCV-77-16.	w 94,		
·		E.	2-FCV-77-16, RCDT TO GAS ANALYZER CONTROL OPEN (locally).	FLOW		
	[6]	PL/ CIV	ACE 2-HS-77-16A, RCDT TO GAS ANAL ⁄-ØA IN CNTMT, in the CLOSE position, AN	ID .		
		VE	RIFY:			
		Α.	Green Light ON at 2-HS-77-16A, RCDT T CIV-ØA IN CNTMT.	O GAS ANAL		
		В.	Red Light OFF at 2-HS-77-16A, RCDT TC CIV-ØA IN CNTMT.	GAS ANAL		
		C.	Green Light ON at CISP 2-XX-55-6F. Wine FCV-77-16.	dow 94,		
		D.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-16.	ow 94,		
		E.	2-FCV-77-16, RCDT TO GAS ANALYZEF CONTROL CLOSED (locally).	R FLOW		

**	WBN Unit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 36 of 218	
	Data Pa	ckage: Page of	Date	
6.1	2-FCV-7 Functio	7-16, RCDT TO GAS ANALYZER FLOW nal Test (continued)	CONTROL,	
	[7] V R	ERIFY the light status at 2-HS-77-16C, CDT TO GAS ANALYZER FLOW CONT	ROL, on 2-L-10:	
·	A	. Green Light OFF		
	В	. Red Light OFF		
	[8] E 2-	NSURE Annunciator Window 148-C, ACF XA-55-6F is CLEAR.	R PNL 2-L-11B, at	

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Ľ	WBN Jnit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 , Page 37 of 218			
	Data	Pack	age: Page of	Date			
1	2-FC Func	FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL, unctional Test (continued)					
	[9]	PL/ AN	ACE Transfer Switch 2-XS-77-16, RCDT T ALYZER IN CNTMT, on 2-L-11B, to the A	O GAS UX position, AND			
		VEF	RIFY:				
		A.	Green Light ON at 2-HS-77-16C, RCDT ANALYZER FLOW CONTROL.	TO GAS			
		В.	Red Light OFF at 2-HS-77-16C, RCDT T ANALYZER FLOW CONTROL.	O GAS			
		C.	Green Light OFF at 2-HS-77-16A, RCDT CIV-ØA IN CNTMT.	TO GAS ANAL			
		D.	Red Light OFF at 2-HS-77-16A, RCDT T CIV-ØA IN CNTMT.	O GAS ANAL			
		E.	Green Light OFF at CISP 2-XX-55-6F, W FCV-77-16.	/indow 94,			
		F.	Red Light OFF at CISP 2-XX-55-6F, Win FCV-77-16.	dow 94,			
		G. ,	Annunciator Window 148-C, ACR PNL 2 ALARMS.	-L-11B,			
	[10]	HO CIV	LD 2-HS-77-16A, RCDT TO GAS ANAL /-ØA IN CNTMT, in the OPEN position, AN	1D			
		VE	RIFY:				
		Α.	Green Light ON at, 2-HS-77-16C, RCDT ANALYZER FLOW CONTROL IN CNTM	TO GAS			
		В.	Red Light OFF at 2-HS-77-16C, RCDT T ANALYZER FLOW CONTROL.	O GAS			
		C.	2-FCV-77-16, RCDT TO GAS ANALYZE CONTROL CLOSED (locally).	R FLOW			
	[1	0.1]	RELEASE 2-HS-77-16A, RCDT TO GA CIV-ØA IN CNTMT, to the A AUTO pos	AS ANAL			

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	Data	Pacł	cage: Page of	Da	te
6.1	2-FC ^V Func	V-77- tiona	16, RCDT TO GAS ANALYZER FLOW Co al Test (continued)	ONTROL,	
	[11]	PL/ FL	ACE 2-HS-77-16C, RCDT TO GAS ANALY OW CONTROL, to the OPEN position, AN	ZER D	
		VE	RIFY:		
. 1		A.	Green Light OFF		
		В.	Red Light ON		
		C.	2-FCV-77-16, RCDT TO GAS ANALYZEI CONTROL OPEN (locally).	R FLOW	
	[12]	PL/ CN	ACE 2-HS-77-16A, RCDT TO GAS ANAL (TMT, in the CLOSE position, AND	CIV-ØA IN	
		VE AN	RIFY on 2-L-10 that 2-FCV-77-16, RCDT T ALYZER FLOW CONTROL remains OPEN	O GAS	
	[13]	PL/ FL	ACE 2-HS-77-16C, RCDT TO GAS ANALY OW CONTROL, to the CLOSE position, AI	ZER ND	
		VE	RIFY:		•
		A.	Green Light ON	١	
		В.	Red Light OFF		
		Ç.	2-FCV-77-16, RCDT TO GAS ANALYZE CONTROL CLOSED (locally).	R FLOW	
	[14]	PL/ AN	ACE Transfer Switch 2-XS-77-16, RCDT T IALYZER IN CNTMT, to the NOR position,	O GAS AND	. *
		VE	RIFY:		·
		A.	Green Light ON at 2-HS-77-16A, RCDT T CIV-ØA IN CNTMT.	O GAS ANAL	
		Β.	Red Light OFF at 2-HS-77-16A, RCDT T CIV-ØA IN CNTMT.	O GAS ANAL	
		C.	Green Light ON at CISP 2-XX-55-6F, Wir FCV-77-16.	ndow 94,	

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Data Pac	kage: Page of	Date
6.1 2-FCV-77 Function	-16, RCDT TO GAS ANALYZER FLOW C al Test (continued)	CONTROL,
D.	Red Light OFF at CISP 2-XX-55-6F, Win FCV-77-16.	ndow 94,
E.	Green Light OFF at 2-HS-77-16C, RCDT ANALYZER FLOW CONTROL.	Г ТО GAS
F.	Red Light OFF at 2-HS-77-16C, RCDT T ANALYZER FLOW CONTROL.	ro gas
G.	Annunciator Window 148-C, ACR PNL 2	-L-11B, CLEARS.
[15] PL CC	ACE 2-HS-77-16C, RCDT TO GAS ANAL ONTROL, to the OPEN position, AND	YZER FLOW
VE AN	RIFY at 2-M-15 that 2-FCV-77-16, RCDT	TO GAS SED
[16] PL CN GA	ACE 2-HS-77-16A, RCDT TO GAS ANAL ITMT, in the OPEN position until 2-FCV-77 AS ANALYZER FLOW CONTROL is FULL	CIV-ØA IN 7-16, RCDT TO Y OPEN, THEN
RE CN	LEASE 2-HS-77-16A, RCDT TO GAS AN ITMT to the A AUTO position.	AL CIV-ØA IN
[17] PL CC	ACE 2-HS-77-16C, RCDT TO GAS ANAL NTROL, to the CLOSE position, AND	YZER FLOW
VE AN	RIFY at 2-M-15 that 2-FCV-77-16, RCDT IALYZER FLOW CONTROL remains OPE	TO GAS N

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6.1 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL, Functional Test (continued)

NOTE

The following steps will verify that 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL closes on a Phase A Containment Isolation Signal.

[18] **PLACE** TS-1 at Terminal Board TB 610 in Panel 2-R-51 to the OFF position, **AND**

VERIFY

- A. Green Light ON at CISP 2-XX-55-6F. Window 94, FCV-77-16 (ACC CRIT).
- B. Red Light OFF at CISP 2-XX-55-6F, Window 94, FCV-77-16 (ACC CRIT).
- C. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL CLOSED (locally) (ACC CRIT).
- [19] **PLACE** TS-1 at Terminal Board TB 610 in Panel 2-R-51 to the ON position, **AND**

VERIFY

- A. Green Light ON at CISP 2-XX-55-6F. Window 94, FCV-77-16 (ACC CRIT).
- B. Red Light OFF at CISP 2-XX-55-6F, Window 94, FCV-77-16 (ACC CRIT).
- C. 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL CLOSED (locally) (ACC CRIT).
- [20] **PLACE** 2-HS-77-16A, RCDT TO GAS ANAL CIV-ØA IN CNTMT, in the OPEN position until 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL is FULLY OPEN, **THEN**

RELEASE 2-HS-77-16A, RCDT TO GAS ANAL CIV-ØA IN CNTMT to the A AUTO position.

[21] **CLOSE** 2-ISV-32-3517, CONTROL AIR ISOLATION VALVE TO 2-FCV-77-16.

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6.1	2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL, Functional Test (continued)				
	[22]	OPEN petcock to vent control air at 2-PREG-77-16, CONTROL AIR PRESSURE REG FOR 2-FCV-77-16.			
	[22	2.1] VERIFY 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL CLOSES. (ACC CRIT)			
	[23]	CLOSE petcock at 2-PREG-77-16, CONTROL AIR PRESSURE REG FOR 2-FCV-77-16.			
	[24]	OPEN 2-ISV-32-3517, CONTROL AIR ISOLATION VALVE TO 2-FCV-77-16.)		
	[24	4.1] VERIFY 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL OPENS.			

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Date ____

6.1 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL, Functional Test (continued)

		N	IOTES		
1)	The following Control Switch	steps require valve strok a in both the Open and C	te timing locally a losed positions.	it the valve and remote	ely at the
2)	Local timing b valve stem mo with the position based on the p	egins with the initiating s ovement. Remote timing on indication lights status movement to the safety	ignal and is cond begins with the i s change. Stroke function final pos	luded with the comple nitiating signal and is o time acceptance crite ition of the valve.	tion of concluded ria will be
	[25] PLA CNT GAS REL CNT	CE 2-HS-77-16A, RCD MT, in the OPEN position ANALYZER FLOW CC EASE 2-HS-77-16A, RC MT to the A AUTO posi	Γ TO GAS ANAL on until 2-FCV-77 NTROL is FULL CDT TO GAS AN tion.	CIV-ØA IN '-16, RCDT TO Y OPEN, THEN AL CIV-ØA IN	
	[25.1]	RECORD remote ope TO GAS ANAL CIV-Ø	ning time at 2-HS A IN CNTMT.	3-77-16A, RCDT	
		M&TE		Cal Due Date	
		•		seconds	
	[25-2]	RECORD local openir	o time at 2-ECV	77-16 RCDT TO	

[25.2] **RECORD** local opening time at 2-FCV-77-16, RCDT TO GAS ANALYZER FLOW CONTROL.

M&TE	Cal Due Date	

seconds

[26] **PLACE** 2-HS-77-16A, RCDT TO GAS ANAL CIV-ØA IN CNTMT, in the CLOSE position.

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	Data Pacl	kage: Page of	Date
.1	2-FCV-77 Function	-16, RCDT TO GAS ANALYZER FLOW C al Test (continued)	CONTROL,
	[26.1]	RECORD remote closing time at 2-HS- TO GAS ANAL CIV-ØA IN CNTMT, (A	77-16A, RCDT CC CRIT)
		M&TE	Cal Due Date
		seconds	(≤ 10 seconds)
	[20.2]	GAS ANALYZER FLOW CONTROL. (ACC CRIT)
		M&TE	Cal Due Date
		M&TE seconds	Cal Due Date (≤ 10 seconds)
	[27] RE Tei and	M&TE seconds seconds MOVE the jumper with test switch, labeled rminal Point 8 on Terminal Board TB 610 i d Wire WCG4.	Cal Due Date (≤ 10 seconds) d TS-1, from n Panel 2-R-51
	[27] RE Tei and	M&TE seconds seconds MOVE the jumper with test switch, labeled rminal Point 8 on Terminal Board TB 610 i d Wire WCG4.	Cal Due Date (≤ 10 seconds) d TS-1, from n Panel 2-R-51 1st
	[27] RE Ter and	M&TE seconds seconds MOVE the jumper with test switch, labeled rminal Point 8 on Terminal Board TB 610 i d Wire WCG4.	Cal Due Date (≤ 10 seconds) d TS-1, from n Panel 2-R-51 CV
	[27] RE Ter and [28] LA 610	M&TE seconds MOVE the jumper with test switch, labeled rminal Point 8 on Terminal Board TB 610 i d Wire WCG4. ND Wire WCG4 at Terminal Point 7 on Te D in Panel 2-R-51.	Cal Due Date (≤ 10 seconds) d TS-1, from n Panel 2-R-51 Tst CV
	[27] RE Tei and [28] LA 610	M&TE seconds MOVE the jumper with test switch, labeled rminal Point 8 on Terminal Board TB 610 i d Wire WCG4. ND Wire WCG4 at Terminal Point 7 on Te D in Panel 2-R-51.	Cal Due Date (≤ 10 seconds) d TS-1, from n Panel 2-R-51 Tst erminal Board TB 1st

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	Data Paci	kage: Page of	Date
6.2	2-FCV-77 Test	-18, RCDT TO VENT HDR FLOW CONTR	ROL, Functional
	<u>,, , , , , , , , , , , , , , , , , , ,</u>	NOTES	

- 1) This section will test 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL from its control stations and verify operability of all interlocks, indicating lights, and annunciators.
- 2) Reference drawing 2-45W600-77-2, valve location 716/AZ281
 - [1] **VERIFY** prerequisites listed in section 4.0 for Subsection 6.2 have been completed.
 - [2] **PERFORM** the following prior to beginning this Subsection:
 - [2.1] **LIFT** Wire WCK4 from Terminal Point 1 on Terminal Board TB 610 in Panel 2-R-51.

1st

CV

NOTE

TS-2 will simulate a Phase A Containment Isolation Signal for 2-FCV-77-18, RCDT TO VENT HDR FLOW CONTROL, when placed to the OFF position.

[2.2] **INSTALL** a jumper with test switch in the ON position, labeled TS-2, between Wire WCK4 and Terminal Point 2 on Terminal Board TB 610 in Panel 2-R-51.

1st

CV

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	Data	Pacl	kage: Page of	Date
6.2	2-FC Test	V-77 (con	-18, RCDT TO VENT HDR FLOW CONTRO tinued)	DL, Functional
	[3]	EN RC	SURE the following indications for 2-FCV-7 CDT TO VENT HDR FLOW CONTROL:	7-18,
		Α.	Green Light ON at 2-HS-77-18A, RCDT TO HDR CIV-ØA IN CNTMT, on 2-M-15.	O WDS VENT
		В.	Red Light OFF at 2-HS-77-18A, RCDT TC HDR CIV-ØA IN CNTMT.	WDS VENT
•		C.	Green Light ON at Containment Isolation S (CISP) 2-XX-55-6F, Window 95, FCV-77-7	Status Panel I8
		D.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-18.	ow 95,
		E.	By local verification at 2-FCV-77-18, RCD HDR FLOW CONTROL, is CLOSED, 716/	T TO VENT /AZ281.
·	[4]	PL/ CN VE	ACE 2-HS-77-18A, RCDT TO WDS VENT H TMT in the OPEN position until 2-FCV-77-1 NT HDR FLOW CONTROL, is FULLY OPE	IDR CIV-ØA IN 8, RCDT TO N, THEN
		RE IN (LEASE 2-HS-77-18A, RCDT TO WDS VEN CNTMT to the A AUTO position.	IT HDR CIV-ØA

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	Data	Pacl	kage: Page of	Date _
6.2	2-FC Test	V-77 (con	-18, RCDT TO VENT HDR FLOW CONTR tinued)	OL, Functional
	[5]	EN RC	SURE the following indications that 2-FCV CDT TO VENT HDR FLOW CONTROL, is 0	-77-18, OPEN:
		Α.	Green Light OFF at 2-HS-77-18A, RCDT HDR CIV-ØA IN CNTMT.	TO WDS VENT
		В.	Red Light ON at 2-HS-77-18A, RCDT TC HDR CIV-ØA IN CNTMT.	WDS VENT
		C.	Green Light OFF at CISP 2-XX-55-6F, W FCV-77-18.	/indow 95,
		D.	Red Light ON at CISP 2-XX-55-6F, Wind FCV-77-18.	ow 95, —
		E.	2-FCV-77-18, RCDT TO VENT HDR FLC OPEN (locally)	OW CONTROL
	[6]	PL/ CIV	ACE 2-HS-77-18A, RCDT TO WDS VENT /-ØA IN CNTMT, in the CLOSE position, A	HDR ND
		VE	RIFY:	
		A.	Green Light ON at 2-HS-77-18A, RCDT HDR CIV-ØA IN CNTMT.	TO WDS VENT
		В.	Red Light OFF at 2-HS-77-18A, RCDT T HDR CIV-ØA IN CNTMT.	O WDS VENT
		C.	Green Light ON at CISP 2-XX-55-6F, Win FCV-77-18.	ndow 95, —
		D.	Red Light OFF at CISP 2-XX-55-6F, Win FCV-77-18.	dow 95,
		E.	2-FCV-77-18, RCDT TO VENT HDR FLC CLOSES (locally).	OW CONTROL
	[7]	VE HC	RIFY the light status at 2-HS-77-18C, RCD DR FLOW CONTROL, on 2-L-10:	DT TO VENT
		Α.	Green Light OFF	_
		В.	Red Light OFF	_
		υ.		-

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	Data	Pack	cage: Page of	Date	
6.2	2-FC Test	V-77- (con	-18, RCDT TO VENT HDR FLOW CONTRO	DL, Functional	
	[8]	EN 2-X	SURE Annunciator Window 148-C, ACR PI A-55-6F is CLEAR.	NL 2-L-11B, at	
	[9]	PL/ Ve	ACE Transfer Switch 2-XS-77-18, RCDT TO NT HDR, on 2-L-11B, to the AUX position,	D WDS AND	
		VE	RIFY:		
		A.	Green Light ON at 2-HS-77-18C, RCDT T FLOW CONTROL.	O VENT HDR	
		В.	Red Light OFF at 2-HS-77-18C, RCDT TO FLOW CONTROL.	O VENT HDR	
		C.	Green Light OFF at 2-HS-77-18A, RCDT HDR CIV-ØA IN CNTMT.	TO WDS VENT	
		D.	Red Light OFF at 2-HS-77-18A, RCDT TO HDR CIV-ØA IN CNTMT.	OWDS VENT	
		E.	Green Light OFF at CISP 2-XX-55-6F, Wi FCV-77-18.	ndow 95,	
		F.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-18.	low 95,	
		G.	Annunciator Window 148-C, ACR PNL 2- ALARMS.	L-11B,	

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	Data F	Pack	age: Page of	Date
6.2	2-FCV Test (-77- cont	18, RCDT TO VENT HDR FLOW CONTR inued)	ROL, Functional
	[10]	HO CI\	LD 2-HS-77-18A, RCDT TO WDS VENT I /-ØA IN CNTMT, in the OPEN position, A	HDR ND
		VEF	RIFY:	
		A.	Green Light ON at 2-HS-77-18C, RCDT FLOW CONTROL.	TO VENT HDR
		В.	Red Light OFF at 2-HS-77-18C, RCDT T FLOW CONTROL.	O VENT HDR
		C.	2-FCV-77-18, RCDT TO VENT HDR FLC CLOSED (locally).	OW CONTROL
	[10).1]	RELEASE 2-HS-77-18A, RCDT TO WI CIV-ØA IN CNTMT, to the A AUTO pos	DS VENT HDR sition.
	[11]	PL/ FL(ACE 2-HS-77-18C, RCDT TO VENT HDR OW CONTROL, to the OPEN position, AN	1D
		VE	RIFY:	
		A.	Green Light OFF	
	•	В.	Red Light ON	
		C.	2-FCV-77-18, RCDT TO VENT HDR FLO OPEN (locally).	
	[12]	PL/ CN	ACE 2-HS-77-18A, RCDT TO WDS VENT TMT, in the CLOSE position, AND	HDR CIV-ØA IN
		VEF FLC	RIFY on 2-L-10 that 2-FCV-77-18, RCDT ⁻ DW CONTROL remains OPEN.	TO VENT HDR
	WBN Unit 2		2-PTI-077-01 Rev. 0000 Page 49 of 218	
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	Data	Pacl	kage: Page of	Date
5.2	2-FC Test	V-77- (con	-18, RCDT TO VENT HDR FLOW CONTR tinued)	OL, Functional
	[13]	PL/ FL to t	ACE 2-HS-77-18C, RCDT TO VENT HDR OW CONTROL. RCDT VENT TO WDS VE he ^r CLOSE position, AND	NT HDR,
		VE	RIFY:	
		Α.	Green Light ON	•
		В.	Red Light OFF	
		C.	2-FCV-77-18, RCDT TO VENT HDR FLO CLOSES (locally).	
	[14]	PL/ RC	ACE Transfer Switch 2-XS-77-18, CDT TO WDS VENT HDR, to the NOR posi	tion, AND
		VE	RIFY:	
		A.	Green Light ON at 2-HS-77-18A, RCDT T HDR CIV-ØA IN CNTMT.	O WDS VENT
		В.	Red Light OFF at 2-HS-77-18A, RCDT TO HDR CIV-ØA IN CNTMT.	D WDS VENT
		C.	Green Light ON at CISP 2-XX-55-6F, Wir FCV-77-18.	dow 95,
		D.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-18.	low 95,
		E.	Green Light OFF at 2-HS-77-18C, RCDT FLOW CONTROL.	TO VENT HDR
		F.	Red Light OFF at 2-HS-77-18C, RCDT TO FLOW CONTROL.	O VENT HDR
		G.	Annunciator Window 148-C, ACR PNL 2-	L-11B, CLEARS.
	[15]	PL/ CO	ACE 2-HS-77-18C, RCDT TO VENT HDR NTROL, to the OPEN position, AND	FLOW
		VE FLC	RIFY at 2-M-15 that 2-FCV-77-18, RCDT T OW CONTROL remains CLOSED.	O VENT HDR

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	Data	Pack	kage: Page of	Date		
2	2-FCV-77-18, RCDT TO VENT HDR FLOW CONTR Test (continued)		ROL, Functional			
	[16]	PL/ CN OP	ACE 2-HS-77-18A, RCDT TO WDS VENT TMT, in the OPEN position until 2-FCV-77 EN, THEN	HDR CIV-ØA IN 7-18 is FULLY		
·		RE IN (LEASE 2-HS-77-18A, RCDT TO WDS VE CNTMT to the A AUTO position.	NT HDR CIV-ØA		
·	[17]	PL/ CO	ACE 2-HS-77-18C, RCDT TO VENT HDR NTROL, to the CLOSE position, AND	FLOW		
		VEI FL(RIFY at 2-M-15 that 2-FCV-77-18, RCDT ⁻ OW CONTROL remains OPEN.	TO VENT HDR	<u></u>	
		VEI FLC	RIFY at 2-M-15 that 2-FCV-77-18, RCDT ⁻ OW CONTROL remains OPEN. NOTE	TO VENT HDR	<u></u>	
The fo	ollowing s on a F	VEI FLC step	RIFY at 2-M-15 that 2-FCV-77-18, RCDT OW CONTROL remains OPEN. NOTE os will verify that 2-FCV-77-18, RCDT TO e A Containment Isolation Signal.	TO VENT HDR	ONTROL	
he fo	ollowing s on a F [18]	VEI FLC step Phase PLA OF	RIFY at 2-M-15 that 2-FCV-77-18, RCDT OW CONTROL remains OPEN. NOTE os will verify that 2-FCV-77-18, RCDT TO A Containment Isolation Signal. ACE TS-2 at Terminal Board TB 610 in Pa F position, AND	TO VENT HDR	ONTROL	
he fo	ollowing s on a F [18]	VEI FLC step Phase PLA OF	RIFY at 2-M-15 that 2-FCV-77-18, RCDT OW CONTROL remains OPEN. NOTE os will verify that 2-FCV-77-18, RCDT TO A Containment Isolation Signal. ACE TS-2 at Terminal Board TB 610 in Pa F position, AND RIFY	TO VENT HDR	ONTROL	
The fo	ollowing s on a F [18]	VEI FLC Phase PLA OF VEI A.	RIFY at 2-M-15 that 2-FCV-77-18, RCDT DW CONTROL remains OPEN. NOTE os will verify that 2-FCV-77-18, RCDT TO e A Containment Isolation Signal. ACE TS-2 at Terminal Board TB 610 in Pa F position, AND RIFY Green Light ON at CISP 2-XX-55-6F. Wi FCV-77-18 (ACC CRIT).	TO VENT HDR VENT HDR FLOW C anel 2-R-51 to the indow 95,	ONTROL	
The fo	ollowing s on a F [18]	VEI FLC Phase Phase PLA OF VEI A. B.	RIFY at 2-M-15 that 2-FCV-77-18, RCDT DW CONTROL remains OPEN. NOTE os will verify that 2-FCV-77-18, RCDT TO A Containment Isolation Signal. ACE TS-2 at Terminal Board TB 610 in Pa F position, AND RIFY Green Light ON at CISP 2-XX-55-6F. Wi FCV-77-18 (ACC CRIT). Red Light OFF at CISP 2-XX-55-6F, Wir FCV-77-18 (ACC CRIT).	TO VENT HDR VENT HDR FLOW C anel 2-R-51 to the indow 95,		
he fo	ollowing s on a F [18]	VEI FLC step hase Phase OF VEI A. B. C.	RIFY at 2-M-15 that 2-FCV-77-18, RCDT OW CONTROL remains OPEN. NOTE as will verify that 2-FCV-77-18, RCDT TO V A Containment Isolation Signal. ACE TS-2 at Terminal Board TB 610 in Pa F position, AND RIFY Green Light ON at CISP 2-XX-55-6F. Wi FCV-77-18 (ACC CRIT). Red Light OFF at CISP 2-XX-55-6F, Wir FCV-77-18 (ACC CRIT). 2-FCV-77-18, RCDT TO RCDT TO VEN CONTROL CLOSED (locally) (ACC CRI	TO VENT HDR VENT HDR FLOW C anel 2-R-51 to the indow 95, ndow 95,		
The fo	ollowing s on a P [18]	VEI FLC Phase Phase PLA OF A. B. C.	RIFY at 2-M-15 that 2-FCV-77-18, RCDT DW CONTROL remains OPEN. NOTE os will verify that 2-FCV-77-18, RCDT TO e A Containment Isolation Signal. ACE TS-2 at Terminal Board TB 610 in Pa F position, AND RIFY Green Light ON at CISP 2-XX-55-6F. Wi FCV-77-18 (ACC CRIT). Red Light OFF at CISP 2-XX-55-6F, Wir FCV-77-18 (ACC CRIT). 2-FCV-77-18, RCDT TO RCDT TO VEN CONTROL CLOSED (locally) (ACC CRI	TO VENT HDR VENT HDR FLOW C anel 2-R-51 to the indow 95, ndow 95, T HDR FLOW T).	ONTROL	
he fo	ollowing s on a F [18]	VEI FLC step hase Phase OF VEI A. B. C.	RIFY at 2-M-15 that 2-FCV-77-18, RCDT OW CONTROL remains OPEN. NOTE as will verify that 2-FCV-77-18, RCDT TO V a A Containment Isolation Signal. ACE TS-2 at Terminal Board TB 610 in Pa F position, AND RIFY Green Light ON at CISP 2-XX-55-6F. Wi FCV-77-18 (ACC CRIT). Red Light OFF at CISP 2-XX-55-6F, Wir FCV-77-18 (ACC CRIT). 2-FCV-77-18, RCDT TO RCDT TO VEN CONTROL CLOSED (locally) (ACC CRI	TO VENT HDR VENT HDR FLOW C anel 2-R-51 to the indow 95, ndow 95, T HDR FLOW T).	ONTROL	

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 WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 51 of 218
Data	Pack	age: Page of	Date
2-FC Test	V-77- (cont	18, RCDT TO VENT HDR FLOW CONTRO	DL, Functional
[19]	PLA ON	CE TS-2 at Terminal Board TB 610 in Pan position, AND	el 2-R-51 to the
	VEF	RIFY	
	A.	Green Light ON at CISP 2-XX-55-6F. Wine FCV-77-18 (ACC CRIT).	dow 95,
	В.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-18 (ACC CRIT).	ow 95,
	C.	2-FCV-77-18, RCDT TO RCDT TO VENT CONTROL CLOSED (locally) (ACC CRIT)	HDR FLOW
[20]	PLA CN1 OPE	ACE 2-HS-77-18A, RCDT TO WDS VENT F IMT, in the OPEN position until 2-FCV-77-7 EN, THEN	IDR CIV-ØA IN 18 is FULLY
	REL IN C	EASE 2-HS-77-18A, RCDT TO WDS VEN	T HDR CIV-ØA
[21]	CLC TO :	DSE 2-ISV-32-3539, CONTROL AIR ISOLA 2-FCV-77-18.	TION VALVE
[22]	OPE COI	EN petcock to vent control air at 2-PREG-7 NTROL AIR PRESSURE REG FOR 2-FCV	7-18, -77-18
[2	2.1]	VERIFY 2-FCV-77-18, RCDT TO VENT CONTROL CLOSES (ACC CRIT).	HDR FLOW
[23]	CLC PRE	DSE petcock at 2-PREG-77-18, CONTROL ESSURE REG FOR 2-FCV-77-18.	AIR
[24]	OPE 2-F(EN 2-ISV-32-3539, CONTROL AIR ISOLAT CV-77-18.	
[2	4.1]	VERIFY 2-FCV-77-18, RCDT TO VENT CONTROL OPENS.	HDR FLOW

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-	WBN Unit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 52 of 218
	Data Pac	ckage: Page of	Date
6.2	2-FCV-7 Test (co	7-18, RCDT TO VENT HDR FLOW CONTR ntinued)	ROL, Functional
		NOTES	
1)	The followin Control Swit	g steps require valve stroke timing locally a tch in both the Open and Closed positions.	t the valve and remotely at the
2)	Local timing valve stem r with the pos based on th	begins with the initiating signal and is conc movement. Remote timing begins with the in ition indication lights status change. Stroke e movement to the safety function final posi-	cluded with the completion of nitiating signal and is concluded time acceptance criteria will be ition of the valve.
	[25] PI CI O R I	LACE 2-HS-77-18A, RCDT TO WDS VENT NTMT, in the OPEN position until 2-FCV-77 PEN, THEN ELEASE 2-HS-77-18A, RCDT TO WDS VE	THDR CIV-ØA IN 7-18 is FULLY ENT HDR CIV-ØA
	[25] PI CI O RI IN	LACE 2-HS-77-18A, RCDT TO WDS VENT NTMT, in the OPEN position until 2-FCV-77 PEN, THEN ELEASE 2-HS-77-18A, RCDT TO WDS VE I CNTMT to the A AUTO position.	THDR CIV-ØA IN 7-18 is FULLY ENT HDR CIV-ØA
	[25] PI CI O RI IN [25.1]	 LACE 2-HS-77-18A, RCDT TO WDS VENT NTMT, in the OPEN position until 2-FCV-77 PEN, THEN ELEASE 2-HS-77-18A, RCDT TO WDS VE I CNTMT to the A AUTO position. RECORD remote opening time at 2-HS TO WDS VENT HDR CIV-ØA IN CNTM 	THDR CIV-ØA IN 7-18 is FULLY ENT HDR CIV-ØA
	[25] PI CI O RI IN [25.1]	LACE 2-HS-77-18A, RCDT TO WDS VENT NTMT, in the OPEN position until 2-FCV-77 PEN, THEN ELEASE 2-HS-77-18A, RCDT TO WDS VE I CNTMT to the A AUTO position. RECORD remote opening time at 2-HS TO WDS VENT HDR CIV-ØA IN CNTM M&TE	THDR CIV-ØA IN 7-18 is FULLY ENT HDR CIV-ØA 6-77-18A, RCDT MT. Cal Due Date
	[25] PI CI OI RI IN [25.1]	LACE 2-HS-77-18A, RCDT TO WDS VENT NTMT, in the OPEN position until 2-FCV-77 PEN, THEN ELEASE 2-HS-77-18A, RCDT TO WDS VE I CNTMT to the A AUTO position. RECORD remote opening time at 2-HS TO WDS VENT HDR CIV-ØA IN CNTM M&TE	THDR CIV-ØA IN 7-18 is FULLY ENT HDR CIV-ØA 6-77-18A, RCDT MT. Cal Due Date seconds
-	[25] PI CI O RI IN [25.1]	LACE 2-HS-77-18A, RCDT TO WDS VENT NTMT, in the OPEN position until 2-FCV-77 PEN, THEN ELEASE 2-HS-77-18A, RCDT TO WDS VE I CNTMT to the A AUTO position. RECORD remote opening time at 2-HS TO WDS VENT HDR CIV-ØA IN CNTM M&TE	THDR CIV-ØA IN 7-18 is FULLY ENT HDR CIV-ØA
	[25] PI CI O RI [25.1]	LACE 2-HS-77-18A, RCDT TO WDS VENT NTMT, in the OPEN position until 2-FCV-77 PEN, THEN ELEASE 2-HS-77-18A, RCDT TO WDS VE I CNTMT to the A AUTO position. RECORD remote opening time at 2-HS TO WDS VENT HDR CIV-ØA IN CNTM M&TE RECORD local opening time at 2-FCV- VENT HDR FLOW CONTROL. M&TE	THDR CIV-ØA IN Y-18 is FULLY ENT HDR CIV-ØA G-77-18A, RCDT MT. Cal Due Date seconds -77-18, RCDT TO Cal Due Date

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Data Pack	<age: of<="" page="" th=""><th>Date _</th><th></th></age:>	Date _	
2-FCV-77 Test (con	-18, RCDT TO VENT HDR FLOW Continued)	ONTROL, Functional	
[26] PL CN	ACE 2-HS-77-18A, RCDT TO WDS Y TMT, in the CLOSE position.	VENT HDR CIV-ØA IN	
[26.1]	RECORD remote closing time at 2 TO WDS VENT HDR CIV-ØA IN	2-HS-77-18A, RCDT CNTMT. (ACC CRIT)	
	M&TE	Cal Due Date	
	seconds	(< 10 seconds)	
[26.2]	RECORD local closing time at 2-F	- 	
[26.2]	RECORD local closing time at 2-F VENT HDR FLOW CONTROL. (A M&TE	- 	
[26.2]	RECORD local closing time at 2-F VENT HDR FLOW CONTROL. (A M&TE	-====================================	
[26.2] [27] RE Ter and	RECORD local closing time at 2-F VENT HDR FLOW CONTROL. (A M&TE	=CV-77-18, RCDT TO ACC CRIT) Cal Due Date (≤ 10 seconds) = abeled TS-2, from 610 in Panel 2-R-51 =	1st CV
[26.2] [27] RE Ter and	RECORD local closing time at 2-F VENT HDR FLOW CONTROL. (A M&TE	CV-77-18, RCDT TO Cal Due Date (≤ 10 seconds) abeled TS-2, from 610 in Panel 2-R-51 - on Terminal Board TB	1st CV
[26.2] [27] RE Ter and [28] LA 610	RECORD local closing time at 2-F VENT HDR FLOW CONTROL. (A M&TE	=====================================	1st CV 1st

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	Data P	ackage: Page of	Date
6.3	2-FCV-	77-9, RCDT PUMP DISCHARGE FLOW CO	NTROL,
	Functi	onal Test	
		NOTES	
1)	This section its control annunciate	on will test 2-FCV-77-9, RCDT PUMP DISCH/ stations and verify operability of all interlocks ors.	ARGE FLOW CONTROL from , indicating lights, and
2)	Reference	e drawing 2-45W600-77-1, valve location 716/	AZ278
	[1]	VERIFY prerequisites listed in Section 4.0 for have been completed.	subsection 6.3
	[2]	PERFORM the following prior to beginning the	s Subsection:

[2.1] **LIFT** Wire WCJ4 from Terminal Point 3 on Terminal Board TB 610 in Panel 2-R-51.

NOTE

TS-3 will simulate a Phase A Containment Isolation Signal for 2-FCV-77-9, RCDT PUMP DISCHARGE FLOW CONTROL, when placed to the OFF position.

[2.2] **INSTALL** a jumper with test switch in the ON position, labeled TS-3, between Wire WCJ4 and Terminal Point 4 on Terminal Board TB 610 in Panel 2-R-51.

1st

1st

CV

CV

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Data	I Pacl	Package: Page of Date			
2-FC Fun	V-77 ctiona	-9, RCDT PUMP DISCHARGE FLOW CO al Test (continued)	NTROL,		
[3]	EN FL	SURE that 2-FCV-77-9, RCDT PUMP DIS OW CONTROL, is CLOSED:	CHARGE		
-	A.	Green Light ON at 2-HS-77-9A, RCDT P CIV-ØA IN CNTMT, on 2-M-15.	MPS TO TDCT		
	В.	Red Light OFF at 2-HS-77-9A, RCDT PM CIV-ØA IN CNTMT.	IPS TO TDCT		
· .	C.	Green Light ON at Containment Isolation (CISP) 2-XX-55-6F, Window 93, FCV-77	i Status Panel -9.		
	D.	Red Light OFF at CISP 2-XX-55-6F, Win FCV-77-9.	dow 93,		
	E.	By local verification at 2-FCV-77-9, RCD DISCHARGE FLOW CONTROL, 716/AZ	T PUMP 278.		
[4]	PL/ CN OP	ACE 2-HS-77-9A, RCDT PMPS TO TDCT TMT, in the OPEN position until 2-FCV-77 EN, THEN	CIV-ØA IN -9 is FULLY		
	RE CN	LEASE 2-HS-77-9A, RCDT PMPS TO TD TMT to the A AUTO position.	CT CIV-ØA IN	x	
[5]	VE RC	RIFY the following indications for 2-FCV-7 DT PUMP DISCHARGE FLOW CONTRO	7-9, L:		
	Α.	Green Light OFF at 2-HS-77-9A, RCDT CIV-ØA IN CNTMT.	PMPS TO TDCT		
	В.	Red Light ON at 2-HS-77-9A, RCDT PM CIV-ØA IN CNTMT.	PS TO TDCT		
	C.	Green Light OFF at CISP 2-XX-55-6F, W FCV-77-9	/indow 93,		
	D.	Red Light ON at CISP 2-XX-55-6F, Winc FCV-77-9.	łow 93,		
	E.	2-FCV-77-9, RCDT PUMP DISCHARGE CONTROL OPEN (locally).	FLOW		

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	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 56 of 218
	Data	Pacl	cage: Page of	Date
6.3	2-FC Fund	V-77 ctiona	-9, RCDT PUMP DISCHARGE FLOW CON al Test (continued)	TROL,
	[6]	PL/ CIV	ACE 2-HS-77-9A, RCDT PMPS TO TDCT /-ØA IN CNTMT, in the CLOSE position, AN	ID
		VE	RIFY:	
		A.	Green Light ON at 2-HS-77-9A, RCDT PN CIV-ØA IN CNTMT.	
		В.	Red Light OFF at 2-HS-77-9A, RCDT PMI CIV-ØA IN CNTMT.	PS TO TDCT
		C.	Green Light ON at CISP 2-XX-55-6F, Wine FCV-77-9.	dow 93,
		D.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-9.	ow 93,
		E.	2-FCV-77-9, RCDT PUMP DISCHARGE F CONTROL CLOSES (locally).	
	[7]	VE RC	RIFY the light status at 2-HS-77-9C, DT PUMP DISCH VLV FLOW CONTROL, o	on 2-L-10:
3		Α.	Green Light OFF	
		В.	Red Light OFF	
	[8]	EN 2-X	SURE Annunciator Window 148-C, ACR PN A-55-6F, is CLEAR.	IL 2-L-11B, at
	[9]	PL/ RC to	ACE Transfer Switch 2-XS-77-9, DT PMPS DISCH TO TDCT IN CNTMT, on the AUX position, AND	2-L-11B
		VE	RIFY:	
		Α.	Green Light ON at 2-HS-77-9C, RCDT PL FLOW CONTROL, RCDT PMPS DISCH 1	IMP DISCH VLV TO TDCT.
		В.	Red Light OFF at 2-HS-77-9C, RCDT PUI FLOW CONTROL.	MP DISCH VLV
		С.	Green Light OFF at 2-HS-77-9A, RCDT P CIV-ØA IN CNTMT	MPS TO TDCT

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Data Pacl		ckage: Page of	Date _	
5.3	2-FCV-7 Functio	7-9, RCDT PUMP DISCHARGE FLOW CO nal Test (continued)	NTROL,	
	D	. Red Light OFF at 2-HS-77-9A, RCDT PN CIV-ØA IN CNTMT.	IPS TO TDCT	
	Ē	. Green Light OFF at CISP 2-XX-55-6F, W FCV-77-9.	/indow 93, 	
	F	. Red Light OFF at CISP 2-XX-55-6F, Win FCV-77-9.	dow 93, 	
	G	. Annunciator Window 148-C, ACR PNL 2 ALARMS.	-L-11B, –	
	[10] H C	OLD 2-HS-77-9A, RCDT PMPS TO TDCT IV-ØA IN CNTMT, in the OPEN position, AN	ID	
	v	ERIFY:		
	А	. Green Light ON at 2-HS-77-9C, RCDT P FLOW CONTROL, RCDT PMPS DISCH	UMP DISCH VLV TO TDCT	
	В	. Red Light OFF at 2-HS-77-9C, RCDT PL FLOW CONTROL.	JMP DISCH VLV	
	C	. 2-FCV-77-9, RCDT PUMP DISCHARGE CONTROL CLOSED (locallỳ).	FLOW	
	[10.1] RELEASE 2-HS-77-9A, RCDT PMPS 1 IN CNTMT, to the A AUTO position.	O TDCT CIV-ØA	
	[11] P F to	LACE 2-HS-77-9C, RCDT PUMP DISCH VI LOW CONTROL, RCDT PMPS DISCH TO the OPEN position, AND	_V TDCT,	
	v	ERIFY:		
	А	. Green Light OFF	_	
	В	. Red Light ON	_	
	С	. 2-FCV-77-9, RCDT PUMP DISCHARGE CONTROL OPEN (locally).	FLOW	

•	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 58 of 218
	Data	Pac	cage: Page of	Date
6.3	2-FC Func	V-77 tiona	-9, RCDT PUMP DISCHARGE FLOW CON al Test (continued)	TROL,
	[12]	PL/ CN	ACE 2-HS-77-9A, RCDT PMPS TO TDCT C TMT, in the CLOSE position, AND	CIV-ØA IN
		VE DIS	RIFY on 2-L-10 that 2-FCV-77-9, RCDT PU CHARGE FLOW CONTROL remains OPE	MP N
	[13]	PL/ FL to t	ACE 2-HS-77-9C, RCDT PUMP DISCH VLV OW CONTROL, RCDT PMPS DISCH TO T he CLOSE position, AND	/ DCT,
		VE	RIFY:	
		Α.	Green Light ON	
		Β.	Red Light OFF	
		C.	2-FCV-77-9, RCDT PUMP DISCHARGE F CONTROL CLOSES (locally).	FLOW .
	[14]	PL/ TC	ACE Transfer Switch 2-XS-77-9, RCDT PM DTDCT, to the NOR position, AND	PS DISCH
		VE	RIFY:	
		Α.	Green Light ÓN at 2-HS-77-9A, RCDT PN CIV-ØA IN CNTMT.	IPS TO TDCT
		В.	Red Light OFF at 2-HS-77-9A, RCDT PMI CIV-ØA IN CNTMT.	PS TO TDCT
		C.	Green Light ON at CISP 2-XX-55-6F, Wine FCV-77-9.	dow 93,
		D.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-9.	ow 93,
		E.	Green Light OFF at 2-HS-77-9C, RCDT P VLV FLOW CONTROL, RCDT PMPS DIS TDCT.	UMP DISCH CHARGE TO
		F.	Red Light OFF at 2-HS-77-9C, RCDT PUI FLOW CONTROL	MP DISCH VLV
		G.	Annunciator Window 148-C, ACR PNL 2-L	11B, CLEARS.

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	Data	Pack	age: Page of	Date
6.3	2-FC Func	/-77- tiona	9, RCDT PUMP DISCHARGE FLOW CON al Test (continued)	TROL,
	[15]	PL/ CO OP	ACE 2-HS-77-9C, RCDT PUMP DISCH VLV NTROL, RCDT PMPS DISCHARGE TO TD EN position, AND	/ FLOW ICT, to the
		VEI DIS	RIFY at 2-M-15 that 2-FCV-77-9, RCDT PU CHARGE FLOW CONTROL remains CLO	MP SED
	[16]	PL/ CN DIS	ACE 2-HS-77-9A, RCDT PMPS TO TDCT (TMT, in the OPEN position until 2-FCV-77-9 CHARGE FLOW CONTROL is FULLY OPI	CIV-ØA IN 9, RCDT PUMP EN, THEN
		RE CN	LEASE 2-HS-77-9A, RCDT PMPS TO TDC TMT to the A AUTO position.	T CIV-ØA IN
	[17]	PL/ CO CLO	ACE 2-HS-77-9C, RCDT PUMP DISCH VLV NTROL, RCDT PMP DISCHARGE TO TDC DSE position, AND	/ FLOW CT, to the
		VE DIS	RIFY at 2-M-15 that 2-FCV-77-9, RCDT PU CHARGE FLOW CONTROL remains OPE	MP N
			NOTE	
The f	following TROL cl	step oses	es will verify that 2-FCV-77-9, RCDT PUMP on a Phase A Containment Isolation Signa	DISCHARGE FLOW I.
	[18]	PL/ OF	ACE TS-3 at Terminal Board TB 610 in Pan F position, AND	el 2-R-51 to the
		VE	RIFY	
		Α.	Green Light ON at CISP 2-XX-55-6F. Win FCV-77-9 (ACC CRIT).	dow 93,
		В.	Red Light OFF at CISP 2-XX-55-6F, Wind FCV-77-9 (ACC CRIT).	ow 93,
		C.	2-FCV-77-9, RCDT PUMP DISCHARGE I CONTROL CLOSED (locally) (ACC CRIT	FLOW

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WBN Unit 2			Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 60 of 218	
	Data	Pack	age: Page of	Date	
6.3	2-FC Func	V-77- tiona	9, RCDT PUMP DISCHARGE FLOW CO Il Test (continued)	NTROL,	
	[19]	PLA ON	CE TS-3 at Terminal Board TB 610 in Pa position, AND	nel 2-R-51 to the	
		VEF	RIFY		
		A.	Green Light ON at CISP 2-XX-55-6F. Wi FCV-77-9 (ACC CRIT).	ndow 93,	
		В.	Red Light OFF at CISP 2-XX-55-6F, Win FCV-77-9 (ACC CRIT).	dow 93, 	
		C.	2-FCV-77-9, RCDT PUMP DISCHARGE CONTROL CLOSED (locally) (ACC CRI	FLOW T)	
	[20]	PLA CN1 DIS	CE 2-HS-77-9A, RCDT PMPS TO TDCT IMT, in the OPEN position until 2-FCV-77 CHARGE FLOW CONTROL is FULLY OF	CIV-ØA IN -9, RCDT PUMP PEN, THEN	
		REL CN1	_EASE 2-HS-77-9A, RCDT PMPS TO TD IMT to the A AUTO position.	CT CIV-ØA IN	
	[21]	CLC TO :	DSE 2-ISV-32-3540, CONTROL AIR ISOL 2-FCV-77-9.	ATION VALVE	
	[22]	OPE COI	EN petcock to vent control air at 2-PREG- NTROL AIR PRESSURE REG FOR 2-FC	077-0009, V-077-0009	
	[2	2.1]	VERIFY 2-FCV-77-9, RCDT PUMP DIS CONTROL CLOSES (ACC CRIT).	CHARGE FLOW	
	[23]	CLC PRE	DSE petcock at 2-PREG-077-0009, CONT ESSURE REG FOR 2-FCV-077-0009.	ROL AIR	
	[24]	OPE 2-F(EN 2-ISV-32-3540, CONTROL AIR ISOLA CV-77-9.	TION VALVE TO	
	[2	4.1]	VERIFY 2-FCV-77-9, RCDT PUMP DIS	CHARGE FLOW	

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	Data Pac	kage: Page of	Date
6.3 2-FCV- Function		-9, RCDT PUMP DISCHARGE FLOW CO al Test (continued)	NTROL,
		NOTES	

- 1) The following steps require valve stroke timing locally at the valve and remotely at the Control Switch in both the Open and Closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
 - [25] **PLACE** 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT, in the OPEN position until 2-FCV-77-9, RCDT PUMP DISCHARGE FLOW CONTROL is FULLY OPEN, **THEN**

RELEASE 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT to the A AUTO position.

[25.1] **RECORD** remote opening time at 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT.

M&TE _____ Cal Due Date _____

seconds

[25.2] **RECORD** local opening time at 2-FCV-77-9, RCDT PUMP DISCHARGE FLOW CONTROL.

M&TE _____ Cal Due Date

seconds

[26] **PLACE** 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT, in the CLOSE position.

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·	Data Paci	cage: Page of	Date	
6.3	2-FCV-77 Function	•9, RCDT PUMP DISCHARGE FLOW CO al Test (continued)	NTROL,	
	[26.1]	RECORD remote closing time at 2-HS- PMPS TO TDCT CIV-ØA IN CNTMT. (<i>J</i>	77-9A, RCDT ACC CRIT)	
		M&TE	Cal Due Date	
		seconds	(≤ 10 seconds)	
	[26.2]	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL	7-9, RCDT (ACC CRIT)	
	[26.2]	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL	7-9, RCDT (ACC CRIT)	
	[26.2]	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL M&TE	7-9, RCDT (ACC CRIT) Cal Due Date	
	[26.2]	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL M&TEseconds	7-9, RCDT (ACC CRIT) Cal Due Date (≤ 10 seconds)	
	[26.2] [27] RE Ter	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL M&TE	77-9, RCDT (ACC CRIT) Cal Due Date (≤ 10 seconds) 1 TS-3, from n Panel 2-R-51	
	[26.2] [27] RE Ter and	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL M&TE	77-9, RCDT (ACC CRIT) Cal Due Date (≤ 10 seconds) J TS-3, from n Panel 2-R-51 1s	
	[26.2] [27] RE Ter and	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL M&TEseconds MOVE the jumper with test switch, labeled minal Point 4 on Terminal Board TB 610 in Wire WCJ4.	77-9, RCDT (ACC CRIT) Cal Due Date (≤ 10 seconds) J TS-3, from n Panel 2-R-51 	
	[26.2] [27] RE Ter and [28] LA 610	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL M&TE	77-9, RCDT (ACC CRIT) Cal Due Date (≤ 10 seconds) 1 TS-3, from n Panel 2-R-51 1s C\ rminal Board TB	.t
	[26.2] [27] RE Ter and [28] LA 610	RECORD local closing time at 2-FCV-7 PUMP DISCHARGE FLOW CONTROL M&TE	77-9, RCDT (ACC CRIT) Cal Due Date (≤ 10 seconds) 1 TS-3, from n Panel 2-R-51 Ts minal Board TB 1s	.t .t .t

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6.4 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL, Functional Test

1) This section will test 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL from its control stations and verify operability of all interlocks, indicating lights, and annunciators.

NOTES

- 2) Reference drawing 2-45W600-77-2, valve location 713/A12W
 - [1] **VERIFY** prerequisites listed in Section 4.0 for Subsection 6.4 have been completed.
 - [2] **PERFORM** the following prior to beginning this Subsection:
 - [2.1] **LIFT** Wire WBN1 from Terminal Point 3 on Terminal Board TB 610 in Panel 2-R-48.

1st

CV

NOTE

TS-4 will simulate a Phase A Containment Isolation Signal for 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL, when placed to the OFF position.

[2.2] **INSTALL** a jumper with test switch in the ON position, labeled TS-4, between Wire WBN1 and Terminal Point 4 on Terminal Board TB 610 in Panel 2-R-48.

1st

CV

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6.4	2-FC Func	2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL, Functional Test (continued)							
	[3] ENSURE that 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL, is CLOSED:								
		A.	Green Light ON at 2-HS-77-10A, RCDT P CIV-ØA OUT CNTMT on 2-M-15.	MPS TO TDCT					
		В.	Red Light OFF at 2-HS-77-10A, RCDT PM CIV-ØA OUT CNTMT.	IPS TO TDCT					
		C.	Green Light ON at Containment Isolation (CISP) 2-XX-55-6E, Window 93, FCV-77-	Status Panel 10					
		D.	Red Light OFF at CISP 2-XX-55-6E, Wind FCV-77-10.	low 93,					
		E.	By local verification at 2-FCV-77-10, RCD DISCHARGE FLOW CONTROL, 713/A12	T PUMP W					
	[4]	PL/ CIV	ACE 2-HS-77-10A, RCDT PMPS TO TDCT $// \square$ A OUT CNTMT in the OPEN position, A	ND					
		VE	RIFY:						
		A.	Green Light OFF at 2-HS-77-10A, RCDT CIV-ØA OUT CNTMT.	PMPS TO TDCT					
	·	В.	Red Light ON at 2-HS-77-10A, RCDT PM CIV-ØA OUT CNTMT.	PS TO TDCT					
		C.	Green Light OFF at CISP 2-XX-55-6E, Wi FCV-77-10.	ndow 93,					
		D.	Red Light ON at CISP 2-XX-55-6E, Windo FCV-77-10.	ow 93,					
		E.	2-FCV-77-10, RCDT PUMP DISCHARGE CONTROL OPEN (locally).	FLOW					

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	Data	Pack	age: Page of	Date			
6.4	2-FC Func	V-77 tiona	7-10, RCDT PUMP DISCHARGE FLOW CONTROL, nal Test (continued)				
	[5]	PL/ CI∖	ACE 2-HS-77-10A, RCDT PMPS TO TDCT /-ØA OUT CNTMT in the CLOSE position, A	AND			
•		VE	RIFY:				
		Α.	Green Light ON at 2-HS-77-10A, RCDT P CIV-ØA OUT CNTMT	MPS TO TDCT			
		B.	Red Light OFF at 2-HS-77-10A, RCDT PN CIV-ØA OUT CNTMT.	IPS TO TDCT			
		C.	Green Light ON at CISP 2-XX-55-6E, Window 93, FCV-77-10.				
		D.	Red Light OFF at CXSP 2-XX-55-6E, Window 93, FCV-77-10.				
		E.	2-FCV-77-10, RCDT PUMP DISCHARGE CONTROL CLOSES (locally).	FLOW			
	[6]	PL/ CN	ACE 2-HS-77-10A, RCDT PMPS TO TDCT TMT in the OPEN position.	CIV-ØA OUT			
	[6	.1]	VERIFY 2-FCV-77-10, RCDT PUMP DIS FLOW CONTROL is OPEN.	CHARGE			
1			NOTE				
The f	The following steps will verify that 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL closes on a Phase A Containment Isolation Signal.						
	[7] PL Of		ACE TS-4 at Terminal Board TB 610 in Pan F position, AND	el 2-R-48 to the			
		VE	RIFY				
		Α.	Green Light ON at CISP 2-XX-55-6E. Win FCV-77-10 (ACC CRIT).	dow 93,			

J

- B. Red Light OFF at CISP 2-XX-55-6E, Window 93, FCV-77-10 (ACC CRIT).
- C. 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL CLOSED (locally) (ACC CRIT).

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6.4	2-FC Func	V-77- tiona	-10, RCDT PUMP DISCHARGE FLOW CO al Test (continued)	NTROL,	
	[8]	PL/ ON	ACE TS-4 at Terminal Board TB 610 in Pan position, AND	el 2-R-48 to the	
		VE	RIFY		
		A.	Green Light ON at CISP 2-XX-55-6E. Wine FCV-77-10 (ACC CRIT).	dow 93,	
		В.	Red Light OFF at CISP 2-XX-55-6E, Wind FCV-77-10 (ACC CRIT).	ow 93,	
		С.	2-FCV-77-10, RCDT PUMP DISCHARGE CONTROL CLOSED (locally) (ACC CRIT)	FLOW	
t.	[9]	PL/ CN	ACE 2-HS-77-10A, RCDT PMPS TO TDCT TMT in the OPEN position.	CIV-ØA OUT	
	[9	.1]	VERIFY 2-FCV-77-10, RCDT PUMP DIS FLOW CONTROL is OPEN.	CHARGE	
	[10]	CLO TO	OSE 2-ISV-32-3175, CONTROL AIR ISOLA 2-FCV-77-10.	TION VALVE	
	[11]	OP CO	EN petcock to vent control air at 2-PREG-77 NTROL AIR PRESSURE REG FOR 2-FCV	7-10, -77-10.	,
	[1	1.1]	VERIFY 2-FCV-77-10, RCDT PUMP DIS FLOW CONTROL CLOSES (ACC CRIT)	CHARGE	
	[12]	CL PR	OSE petcock at 2-PREG-77-10, CONTROL ESSURE REG FOR 2-FCV-77-10.	AIR	
	[13]	OP 2-F	EN 2-ISV-32-3175, CONTROL AIR ISOLAT CV-77-10.	ION VALVE TO	
	[1	3.1]	VERIFY 2-FCV-77-10, RCDT PUMP DIS FLOW CONTROL OPENS.	CHARGE	

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6.4 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL, Functional Test (continued)

NOTES The following steps require valve stroke timing locally at the valve and remotely at the Control Switch in both the Open and Closed positions. Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.

- [14] **PLACE** 2-HS-77-10A, RCDT PMPS TO TDCT CIV-ØA OUT CNTMT in the CLOSE position.
 - [14.1] **RECORD** remote closing time at 2-HS-77-10A, RCDT PMPS TO TDCT CIV-ØA OUT CNTMT. (ACC CRIT)

	M&TE	Cal Due Date	
	seconds	(≤ 10 seconds)	
[14.2]	RECORD local closing time at 2-FC PUMP DISCHARGE FLOW CONTR	V-77-10, RCDT ROL. (ACC CRIT)	
	M&TE	Cal Due Date	
	seconds	(≤ 10 seconds)	

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4	2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL, Functional Test (continued)								
	[15]	PLA CNT DIS	CE 2-HS-77-10A, RCDT PMPS TO TDC MT in the OPEN position until 2-FCV-77- CHARGE FLOW CONTROL is FULLY OF	T CIV-ØA OUT 10, RCDT PUMP PEN, THEN					
		REL OUT	EASE 2-HS-77-10A, RCDT PMPS TO TI CNTMT to the A-P AUTO position.	DCT CIV-ØA					
	[1	5.1]	RECORD remote opening time at 2-HS PMPS TO TDCT CIV-ØA OUT CNTMT	-77-10A, RCDT					
			M&TE	Cal Due Date					
-			· · · · · · · · · · · · · · · · · · ·	seconds					
	[1	5.2]	RECORD local opening time at 2-FCV- PUMP DISCHARGE FLOW CONTROL	77-10, RCDT					
			M&TE	Cal Due Date					
			· · · · · · · · · · · · · · · · · · ·	seconds					
	[16]	PLA CN1	CE 2-HS-77-10A, RCDT PMPS TO TDC IMT in the CLOSE position, AND	T CIV-ØA OUT					
		VEF COI	RIFY 2-FCV-77-10, RCDT PUMP DISCHANTROL is CLOSED.	RGE FLOW					
	[17]	REN Terr and	IOVE the jumper with test switch, labeled ninal Point 4 on Terminal Board TB 610 in Wire WBN1.	TS-4, from Panel 2-R-48					
					1st				
					CV				
	[18]	LAN 610	ID Wire WBN1 at Terminal Point 3 on Ter in Panel 2-R-48	minal Board TB					
		010			1st				
					CV				

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6.5 2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL Functional Test

1) This section will test 2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL from its control stations and verify operability of all interlocks, indicating lights, and annunciators.

NOTES

- 2) Reference drawing 2-45W600-77-2, valve location 713/A12W
 - [1] **VERIFY** prerequisites listed in Section 4.0 for Subsection 6.5 have been completed.
 - [2] **PERFORM** the following prior to beginning this Subsection:
 - [2.1] **LIFT** Wire WCH2 from Terminal Point 7 on Terminal Board TB 610 in Panel 2-R-48.

1st

CV

NOTE

TS-5 will simulate a Phase A Containment Isolation Signal for 2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL when placed to the OFF position.

[2.2] **INSTALL** a jumper with test switch in the ON position, labeled TS-5, between Wire WCH2 and Terminal Point 8 on Terminal Board TB 610 in Panel 2-R-48.

1st

CV

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	Data	Pac	kage: Page of	D	ate
6.5	2-FC Func	V-77 tiona	-17, RCDT TO GAS ANALYZER FLOW C al Test (continued)	ONTROL	
	[3]	EN FL	SURE that 2-FCV-77-17, RCDT TO GAS A OW CONTROL is CLOSED:	NALYZER	
		A.	Green Light ON at 2-HS-77-17, RCDT TO CIV-ØA OUT CNTMT, on 2-M-15.	D GAS ANAL	
		В.	Red Light OFF at 2-HS-77-17, RCDT TO CIV-ØA OUT CNTMT.	GAS ANAL	
		С.	Green Light ON at Containment Isolation (CISP) 2-XX-55-6E, Window 94, FCV-77	Status Panel -17	
		D.	Red Light OFF at CISP 2-XX-55-6E, Win FCV-77-17.	dow 94,	
		E.	By local verification at 2-FCV-77-17, RCE ANALYZER FLOW CONTROL, 713/A12	DT TO GAS W.	
	[4]	PL CI\	ACE 2-HS-77-17, RCDT TO GAS ANAL /-ØA OUT CNTMT in the OPEN position, A	AND	
		VE	RIFY:	•	
)	A.	Green Light OFF at 2-HS-77-17, RCDT 1 CIV-ØA OUT CNTMT.	O GAS ANAL	
		В.	Red Light ON at 2-HS-77-17, RCDT TO CIV-ØA OUT CNTMT.	GAS ANAL	
		C.	Green Light OFF at CISP 2-XX-55-6E, W FCV-77-17.	/indow 94,	
		D.	Red Light ON at CISP 2-XX-55-6E, Wind FCV-77-17.	low 94,	
		E.	2-FCV-77-17, RCDT TO GAS ANALYZE CONTROL OPEN (locally).	R FLOW	

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6.5	2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL Functional Test (continued)						
	[5]	PL/ CIV	ACE 2-HS-77-17, RCDT TO GAS ANAL /-ØA OUT CNTMT in the CLOSE position, A	ND			
		VEI	RIFY:				
		A.	Green Light ON at 2-HS-77-17, RCDT TO CIV-ØA OUT CNTMT.	GAS ANAL			
		B.	Red Light OFF at 2-HS-77-17, RCDT TO CIV-ØA OUT CNTMT.	GAS ANAL			
		C.	Green Light ON at CISP 2-XX-55-6E, Win FCV-77-17.	dow 94,			
	D.		Red Light OFF at CISP 2-XX-55-6E, .Wind FCV-77-17.	dow 94,			
	E.		2-FCV-77-17, RCDT TO GAS ANALYZER CONTROL CLOSES (locally).	FLOW			
	[6] PLACE 2-HS-77-17, RCDT TO GAS ANAL CIV-ØA OUT CNTMT in the OPEN position, AND						
	、	VE CO	RIFY 2-FCV-77-17, RCDT TO GAS ANALY NTROL is OPEN.	ZER FLOW			

NOTE

The following steps will verify that 2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL closes on a Phase A Containment Isolation Signal.

[7] **PLACE** TS-5 at Terminal Board TB 610 in Panel 2-R-48 to the OFF position, **AND**

VERIFY

- A. Green Light ON at CISP 2-XX-55-6E. Window 94, FCV-77-17 (ACC CRIT).
- B. Red Light OFF at CISP 2-XX-55-6E, Window 94, FCV-77-17 (ACC CRIT).
- C. 2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL CLOSED (locally) (ACC CRIT).

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6.5	2-FC\ Funct	/-77- tiona	17, RCDT TO GAS ANALYZER FLOW C al Test (continued)	ONTROL	
	[8]	PL/ ON	ACE TS-5 at Terminal Board TB 610 in Pa position, AND	nel 2-R-48 to the	
		VE	RIFY		
		A.	Green Light ON at CISP 2-XX-55-6E. Wi FCV-77-17 (ACC CRIT).	ndow 94, -	
		В.	Red Light OFF at CISP 2-XX-55-6E, Win FCV-77-17 (ACC CRIT).	dow 94, -	
		C.	2-FCV-77-17, RCDT TO GAS ANALYZE CONTROL CLOSED (locally) (ACC CRI	R FLOW T)	
-	[9]	PL/ CN	ACE 2-HS-77-17, RCDT TO GAS ANAL C TMT in the OPEN position, AND	IV-ØA OUT	
		VE CO	RIFY 2-FCV-77-17, RCDT TO GAS ANAL [®] NTROL is OPEN.	YZER FLOW	
	[10]	CLO TO	OSE 2-ISV-32-3183, CONTROL AIR ISOL 2-FCV-77-17.	ATION VALVE	
	[11]	OP CO TO	EN petcock to vent control air at 2-PREG- NTROL AIR PRESSURE REG FOR 2-FC GAS ANALYZER FLOW CONTROL	77-17, V-77-17, RCDT -	
	[11	1.1]	VERIFY 2-FCV-77-17, RCDT TO GAS FLOW CONTROL CLOSES (ACC CRI	ANALYZER T).	
	[12]	CL PR	OSE petcock at 2-PREG-77-17, CONTRO ESSURE REG FOR 2-FCV-77-17.	L AIR	
	[13]	OP 2-F	EN 2-ISV-32-3183, CONTROL AIR ISOLA CV-77-17	TION VALVE TO	
	[1:	3.1]	VERIFY 2-FCV-77-17, RCDT TO GAS	ANALYZER	

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6.5 2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL Functional Test (continued)

NOTES The following steps require valve stroke timing locally at the valve and remotely at the Control Switch in both the Open and Closed positions. Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.

- [14] **PLACE** 2-HS-77-17, RCDT TO GAS ANAL CIV-ØA OUT CNTMT, in the CLOSE position.
 - [14.1] **RECORD** remote closing time at 2-HS-77-17, RCDT TO GAS ANAL CIV-ØA OUT CNTMT. (ACC CRIT)

seconds

(≤ 10 seconds)

[14.2] **RECORD** local closing time at 2-FCV-77-17, RCDT TO GAS ANALYZER FLOW CONTROL. (ACC CRIT)

M&TE Cal Due Date

seconds $(\leq 10 \text{ seconds})$

	WBN Unit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 74 of 218	
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5	2-FCV Funct	/-77- [.] iona	17, RCDT TO GAS ANALYZER FLOW CO I Test (continued)	ONTROL	
	[15]	PLA CN1	CE 2-HS-77-17, RCDT TO GAS ANAL CI IMT in the OPEN position.	V-ØA OUT	
	[15	5.1]	RECORD remote opening time at 2-HS- TO GAS ANAL CIV-ØA OUT CNTMT.	77-17, RCDT	
			M&TE	Cal Due Date	
			·	seconds	
	[15	5.2]	RECORD local opening time at 2-FCV-7 GAS ANALYZER FLOW CONTROL.	7-17, RCDT TO	
			M&TE	Cal Due Date	
				seconds	
	[16]	PL/ CN ⁻	ACE 2-HS-77-17, RCDT TO GAS ANAL CI TMT in the CLOSE position, AND	IV-ØA OUT	
	,	VEF Coi	RIFY 2-FCV-77-17, RCDT TO GAS ANALY NTROL is CLOSED.	ZER FLOW	
	[17]	REN Terr	MOVE the jumper with test switch, labeled minal Point 8 on Terminal Board TB 610 in Wire WCH2	TS-5, from Panel 2-R-48	
		anu			1st
					CV
	[18]	LAN 610	ND Wire WCH2 at Terminal Point 7 on Terminal Point 8 on Terminal Point 7 on Terminal P	minal Board TB	
		010		· · ·	1st
					CV

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6.6 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL Functional Test

- NOTES
 1) This section will test 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL from its control stations and verify operability of all interlocks, indicating lights, and annunciators.
- 2) Reference drawing 2-45W600-77-2, valve location 713/A12W
 - [1] **VERIFY** prerequisites listed in Section 4.0 for Subsection 6.6 have been completed.
 - [2] **PERFORM** the following prior to beginning this Subsection:
 - [2.1] **LIFT** Wire WBS2 from Terminal Point 1 on Terminal Board TB 610 in Panel 2-R-48.

1st

CV

NOTE

TS-6 will simulate a Phase A Containment Isolation Signal for 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL when placed to the OFF position.

[2.2] **INSTALL** a jumper with test switch in the ON position, labeled TS-6, between Wire WBS2 and Terminal Point 2 on Terminal Board TB 610 in Panel 2-R-48.

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6.6	2-FC Test	V-77- (con	-19, RCDT TO VENT HDR FLOW CONTRO tinued)	DL Functional		
	[3]	EN FL	SURE that 2-FCV-77-19, RCDT TO VENT I OW CONTROL is CLOSED:	HDR		
		A.	Green Light ON at 2-HS-77-19, RCDT TO HDR CIV-ØA OUT CNTMT, on 2-M-15.	WDS VENT		
		В.	Red Light OFF at 2-HS-77-19, RCDT TO HDR CIV-ØA OUT CNTMT.	WDS VENT		
		C.	Green Light ON at Containment Isolation (CISP) 2-XX-55-6E, Window 95, FCV-77-	Status Panel 19.		
		D.	Red Light OFF at CISP 2-M-55-6E, Windo FCV-77-19.	ow 95,		
		E.	By local verification at 2-FCV-77-19, RCD HDR FLOW CONTROL, 713/A12W.	T TO VENT		
	[4]	PL/ OU TO	ACE 2-HS-77-19, RCDT TO WDS VENT HI IT CNTMT in the OPEN position until 2-FCV VENT HDR FLOW CONTROL is FULLY O	DR CIV-ØA ⁄-77-19, RCDT PEN, THEN		
		RE OU	LEASE 2-HS-77-19, RCDT TO WDS VENT	HDR CIV-ØA		

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6.6	2-FCV Test (e	/-77- conf	19, RCDT TO VENT HDR FLOW CONTRO	DL Functional	
	[5]	VEF RCI	RIFY the following indications for 2-FCV-77 DT TO VENT HDR FLOW CONTROL:	-19,	
		А.	Green Light OFF at 2-HS-77-19, RCDT T HDR CIV-ØA OUT CNTMT.	O WDS VENT	
		В.	Red Light ON at 2-HS-77-19, RCDT TO V CIV-ØA OUT CNTMT.	VDS VENT HDR	
		C.	Green Light OFF at CISP 2-XX-55-6E, Wi FCV-77-19.	ndow 95,	
		D.	Red Light ON at CISP 2-XX-55-6E, Windo FCV-77-19.	ow 95,	(<u> </u>
		Е. ⁻	2-FCV-77-19, RCDT TO VENT HDR FLO OPEN (locally).	W CONTROL	
	[6]	PL/ OU ⁻	ACE 2-HS-77-19, RCDT TO WDS VENT H T CNTMT in the CLOSE position, AND	DR CIV-ØA	
		VEF	RIFY:		
		A.	Green Light ON at 2-HS-77-19, RCDT TC HDR CIV-ØA OUT CNTMT.	WDS VENT	
		B.	Red Light OFF at 2-HS-77-19, RCDT TO HDR CIV-ØA OUT CNTMT.	WDS VENT	
		C.	Green Light ON at CISP 2-XX-55-6E, Wir FCV-77-19.	dow 95,	
		D.	Red Light OFF at CISP 2-XX-55-6E, Wind FCV-77-19.	łow 95,	
		E.	2-FCV-77-19, RCDT TO VENT HDR FLO OPEN CLOSES (locally).	W CONTROL	
					5

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6.6 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL Functional Test (continued)

[7] PLACE 2-HS-77-19, RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT in the OPEN position until 2-FCV-077-0019-A RCDT TO VENT HDR FLOW CONTROL OPEN is FULLY OPEN, THEN

RELEASE 2-HS-77-19, RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT to the A AUTO position.

NOTE

The following steps will verify that 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL OPEN closes on a Phase A Containment Isolation Signal.

[8] **PLACE** TS-6 at Terminal Board TB 610 in Panel 2-R-48 to the OFF position, **AND**

VERIFY

- A. Green Light ON at CISP 2-XX-55-6E. Window 95, FCV-77-19 (ACC CRIT).
- B. Red Light OFF at CISP 2-XX-55-6E, Window 95, FCV-77-19 (ACC CRIT).
- C. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL CLOSED (locally) (ACC CRIT).

)

[9] **PLACE** TS-6 at Terminal Board TB 610 in Panel 2-R-48 to the ON position, **AND**

VERIFY

- A. Green Light ON at CISP 2-XX-55-6E. Window 95, FCV-77-19 (ACC CRIT).
- B. Red Light OFF at CISP 2-XX-55-6E, Window 95, FCV-77-19 (ACC CRIT).
- C. 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL CLOSED (locally) (ACC CRIT).

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6.6	2-FCV- Test (c	77-19, RCDT TO VENT HDR FLOW CONTR ontinued)	OL Functional	
	[10] (PLACE 2-HS-77-19, RCDT TO WDS VENT H OUT CNTMT in the OPEN position until 2-FC TO VENT HDR FLOW CONTROL is FULLY (IDR CIV-ØA V-77-19, RCDT DPEN, THEN	
		RELEASE 2-HS-77-19, RCDT TO WDS VEN OUT CNTMT to the A AUTO position.	T HDR CIV-ØA	
	[11]	CLOSE 2-ISV-32-3187, CONTROL AIR ISOL TO 2-FCV-77-19.	ATION VALVE	
	[12]	OPEN petcock to vent control air at 2-PREG- CONTROL AIR PRESSURE REG FOR 2-FC ^V	77-19, V-77-19	
	[12.	1] VERIFY 2-FCV-77-19, RCDT TO VENT CONTROL CLOSES (ACC CRIT).	HDR FLOW	
	[13] (CLOSE petcock at 2-PREG-77-19, CONTRO PRESSURE REG FOR 2-FCV-77-19.	L AIR	
	[14]	OPEN 2-ISV-32-3187, CONTROL AIR ISOLA 2-FCV-77-19.	TION VALVE TO	
	[14.	1] VERIFY 2-FCV-77-19, RCDT TO VENT	HDR FLOW	

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6.6	2-FCV-77 Test (con	-19, RCDT TO VENT HDR FLOW CONTR tinued)	OL Functional
		NOTES	
1)	The following Control Swite	steps require valve stroke timing locally a hin bath the Open and Closed positions.	t the valve and remotely at the
2)	Local timing to valve stem m with the posito based on the	begins with the initiating signal and is conc ovement. Remote timing begins with the in ion indication lights status change. Stroke movement to the safety function final pos	luded with the completion of hitiating signal and is concluded time acceptance criteria will be tion of the valve.
	[15] PL/ OU TO	ACE 2-HS-77-19, RCDT TO WDS VENT H T CNTMT, in the OPEN position until 2-FC VENT HDR FLOW CONTROL is FULLY (IDR CIV-ØA XV-77-19, RCDT OPEN, THEN
	RE OU	LEASE 2-HS-77-19, RCDT TO WDS VEN T CNTMT to the A AUTO position.	T HDR CIV-ØA
	[15.1]	RECORD remote opening time at 2-HS TO WDS VENT HDR CIV-ØA OUT CN	-77-19, RCDT TMT.
		M&TE	Cal Due Date
			seconds

C

[15.2] **RECORD** local opening time at 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL.

seconds

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6.6	2-FCV-77 Test (con	-19, RCDT TO VENT HDR FLOW CON tinued)	ITROL Functional	
	[16] PL OU	ACE 2-HS-77-19, RCDT TO WDS VEN IT CNTMT, in the CLOSE position.	IT HDR CIV-ØA	
	[16.1]	RECORD remote closing time at 2-F WDS VENT HDR CIV-ØA OUT CN	IS-77-19, RCDT TO IMT. (ACC CRIT)	
		M&TE	Cal Due Date	
		seconds	(≤ 10 seconds)	
	[16.2]	RECORD local closing time at 2-FC VENT HDR FLOW CONTROL. (AC	– V-77-19, RCDT TO C CRIT)	
		M&TE	Cal Due Date	
·		seconds	(≤ 10 seconds)	
	[17] RE Ter and	MOVE the jumper with test switch, labe rminal Point 2 on Terminal Board TB 61 d Wire WBS2	eled TS-6, from 0 in Panel 2-R-48	
	un	, ,	-	1st
			-	CV
	[18] LA	ND Wire WBS2 at Terminal Point 1 on	Terminal Board TB	
	010		-	1st

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6.7 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL Functional Test

- NOTES
 This section will test 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL from its control stations and verify operability of all interlocks, indicating lights, and annunciators.
- 2) Reference drawing 2-45W600-77-2, valve location 713/A12W
 - [1] **VERIFY** prerequisites listed in section 4.0 for Subsection 6.7 have been completed.
 - [2] **PERFORM** the following prior to beginning this Subsection:
 - [2.1] **LIFT** Wire WBR2 from Terminal Point 1 on Terminal Board TB 611 in Panel 2-R-48.

1st

CV

NOTE

TS-7 will simulate a Phase A Containment Isolation Signal for 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL when placed to the OFF position.

[2.2] **INSTALL** a jumper with test switch in the ON position, labeled TS-7, between Wire WBR2 and Terminal Point 2 on Terminal Board TB 611 in Panel 2-R-48.

1st

CV

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6.7	2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL Functional Test (continued)						
	[3]	EN: FLC	LY · · · ·				
	·	A.	Green Light ON at 2-HS-77-20, N2 TO R OUT CNTMT, on 2-M-15.	CDT CIV-ØA			
		В.	Red Light OFF at 2-HS-77-20, N2 TO RC OUT CNTMT	CDT CIV-ØA			
		C.	Green Light ON at Containment Isolation (CISP) 2-XX-55-6E, Window 96, FCV-77	Status Panel -20.			
		D.	Red Light OFF at CISP 2-XX-55-6E, Win FCV-77-20.	dow 96,			
		E.	By local verification at 2-FCV-77-20, RCI FLOW CONTROL, 713/A12W.	DT N2 SUPPLY			
	[4]	PL/ the FL(ACE 2-HS-77-20, N2 TO RCDT CIV-ØA O OPEN position until 2-FCV-77-20, RCDT I DW CONTROL is FULLY OPEN, THEN	UT CNTMT in N2 SUPPLY			
	,	RE the	LEASE 2-HS-77-20, N2 TO RCDT CIV-ØA A AUTO position.	A OUT CNTMT to			
	[5]	VE I RC	7-20,				
		A.	Green Light OFF at 2-HS-77-20, N2 TO OUT CNTMT.	RCDT CIV-ØA			
		В.	Red Light ON at 2-HS-77-20, N2 TO RCI CNTMT.	DT CIV-ØA OUT			
		C.	Green Light OFF at CISP 2-XX-55-6E, W FCV-77-20.	/indow 96,			
		D.	Red Light ON at CISP 2-XX-55-6E, Winc FCV-77-20.	low 96,			
		E.	2-FCV-77-20, RCDT N2 SUPPLY FLOW OPEN (locally).				

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7 2-FC Test	V-77- (con	-20, RCDT N2 SUPPLY FLOW CONTROL tinued)	- Functional		
[6]	PL/ CIV	ACE 2-HS-77-20, N2 TO RCDT /-ØA OUT CNTMT, in the CLOSE position	, AND		
	VE	RIFY:			
	Α.	Green Light ON at 2-HS-77-20, N2 TO R OUT CNTMT.	CDT CIV-ØA		
	В.	Red Light OFF at 2-HS-77-20, N2 TO RC OUT CNTMT.	CDT CIV-ØA		
	C.	Green Light ON at CISP 2-XX-55-6E, Wi FCV-77-20.	ndow 96,		
	D.	Red Light OFF at CISP 2-XX-55-6E, Win FCV-77-20.	dow 96, 🦾		
	E.	2-FCV-77-20, RCDT N2 SUPPLY FLOW CLOSES (locally).	CONTROL		
[7]	PL/ the FLC	ACE 2-HS-77-20, N2 TO RCDT CIV-ØA O OPEN position until 2-FCV-77-20, RCDT OW CONTROL is FULLY OPEN, THEN	OUT CNTMT in N2 SUPPLY		
	RE the	LEASE 2-HS-77-20, N2 TO RCDT CIV-ØA A AUTO position.	A OUT CNTMT to		
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	Data	Pack	kage: Page of	Date	
7	2-FC Test	V-77- (con	-20, RCDT N2 SUPPLY FLOW CONTROL tinued)	Functional	
			NOTE	· · · · · · · · · · · · · · · · · · ·	
he f lose	following es on a P	step hase	es will verify that 2-FCV-77-20, RCDT N2 SU A Containment Isolation Signal.	IPPLY FLOW CONTROL	
	[8]	PL/ OF	ACE TS-7 at Terminal Board TB 611 in Pan F position, AND	el 2-R-48 to the	
		VE	RIFY		
	· .	A.	Green Light ON at CISP 2-XX-55-6E. Wind FCV-77-20 (ACC CRIT).	dow 96,	
		В.	Red Light OFF at CISP 2-XX-55-6E, Wind FCV-77-20 (ACC CRIT).		
		C.	2-FCV-77-20, RCDT N2 SUPPLY FLOW (CLOSED (locally) (ACC CRIT).	CONTROL	
	[9]	PL/ ON	ACE TS-7 at Terminal Board TB 611 in Pan position, AND	el 2-R-48 to the	
	ų - s	VE	RIFY		
		A.	Green Light ON at CISP 2-XX-55-6E. Wine FCV-77-20 (ACC CRIT).	dow 96,	
		В.	Red Light OFF at CISP 2-XX-55-6E, Wind FCV-77-20 (ACC CRIT).	ow 96,	
		C.	2-FCV-77-20, RCDT N2 SUPPLY FLOW (CLOSED (locally) (ACC CRIT).	CONTROL	
	[10]	PL/ the FLC	ACE 2-HS-77-20, N2 TO RCDT CIV-ØA OL OPEN position until 2-FCV-77-20, RCDT N OW CONTROL is FULLY OPEN, THEN	IT CNTMT in 2 SUPPLY	
		RE the	LEASE 2-HS-77-20, N2 TO RCDT CIV-ØA A AUTO position.	OUT CNTMT to	
	[11]	CLO TO	OSE 2-ISV-32-3174, CONTROL AIR ISOLA 2-FCV-77-20.		

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6.7	2-FC\ Test(/-77- [con	20, RCDT N2 SUPPLY FLOW CONTROL F tinued)	Functional			
	[12]	OP PR 2-F	EN petcock to vent control air at Pressure R EG-77-20, CONTROL AIR PRESSURE REC CV-77-20.	egulator 3 FOR 			
	[12	2.1]	VERIFY 2-FCV-77-20, RCDT N2 SUPPL' CONTROL CLOSES (ACC CRIT).	Y FLOW			
	[13]	CL CO	DSE petcock at Pressure Regulator PREG-7 NTROL AIR PRESSURE REG FOR 2-FCV-	77-20, 77-20.			
	[14]	OP 2-F	EN 2-ISV-32-3174, CONTROL AIR ISOLATI CV-77-20.	ION VALVE TO			
	[14.1] VERIFY 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL OPENS.						
	NOTES						
1)	The following steps require valve stroke timing locally at the valve and remotely at the Control Switch in both the Open and Closed positions.						
2)	Local tim valve ste with the p based or	ing t m m posit the	begins with the initiating signal and is conclu- ovement. Remote timing begins with the initi ion indication lights status change. Stroke tir movement to the safety function final positio	ded with the completion of iating signal and is concluded me acceptance criteria will be on of the valve.			
	[15]	PL/ the FLC	ACE 2-HS-77-20, N2 TO RCDT CIV-ØA OU OPEN position until 2-FCV-77-20, RCDT N2 DW CONTROL is FULLY OPEN, THEN	T CNTMT in 2 SUPPLY			
		RE the	LEASE 2-HS-77-20, N2 TO RCDT CIV-ØA (A AUTO position.	OUT CNTMT to			
	[1:	5.1]	RECORD remote opening time at 2-HS-7 RCDT CIV-ØA OUT CNTMT.	7-20, N2 TO			
			M&TE	Cal Due Date			
				seconds			

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6.7	2-FCV-77- Test (cont	20, RCDT N2 SUPPLY FLOW CON tinued)	TROL Functional	
	[15.2]	RECORD local opening time at 2- SUPPLY FLOW CONTROL.	FCV-77-20, RCDT N2	
		M&TE	Cal Due Date	
		_	seconds	
	[16] PL/ the	ACE 2-HS-77-20, N2 TO RCDT CIV- CLOSE position.	ØA OUT CNTMT, in	
	[16.1]	RECORD remote closing time at 2 RCDT CIV-ØA OUT CNTMT. (AC	2-HS-77-20, N2 TO C CRIT)	
		M&TE	Cal Due Date	
		seconds	(≤ 10 seconds)
	[16.2]	RECORD local closing time at 2-F SUPPLY FLOW CONTROL. (ACC	CV-77-20, RCDT N2 C CRIT)	
		M&TE	Cal Due Date	
		seconds	(≤ 10 seconds)
	[17] RE I Ter and	MOVE the jumper with test switch, la minal Point 2 on Terminal Board TB Wire WBR2.	beled TS-7, from 611 in Panel 2-R-48	
				1st
				CV
	[18] LAI	ND Wire WBR2 at Terminal Point 1 c	n Terminal Board TB	

Date _____

6.8 2-LCV-77-415, RCDT LEVEL CONTROL Functional Test

- NOTES
- 1) This section will test 2-LCV-77-415, RCDT LEVEL CONTROL from its control station and verify operability of interlocks and indicating lights.
- 2) Reference drawing 2-45W600-77-6, valve location 702/AZ279
- 3) This subsection must be completed before starting subsection 6.10.
- 4) Subsections 6.3 and 6.4 must be complete before starting this subsection.
 - [1] **VERIFY** prerequisites listed in Section 4.0 for Subsection 6.8 have been completed.
 - [1.1] **ENSURE** 2-HS-77-4A, RCDT PUMP 2A is in the STOP position, **AND**

VERIFY:

- A. Green Light ON
- B. Red Light OFF
- [1.2] **ENSURE** 2-HS-77-6A, RCDT PUMP 2B is in the STOP position, **AND**

VERIFY:

- A. Green Light ON
- B. Red Light OFF
- [1.3] **ENSURE** 2-BKR-77-4-A, RCDT PUMP 2A (2-PMP-77-4) on 2-MCC-232-A-A, REACTOR VENT BOARD 2A-A, Compartment 11D (772/A10S) is in the ON position.
- [1.4] **ENSURE** 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6) on 2-MCC-232-B-B, REACTOR VENT BOARD 2B-B, Compartment 11D (772/A11S) is in the ON position.

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6.8 2-LCV-77-415, RCDT LEVEL CONTROL Functional Test (continued)

[2] **PERFORM** the following prior to beginning this Subsection:

NOTES

- 1) TS-8 will simulate Low Level in the RCDT for 2-LCV-77-415, RCDT LEVEL CONTROL, when placed in the OFF position.
- 2) TS-8 will be removed by step 6.10[49].
 - [2.1] **INSTALL** a jumper with test switch in the ON position, labeled TS-8, between Terminal Point 7 and Terminal Point 8 of 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & VLV CLOSES, (Aux Relay 2-LY-1003D) in Panel 0-L-2.

1st

CV

NOTES

- 1) TS-9 will simulate Hi Level in the RCDT for 2-LCV-77-415, RCDT LEVEL CONTROL when placed in the ON position.
- 2) TS-9 will be removed by step 6.10[50].
 - [2.2] **INSTALL** a jumper with test switch in the OFF position, labeled TS-9, between Terminal Point 7 and Terminal Point 8 of 2-LS-77-1D/B, REACT COOLANT DR TANK PUMP A ON, (Aux Relay 2-LY-1003B) in Panel 0-L-2.

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6.8 2-LCV-77-415, RCDT LEVEL CONTROL Functional Test (continued)

NOTES

- 1) TS-10 will simulate Low Level in the RCDT for 2-LCV-77-415, RCDT LEVEL CONTROL when placed in the OFF position.
- 2) TS-10 will be removed by step 6.11[57].
 - [2.3] **INSTALL** a jumper with test switch in the ON position, labeled TS-10, between Terminal Point 9 and Terminal Point 10 of 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & VLV CLOSES, (Aux Relay 2-LY-1003D) in Panel 0-L-2.

1st

CV

NOTES

- 1) TS-11 will simulate HI-HI Level in the RCDT for 2-LCV-77-415, RCDT LEVEL CONTROL when placed in the ON position.
- 2) TS-11 will be removed by step 6.11[58].
 - [2.4] **INSTALL** a jumper with test switch in the OFF position, labeled TS-11, between Terminal Point 7 and Terminal Point 8 of 2-LS-77-1D/B, REACT COOLANT DR TANK PUMP A ON, (Aux Relay 2-LY-1003B) in Panel 0-L-2.

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[2.5] **ENSURE** the Reactor Coolant Drain Tank is drained to approximately 0% as indicated on 2-LI-77-1, RCDT LEVEL, Panel 0-L-2.

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6.8 2-L (cc	-CV-77 ontinue	-415, RCDT LEVEL CONTROL Functionated)	al Test	
[3]	EN is	SURE that 2-LCV-77-415, RCDT LEVEL (CLOSED:	CONTROL	
	Α.	Green Light ON at 2-HS-77-415, RCDT I panel 0-L-2.	EVEL CNTL on	
	В.	Red Light OFF at 2-HS-77-415, RCDT L	EVEL CNTL.	
	C.	By local verification at 2-LCV-77-415, RC CONTROL, 702/AZ269.	DT LEVEL	
[4]	PL. to t	ACE and HOLD 2-HS-77-415, RCDT LEV he OPEN position, AND	EL CNTL,	
	VE	RIFY:		
	Α.	Green Light OFF at 2-HS-77-415, RCDT	LEVEL CNTL.	
	В.	Red Light ON at 2-HS-77-415, RCDT LE	VEL CNTL.	<u>.</u>
	C.	2-LCV-77-415, RCDT LEVEL CONTROL	OPEN (locally).	
[5]	RE to t	LEASE 2-HS-77-415, RCDT LEVEL CNTI the AUTO position, AND	-,	
	VE	RIFY:	``	
	Α.	Green Light ON at 2-HS-77-415, RCDT I	LEVEL CNTL.	
	В.	Red Light OFF at 2-HS-77-415, RCDT L	EVEL CNTL.	
	С.	2-LCV-77-415, RCDT LEVEL CONTROL (locally).	CLOSED	

v

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6.8 2-LCV-77-415, RCDT LEVEL CONTROL Functional Test (continued)

NOTE

The following steps will verify that 2-LCV-77-415, RCDT LEVEL CONTROL will open on HI or HI-HI level in the RCDT and close on Low level in the RCDT.

[6] **PLACE** TS-9, at 2-LS-077-1D/B, REACT COOLANT DR TANK PUMP A ON in Panel 0-L-2, to the ON position to simulate a HI level in the RCDT, **AND**

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL OPENS (ACC CRIT).

[7] **PLACE** TS-9, at 2-LS-077-1D/B, REACT COOLANT DR TANK PUMP A ON in Panel 0-L-2, to the OFF position to simulate a Normal level in the RCDT, **AND**

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL CLOSES.

[8] **PLACE** TS-11, at 2-LS-077-1B/D, REACT COOLANT DR TANK PUMP B ON in Panel 0-L-2, to the ON position to simulate a HI-HI level in the RCDT, **AND**

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL OPENS (ACC CRIT).

[9] **PLACE** TS-11, at 2-LS-077-1B/D, REACT COOLANT DR TANK PUMP B ON in Panel 0-L-2, to the OFF position to simulate a Normal level in the RCDT, **AND**

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL CLOSES.

[10] **PLACE** TS-8, at 2-LS-077-1E, REACT COOLANT DR TK PUMPS OFF & VLV CLOSES in Panel 0-L-2, to the OFF position to simulate a Low level in the RCDT, **AND**

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL remains CLOSED (**ACC CRIT**).

Date

6.8 2-LCV-77-415, RCDT LEVEL CONTROL Functional Test (continued)

[11] **PLACE** TS-8, at 2-LS-077-1E, REACT COOLANT DR TK PUMPS OFF & VLV CLOSES in Panel 0-L-2, to the ON position to simulate a Normal level in the RCDT, **AND**

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL remains CLOSED.

[12] PLACE TS-10, at 2-LS-077-1E, REACT COOLANT DR TK PUMPS OFF & VLV CLOSES in Panel 0-L-2, to the OFF position to simulate a Low level in the RCDT, AND

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL remains CLOSED.

[13] **PLACE** TS-10, at 2-LS-077-1E, REACT COOLANT DR TK. PUMPS OFF & VLV CLOSES in Panel 0-L-2, to the ON position to simulate a Normal level in the RCDT, **AND**

VERIFY that 2-LCV-77-415, RCDT LEVEL CONTROL remains CLOSED.

- [14] **CLOSE** 2-ISV-32-3526, CONTROL AIR ISOLATION VALVE TO 2-LCV-77-415.
- [15] **OPEN** petcock to vent control air at 2-PREG-77-415, CONTROL AIR PRESSURE REG FOR 2-LCV-77-415, **AND**

VERIFY 2-LCV-77-415, RCDT LEVEL CONTROL OPENS.

- [16] **CLOSE** petcock at 2-PREG-77-415, CONTROL AIR PRESSURE REG FOR 2-LCV-77-415.
- [17] **OPEN** 2-ISV-32-3526, CONTROL AIR ISOLATION VALVE TO 2-LCV-77-415, **AND**

VERIFY 2-LCV-77-415, RCDT LEVEL CONTROL CLOSES.

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6.9	2-FC	V-77-	3, RCDT TO RB FLR/EQ DRN SUMP Functional Test					
			NOTES					
1)	This sec station a	s section will test 2-FCV-77-3, RCDT TO RB FLR/EQ DRN SUMP from its control tion and verify operability of indicating lights.						
2)	Referen	ce dra	awing 2-45W600-77-1, valve location 702/AZ274					
,	[1]	VEF hav	RIFY prerequisites listed in Section 4.0 for Subsection 6.9					
	[2]	ENS SU	SURE that 2-FCV-77-3, RCDT TO RB FLR/EQ DRN MP, is CLOSED:					
		A.	Green Light ON at 2-HS-77-3, RCDT TO RB FLR/EQDRN SUMP FLOW CNTL, on Panel 0-L-2.					
		В.	Red Light OFF at 2-HS-77-3, RCDT TO RB FLR/EQDRN					
		C.	By local verification at 2-FCV-77-3, RCDT TO RB FLR/EQ DRN SUMP, 702/AZ274.					
	[3]	PL/ SU	ACE 2-HS-77-3, RCDT TO RB FLR/EQDRN IMP FLOW CNTL, to the OPEN position, AND					
		VEF	RIFY:					
		A.	Green Light OFF at 2-HS-77-3, RCDT TO RB FLR/EQDRN SUMP FLOW CNTL.					
		В.	Red Light ON at 2-HS-77-3, RCDT TO RB FLR/EQDRN SUMP FLOW CNTL.					
		C.	2-FCV-77-3, RCDT TO RB FLR/EQ DRN SUMP OPEN (locally).					

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5.9	2-FC (cont	V-77. inue	-3, RCDT TO RB FLR/EQ DRN SUMP Fun d)	ctional Test		
	[4]	PL/ SU	ACE 2-HS-77-3, RCDT TO RB FLR/EQDRN IMP FLOW CNTL, to the CLOSE position, A			
		VE	RIFY:			
		A.	Green Light ON at 2-HS-77-3, RCDT TO F SUMP FLOW CNTL.	RB FLR/EQDRN	<u></u>	
		В.	Red Light OFF at 2-HS-77-3, RCDT TO R SUMP FLOW CNTL.	B FLR/EQDRN	·	
		C.	2-FCV-77-3, RCDT TO RB FLR/EQ DRN (locally).	SUMP CLOSED		
	[5]	PL/ Su	ACE 2-HS-77-3, RCDT TO RB FLR/EQDRM IMP FLOW CNTL, to the OPEN position, AI	1 ND		
		VEI OP	RIFY 2-FCV-77-3, RCDT TO RB FLR/EQ D EN.	RN SUMP is		
	[6]	CLO TO	OSE 2-ISV-032-3527, CONTROL AIR ISOL 2-FCV-77-3.	ATION VALVE		
×	[7]	op Air	EN petcock to vent control air at 2-PREG-7 R PRESSURE REG FOR 2-FCV-77-3	7-3, CONTROL	· .	
	[7	.1]	VERIFY 2-FCV-77-3, RCDT TO RB FLR SUMP CLOSES.	/EQ DRN		
	[8]	CL RE	OSE petcock at 2-PREG-77-3, CONTROL A G FOR 2-FCV-77-3.	AIR PRESSURE		
	[9]	OP 2-F	EN 2-ISV-32-3527, CONTROL AIR ISOLAT CV-77-3	ION VALVE TO		
	[9	.1]	VERIFY 2-FCV-77-3, RCDT TO RB FLR SUMP OPENS.	/EQ DRN	· · · · ·	
	[10]	PL/ CN	ACE 2-HS-77-3, RCDT TO RB FLR/EQDRM TL, to the CLOSE position, AND	N SUMP FLOW		
		VEI CLO	RIFY 2-FCV-77-3, RCDT TO RB FLR/EQ D OSES.	RN SUMP		

Date _____

6.10 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A Logic Test

1) This section will test 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A from its control stations and verify operability of all interlocks, indicating lights, and annunciators.

NOTES

- 2) Reference drawing 2-45W760-77-4, valve location 702/AZ275
- 3) Subsection 6.8 must be performed prior to this subsection due to installation of TS-8 and TS-9.
 - [1] **VERIFY** prerequisites listed in section 4.0 for Subsection 6.10 have been completed.

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.10[2.1] through 6.10[2.7].

	-		
503			O I C
1.74	und prior to be	aunning this	Subcodion
1/1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	SOBTICITIES TO A	SHUSELIIUI
			000000000
		0 0	

[2.1]	VERIFY/PLACE 2-BKR-77-4-A, RCDT PUMP 2A
	(2-PMP-77-4), 2-MCC-232-A-A, Compartment. 11D,
	772/A10S, to the OFF position.

[2.2] **PULL** 2-MCC-232-A-A, Compartment. 11D.

- [2.3] **ENSURE** locking tabs engage to prevent bucket from re-engaging.
- [2.4] **PERFORM** live-dead-live check on load.
- [2.5] **REMOVE** the Thermal Overloads (3) for 2-BKR-77-4-A, RCDT PUMP 2A (2-PMP-77-4).

1st

1st

CV

CV

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6.10	2-PMF Test (o-77- cont	4, REACTOR COOLANT DRAIN TANK inued)	(Pl	UMP 2A Logic	
	[2.0	6]	REINSTALL 2-MCC-232-A-A, Compa	artm	nent. 11D.	
						1st
						CV
	[2.]	7]	PLACE 2-BKR-77-4-A, RCDT PUMP to the ON position.	2A	(2-PMP-77-4)	
			NOTE			
TS-1 DRA	5 will sim IN TANK	ulate PUN	e a Low Level in the RCDT for 2-PMP-77 IP 2A, when placed in the OFF position	7-4,	REACTOR COOLAI	NT
	[2.8]		INSTALL a jumper with test switch in the ON position, labeled TS-15, between Terminal Point 3 and Terminal Point 4 of 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & VLV CLOSES, (Aux Relay 2-LY-1003D) in Panel 0-L-2.			
			· · ·		150	
						CV
	[2.9	9]	ENSURE the Reactor Coolant Drain approximately 0% as indicated on 2-L COOLANT DR TK LEVEL INDICATO	Гап .I-7 R, I	k is drained to 7-1, REACT Panel 0-L-2.	
	[3] PLA NOF		CE 2-HS-77-4A, RCDT PUMP 2A at Pa RMAL position.	ane	I 0-L-2, to the	
	[4]	VEF	RIFY the light status at 2-HS-77-4A, RCI	DT	PUMP 2A:	
		A.	Green Light ON			
		В.	Red Light OFF			
	[5] PLA		CE 2-HS-77-4A, RCDT PUMP 2A to the	CE 2-HS-77-4A, RCDT PUMP 2A to the START position, AND		
			RIFY:			
		A.	Green Light ON			
		В.	Red Light OFF		· · · ·	

V U	VBN nit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 98 of 218
	Data F	ackage: Page of	Date
6.10	2-PMP Test (d	-77-4, REACTOR COOLANT DRAIN TANK PU continued)	JMP 2A Logic
	[6]	PLACE 2-HS-77-9A, RCDT PMPS TO TDCT C CNTMT, on 2-M-15, in the OPEN position, AND	CIV-ØA IN D
		VERIFY 2-FCV-77-9, RCDT PUMP DISCHARC CONTROL, is OPEN.	GE FLOW
	[7]	PLACE 2-HS-77-4A, RCDT PUMP 2A to the START position, AND	
		VERIFY:	
		A. Green Light ON	
		B. Red Light OFF	
	[8]	PLACE 2-HS-77-9A, RCDT PMPS TO TDCT C CNTMT, in the CLOSE position, AND	CIV-ØA IN
		VERIFY 2-FCV-77-9 RCDT PUMP DISCHARG CONTROL is CLOSED.	E FLOW
	[9]	PLACE 2-HS-77-10A, RCDT PMPS TO TDCT CNTMT on 2-M-15, in the OPEN position, AND	CIV-ØA OUT
		VERIFY 2-FCV-77-10, RCDT PUMP DISCHAR CONTROL, is OPEN.	GE FLOW
	[10]	PLACE 2-HS-77-4A, RCDT PUMP 2A to the START position, AND	
		VERIFY:	
		A. Green Light ON	
		B. Red Light OFF	
	[11]	PLACE 2-HS-77-9A, RCDT PMPS TO TDCT C CNTMT, in the OPEN position, AND	CIV-ØA IN
		VERIFY 2-FCV-77-9, RCDT PUMP DISCHARC CONTROL is OPEN.	GE FLOW

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6.10	2-PMF Test (P-77 con	-4, REACTOR COOLANT DRAIN TANK P tinued)	UMP 2A Logic
	[12]	PL/ to t	ACE 2-HS-77-4A, RCDT PUMP 2A he START position, AND	
		VE	RIFY:	
		Α.	Green Light OFF	. <u></u>
		В.	Red Light ON	·
	[13]	PL to t	ACE 2-HS-77-4A, RCDT PUMP 2A he STOP position, AND	
		VE	RIFY.	
		Α.	Green Light ON	
		В.	Red Light OFF	
	[14]	PL/ to t	ACE 2-HS-77-4A, RCDT PUMP 2A he START position, AND	
		VE	RIFY:	· · · ·
		A.	Green Light OFF	
		В.	Red Light ON	
	[15]	PL to t	ACE TS-15, at 2-LS-77-1E in Panel 0-L-2, he OFF position to simulate Low level in the	e RCDT, AND
		VE	RIFY:	
		Α.	Green Light ON at 2-HS-77-4A, RCDT PL	JMP 2A.
		В.	Red Light OFF at 2-HS-77-4A, RCDT PUI	MP 2A.
	[16]	PL PU pos	ACE TS-15, at 2-LS-77-1E, REACT. COOL MPS OFF & VLV CLOSES in Panel 0-L-2, t sition to simulate Normal level in the RCDT.	ANT DR TK to the ON

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6.10	2-PM Test	2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A Logic Test (continued)						
	[17]	PL/ to t	ACE 2-HS-77 he START po	7-4A, RCDT PUMP 2A osition, AND				
		VE	RIFY:					
		Α.	Green Light	t OFF				
		В.	Red -Light (ON				
	[18]	PL. CN	ACE 2-HS-77 ITMT, in the C	7-9A, RCDT PMPS TO CLOSE position, AND	TDCT CIV-ØA IN			
		VE CO	RIFY 2-FCV- NTROL is CL	77-9, RCDT PUMP DIS LOSED.	CHARGE FLOW			
	[19]	VE	RIFY light sta	atus at 2-HS-77-4A, RCI	DT PUMP 2A:			
		A.	Green Light	t ON				
		В.	Red Light C	DFF				
	[20]	PL. CN	ACE 2-HS-77 ITMT, in the C	7-9A, RCDT PMPS TO ⁻ DPEN position, AND	TDCT CIV-ØA IN			
		VE CO	RIFY 2-FCV- NTROL is OF	77-9, RCDT PUMP DIS PEN.	CHARGE FLOW	<u></u>		
	[21]	PL/ to t	ACE 2-HS-77 the START po	7-4A, RCDT PUMP 2A osition, AND				
		VE	RIFY:	·	۱.			
		A.	Green Light	t.OFF				
		В.	Red Light C	N				
	[22]	PL CN	ACE 2-HS-77 ITMT in the C	7-10A, RCDT PMPS TO CLOSE position, AND	TDCT CIV-ØA OUT			
		VE CO	RIFY 2-FCV- NTROL is CL	77-10, RCDT PUMP DI LOSED.	SCHARGE FLOW			

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6.10 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A Logic Test (continued)

- [23] **VERIFY** light status at 2-HS-77-4A, RCDT PUMP 2A:
 - A. Green Light ON
 - B. Red Light OFF
- [24] **PLACE** 2-HS-77-10A, RCDT PMPS TO TDCT CIV-ØA OUT CNTMT in the OPEN position, **AND**

VERIFY 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL is OPEN.

NOTE

The following steps verify that 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A will automatically start on RCDT HI level signal with 2-FCV-77-9 and 2-FCV-77-10 both in full open position.

[25] **PULL OUT** 2-HS-77-4A, RCDT PUMP 2A to the P-AUTO position, **AND**

VERIFY:

- A. Green Light ON
- B. Red Light OFF
- [26] PLACE TS-9, at 2-LS-77-1D/B, REACT COOLANT DR TANK PUMP A ON in Panel 0-L-2, to the ON position to simulate Hi level in the RCDT.
- [27] **VERIFY** the light status at 2-HS-77-4A, RCDT PUMP 2A (Acc Crit):
 - A. Green Light OFF
 - B. Red Light ON

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6.10 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A Logic Test (continued)

NOTE

The following step verifies that 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A will automatically stop on receipt of RCDT low level signal.

[28] PLACE TS-8, at 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & VLV CLOSES in Panel 0-L-2, to the OFF position to simulate a Low level in the RCDT, AND

VERIFY (Acc Crit):

- A. Green Light ON at 2-HS-77-4A, RCDT PUMP 2A.
- B. Red Light OFF at 2-HS-77-4A, RCDT PUMP 2A.
- [29] **PLACE** TS-8, at Level switch 2-LS-77-1E, REACT COOLANT DR TK PUMPS OFF & VLV CLOSES in Panel 0-L-2, to the ON position to simulate a Normal level in the RCDT, **AND**

VERIFY:

- A. Green Light ON at 2-HS-77-4A, RCDT PUMP 2A. REACT COOLANT DR TK PUMP A.
- B. Red Light OFF at and switch 2-HS-77-4A, RCDT PUMP 2A.

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6.10	2-PM Test (P-77 (con	-4, REACTOR COOLANT DRAIN TANK P tinued)	UMP 2A Logic	
	[30]	PR ST/	ESS 2-HS-77-4B, RCDT PUMP 2A ART Pushbutton 702/AZ270, AND		
	`	VE	RIFY:		
		A.	Green Light OFF at 2-HS-77-4A, RCDT P	UMP 2A.	
		В.	Red Light ON at 2-HS-77-4A, RCDT PUM	P 2A.	<u></u>
	[3	0.1]	RELEASE the 2-HS-77-4B, RCDT PUMI pushbutton	P 2A START	
	[31]	PL/ RC Col	ACE 2-HS-77-4C, RCDT PUMP 2A, at 2-Bk DT PUMP 2A (2-PMP-77-4), 2-MCC-232-A mpartment 11D, 772/A10S, to the STOP po	(R-77-4-A, A, sition, AND	
		VE	RIFY:		
		Α.	Green Light OFF at 2-HS-77-4A, RCDT P	UMP 2A.	<u></u>
		В.	Red Light ON at 2-HS-77-4A, RCDT PUM	P 2A.	
	[32]	PR ST	ESS 2-HS-77-4B, RCDT PUMP 2A OP Pushbutton, AND		
		VE	RIFY:		
		Α.	Green Light ON at 2-HS-77-4A, RCDT PU	IMP 2A.	
		В.	Red Light OFF at 2-HS-77-4A, RCDT PU	MP 2A.	
	[3]	2.1]	RELEASE the 2-HS-77-4B, RCDT PUM pushbutton.	P 2A STOP	
	[33]	PL. to t	ACE 2-HS-77-4C, RCDT PUMP 2A, he START position, AND		
		VE	RIFY:		
		Α.	Green Light ON at 2-HS-77-4A, RCDT PL	IMP 2A.	
		В.	Red Light OFF at 2-HS-77-4A, RCDT PUI	MP 2A.	

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6.10 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A Logic Test (continued)

NOTE

In the following steps, the Red and Green Lights at 2-HS-77-4A, RCDT PUMP 2A will be de-energized. The Red Light at 2-BKR-77-4-A, RCDT PUMP 2A (2-PMP-77-4), will not energize with the thermal overloads removed. Status of 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A logic circuit will be verified by visual observation of the motor contactor at 2-BKR-77-4-A, RCDT PUMP 2A (2-PMP-77-4).

 [34] PLACE Transfer Switch 2-XS-77-4, RCDT PUMP A, at 2-BKR-77-4-A, RCDT PUMP 2A (2-PMP-77-4), 2-MCC-232-AA, Compartment. 11D, 772/A10S, to the AUX position, AND

VERIFY:

- A. Green Light OFF at 2-HS-77-4A, RCDT PUMP 2A.
- B. Red Light OFF at 2-HS-77-4A, RCDT PUMP 2A.
- C. By visual observation, motor contactor at 2-BKR-77-4-A, RCDT PUMP 2A (2-PMP-77-4) is ENERGIZED.
- [35] **PLACE** 2-HS-77-4C, RCDT PUMP 2A, at 2-BKR-77-4-A, RCDT PUMP 2A (2-PMP-77-4), to the STOP position, **AND**

VERIFY by visual observation that the motor contactor is DE-ENERGIZED.

[36] **PLACE** 2-HS-77-4A, RCDT PUMP 2A to the START position, **AND**

VERIFY by visual observation that the motor contactor remains DE-ENERGIZED.

[37] **PRESS and HOLD** 2-HS-77-4B, RCDT PUMP 2A START Pushbutton, **AND**

VERIFY by visual observation that the motor contactor is ENERGIZED.

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6.10	2-PM Test	P-77-4, REA continued)	CTOR COOLANT DRAIN TANK P	UMP 2A Logic
	[38]	PLACE 2-H AND	IS-77-4A, RCDT PUMP 2A to the S	STOP position,
		VERIFY by remains EN	visual observation that the motor c IERGIZED.	ontactor
	[39]	PRESS 2-H AND	IS-77-4B, RCDT PUMP 2A STOP F	Pushbutton,
		VERIFY by DE-ENERG	visual observation that the motor c	ontactor is
	[3	9.1] RELE pushl	EASE the 2-HS-77-4B, RCDT PUM putton.	P 2A STOP
	[40]	PLACE Tra to the NOR	insfer Switch 2-XS-77-4, RCDT PU MAL position, AND	MP A,
		VERIFY:		
		A. Green	Light ON at 2-HS-77-4A, RCDT PL	JMP 2A.
		B. Red Li	ght OFF at 2-HS-77-4A, RCDT PU	MP 2A
	[41]	PLACE 2-H STOP/PUL	IS-77-4A, RCDT PUMP 2A to the L-TO-LOCK position.	· · ·
			WARNING	
Arc F	lash PP	E per TI-300	will be required for steps 6.10[42] t	hrough 6.10[48].
	[42]	PLACE 2-E 2-MCC-232 position.	3KR-77-4-A, RCDT PUMP 2A (2-PM 2-A-A, Compartment. 11D, 772/A10	/IP-77-4), S, to the OFF
	[43]	PULL 2-MC	CC-232-A-A, Compartment. 11D.	
				1st
				CV

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[44] **ENSURE** locking tabs engage to prevent bucket from re-engaging.

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6.10	2-PM Test	P-77 (con	7-4, REACTOR COOLANT DRAIN TANK P tinued)	UMP 2A Logic	
	[45]	PE	RFORM live-dead-live check on load.		
	[46]	INS PU	STALL the Thermal Overloads (3) for 2-BKR MP 2A (2-PMP-77-4).	8-77-4-A, RCDT	
					1st
					CV
	[47]	RE	INSTALL 2-MCC-232-A-A, Compartment. 1	1D.	
					. 151
					CV
	[48]	PL/ ON	ACE 2-BKR-77-4-A, RCDT PUMP 2A (2-PN I position.	1P-77-4) to the	
	[49]	RE Ter RE Par	MOVE the jumper with test switch, labeled ⁻ rminal Point 7 and Terminal Point 8 of 2-LS- ACT. COOLANT DR TK PUMPS OFF & VL nel 0-L-2.	TS-8, from 077-1E, V CLOSES, in	
					1st
					CV
	[50]	` RE Ter RF	MOVE the jumper with test switch, labeled rminal Point 7 and Terminal Point 8 of 2-LS-	TS-9, from 077-1D/B, Panel 0-I -2	
					1st
					CV
	[51]	RE Ter RE	MOVE the jumper with test switch, labeled rminal Point 3 and Terminal Point 4 of 2-LS- ACT. COOLANT DR TK PUMPS OFF & VL	TS-15, between 077-1E, V CLOSES, in	
		i ui			1st

CV

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6.10	.10 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A Logic Test (continued)					
	[52]	PLACE 2-HS-77-9A, RCDT PMP CNTMT, in the CLOSE position, A	S TO TDCT CIV-ØA IN ND			
		VERIFY 2-FCV-77-9, RCDT PUN CONTROL is CLOSED.	P DISCHARGE FLOW			
	[53] PLACE 2-HS-77-10A, RCDT PMPS TO TDCT CIV-ØA OUT CNTMT in the CLOSE position, AND					
VERIFY 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL is CLOSED.				· · ·		
		NOTI	:			
The for COOI	ollowing LANT D	steps verify the function of Annunc RAIN TNK HI TEMP.	iator XA/1098, Window 1	3, REACTOR		
	[54]	VERIFY Annunciator, XA/1098, V COOLANT DRAIN TNK HI TEMP	/indow 13, REACTOR , is CLEAR.			
[55] RECORD the as-found setting of 2-TS-77-21, RCDT TEMP HI TEMP ALARM SWITCH, at 0-L-2.						
•			As-Found Setting	°F		
	[56] ADJUST 2-TS-77-21, RCDT TEMP HI TEMP ALARM SWITCH until Annunciator XA/1098, Window 13, REACTOR					

[57] **RETURN** 2-TS-77-21, RCDT TEMP HI TEMP ALARM SWITCH to the as-found setting recorded in step 6.10[55].

COOLANT DRAIN TNK HI TEMP, ALARMS (ACC CRIT).

As-Left Setting	°F
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[58] **VERIFY** Annunciator XA/1098, Window 13, REACTOR COOLANT DRAIN TNK HI TEMP, CLEARS.

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Date _____

1st

CV

6.11 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B Logic Test

1) This section will test 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B from its control stations and verify operability of all interlocks, indicating lights, and annunciators.

NOTES

- 2) Reference drawing 2-45W760-77-4, valve location 702/AZ275
- 3) Subsection 6.8 must be performed prior to this subsection due to installation of TS-10 and TS-11.
 - [1] **VERIFY** prerequisites listed in Section 4.0 for Subsection 6.11 have been completed.

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.11[2.1] through 6.11[2.7].

[2] **PERFORM** the following prior to beginning this Subsection:

[2.1]	VERIFY/PLACE 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6), 2-MCC-232-B-B, Compartment. 11D, 772/A10S, to the OFF position.	·
[2.2]	PULL 2-MCC-232-B-B, Compartment. 11D.	
		1st
		CV
[2.3]	ENSURE locking tabs engage to prevent bucket from re-engaging.	
[2.4]	PERFORM live-dead-live check on load.	<u></u>
[2.5]	REMOVE the Thermal Overloads (3) for 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6).	

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6.11	2-PMP-7 Test (co	7-6, REACTOR COOLANT DRAIN TANK F ntinued)	PUMP 2B Logic	
	[2.6]	REINSTALL 2-MCC-232-B-B, Comparts	ment. 11D.	1st
				CV
	[2.7]	PLACE 2-BKR-77-6-B, RCDT PUMP 28 to the ON position.	3 (2-PMP-77-6)	
		NOTE		
TS-1 DRAI	6 will simula IN TANK PL	te a Low Level in the RCDT for 2-PMP-77-6 JMP 2B, when placed in the OFF position.	6, REACTOR COO	LANT
[2.8]		INSTALL a jumper with test switch in th labeled TS-16, between Terminal Point Point 2 of 2-LS-77-1E, REACT. COOLA PUMPS OFF & VLV CLOSES, (Aux Re in Panel 0-L-2.	INSTALL a jumper with test switch in the ON position, labeled TS-16, between Terminal Point 1 and Terminal Point 2 of 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & VLV CLOSES, (Aux Relay 2-LY-1003D) in Panel 0-L-2	
				1.04
				TSL
	[2.9]	ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77- Panel 0-L-2.	nk is drained to 1, RCDT LEVEL,	CV
	[2.9] [3] PI No	ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77- Panel 0-L-2. -ACE 2-HS-77-6A, RCDT PUMP 2B, at Par ORMAL position.	nk is drained to 1, RCDT LEVEL, nel 0-L-2, to the	CV
	[2.9] [3] PI N([4] VI	ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77- Panel 0-L-2. .ACE 2-HS-77-6A, RCDT PUMP 2B, at Par DRMAL position. ERIFY the light status at 2-HS-77-6A, RCDT	nk is drained to 1, RCDT LEVEL, nel 0-L-2, to the PUMP 2B:	
	[2.9] [3] Pi No [4] Vi A.	 ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77-Panel 0-L-2. -ACE 2-HS-77-6A, RCDT PUMP 2B, at Par ORMAL position. ERIFY the light status at 2-HS-77-6A, RCDT Green Light ON 	nk is drained to 1, RCDT LEVEL, nel 0-L-2, to the PUMP 2B:	
	[2.9] [3] PI No [4] VI A. B.	ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77- Panel 0-L-2. -ACE 2-HS-77-6A, RCDT PUMP 2B, at Par DRMAL position. ERIFY the light status at 2-HS-77-6A, RCDT Green Light ON Red Light OFF	nk is drained to 1, RCDT LEVEL, nel 0-L-2, to the PUMP 2B:	
÷	[2.9] [3] PI NG [4] VI A. B. [5] Pi to	 ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77-Panel 0-L-2. ACE 2-HS-77-6A, RCDT PUMP 2B, at Par DRMAL position. ERIFY the light status at 2-HS-77-6A, RCDT Green Light ON Red Light OFF ACE 2-HS-77-6A, RCDT PUMP 2B, the START position, AND 	nk is drained to 1, RCDT LEVEL, nel 0-L-2, to the PUMP 2B:	
÷	[2.9] [3] PI No [4] VI A. [5] Pi to VI	ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77- Panel 0-L-2. -ACE 2-HS-77-6A, RCDT PUMP 2B, at Par DRMAL position. ERIFY the light status at 2-HS-77-6A, RCDT Green Light ON Red Light OFF -ACE 2-HS-77-6A, RCDT PUMP 2B, the START position, AND ERIFY:	nk is drained to 1, RCDT LEVEL, nel 0-L-2, to the PUMP 2B:	
	[2.9] [3] PI No [4] VI A. [5] Pi to VI A.	ENSURE the Reactor Coolant Drain Ta approximately 0% indicated on 2-LI-77- Panel 0-L-2. -ACE 2-HS-77-6A, RCDT PUMP 2B, at Par DRMAL position. ERIFY the light status at 2-HS-77-6A, RCDT Green Light ON Red Light OFF -ACE 2-HS-77-6A, RCDT PUMP 2B, the START position, AND ERIFY: Green Light ON	nk is drained to 1, RCDT LEVEL, nel 0-L-2, to the PUMP 2B:	

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.11	2-PM Test	P-77-6, REACTOR COOLANT DRAIN TA (continued)	NK PUMP 2B Logic	
	[6]	PLACE 2-HS-77-9A, RCDT PMPS TO TE CNTMT, on 2-M-15, in the OPEN position	DCT CIV-ØA IN I, AND	
		VERIFY 2-FCV-77-9, RCDT PUMP DISC CONTROL, is OPEN.	HARGE FLOW	
	[7]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the START position, AND		
		VERIFY:		
		A. Green Light ON		
		B. Red Light OFF		
	[8]	PLACE 2-HS-77-9A, RCDT PMPS TO TE CNTMT, in the CLOSE position, AND	DCT CIV-ØA IN	
		VERIFY 2-FCV-77-9, RCDT PUMP DISC CONTROL is CLOSED.	HARGE FLOW	
	[9]	PLACE 2-HS-77-10A, RCDT PMPS TO T CNTMT on 2-M-15, in the OPEN position	DCT CIV-ØA OUT , AND	
		VERIFY 2-FCV-77-10, RCDT PUMP DISC CONTROL, is OPEN.	CHARGE FLOW	
	[10]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the START position, AND		
		VERIFY:	``	
		A. Green Light ON		
		B. Red Light OFF		
	[11]	PLACE 2-HS-77-9A, RCDT PMPS TO TE CNTMT, in the OPEN position, AND	DCT CIV-ØA IN	
		VERIFY 2-FCV-77-9, RCDT PUMP DISC CONTROL is OPEN.	HARGE FLOW	

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6.11	2-PM Test	P-77 (cont	-6, REACTOR COOLANT DRAIN TANK F tinued)	PUMP 2B Logic
	[12]	PL/ to th	ACE 2-HS-77-6A, RCDT PUMP 2B, he START position, AND	
		VEI	RIFY:	
		Α.	Green Light OFF	
		В.	Red Light ON	• .
	[13]	PL/ to tl	ACE 2-HS-77-6A, RCDT PUMP 2B, he STOP position, AND	
		VEI	RIFY:	
		Α.	Green Light ON	
		В.	Red Light OFF	
	[14]	PL/ to ti	ACE 2-HS-77-6A, RCDT PUMP 2B, he START position, AND	
		VEI	RIFY:	
		A.	Green Light OFF	
		В.	Red Light ON	
	[15]	PL/ RE/ in F to s	ACE TS-16, at 2-LS-77-1E, ACT. COOLANT DR TK PUMPS OFF & V Panel 0-L-2, to the OFF position simulate Low level in the RCDT, AND	LV CLOSES
		VEI	RIFY:	
		A.	Green Light ON at 2-HS-77-6A, RCDT P	UMP 2B
		В.	Red Light OFF at 2-HS-77-6A, RCDT PU	IMP 2B
	[16]	PL/ PUI pos	ACE TS-16, at 2-LS-77-1E, REACT. COOI MPS OFF & VLV CLOSES in Panel 0-L-2, ition to simulate a Normal level in the RCE	LANT DR TK to the ON DT

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ſ	Data P	Date	
11 2	2-PMP Test (d	P-77-6, REACTOR COOLANT DRAIN TANK continued)	PUMP 2B Logic
[[17]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the START position, AND	
		VERIFY:	
		A. Green Light OFF	
		B. Red Light ON	
[[18]	PLACE 2-HS-77-9A, RCDT PMPS TO TDCT CNTMT, in the CLOSE position, AND	CIV-ØA IN
		VERIFY 2-FCV-77-9, RCDT PUMP DISCHAR CONTROL is CLOSED.	RGE FLOW
[[19]	VERIFY light status at 2-HS-77-6A, RCDT PU	JMP 2B:
		A. Green Light ON	
		B. Red Light OFF	
[[20]	PLACE 2-HS-77-9A, RCDT PMPS TO TDCT CNTMT, in the OPEN position, AND	CIV-ØA IN
		VERIFY 2-FCV-77-9, RCDT PUMP DISCHAR CONTROL is OPEN.	RGE FLOW
[[21]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the START position, AND	
		VERIFY:	
		A. Green Light OFF	· ·
		B. Red Light ON	
[[22]	PLACE 2-HS-77-10A, RCDT PMPS TO TDC CNTMT in the CLOSE position, AND	T CIV-ØA OUT
		VERIFY 2-FCV-77-10, RCDT PUMP DISCHA	ARGE FLOW

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6.11 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B Logic Test (continued)

- [23] **VERIFY** light status at 2-HS-77-6A, RCDT PUMP 2B:
 - A. Green Light ON
 - B. Red Light OFF
- [24] PLACE 2-HS-77-10A, RCDT PMPS TO TDCT CIV-ØA OUT CNTMT in the OPEN position, AND

VERIFY 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL is OPEN.

NOTE

The following steps verify that 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B will automatically start on RCDT HI-HI level signal with 2-FCV-77-9 and 2-FCV-77-10 both in full open position.

[25] **PULL OUT** 2-HS-77-6A, RCDT PUMP 2B, to the "P-AUTO" position, **AND**

VERIFY:

- A. Green Light ON
- B. Red Light OFF
- [26] **PLACE** TS-11, at 2-LS-77-1B/D, REACT COOLANT DR TANK PUMP B ON in Panel 0-L-2, to the ON position to simulate a Hi-Hi level in the RCDT.
- [27] **VERIFY** the light status at 2-HS-77-6A, RCDT PUMP 2B (Acc Crit):
 - A. Green Light OFF
 - B. Red Light ON

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6.11	2-PM Test	P-77 (con	-6, REACTOR COOLANT DRAIN TANK P tinued)	UMP 2B Logic
	[28]	PL RE in F to s	ACE TS-11, at 2-LS-77-1B/D, ACT COOLANT DR TANK PUMP B ON Panel 0-L-2, to the OFF position simulate a Normal level in the RCDT, AND	
		VE	RIFY:	
		Α.	Green Light OFF at 2-HS-77-6A, RCDT P	UMP 2B
		В.	Red Light ON at 2-HS-77-6A, RCDT PUN	IP 2B
	[29]	PL to t	ACE 2-HS-77-6A, RCDT PUMP 2B, he STOP position, AND	
		VE	RIFY:	
		Α.	Green Light ON	
		В.	Red Light OFF	
	[30]	PU to t	LL OUT 2-HS-77-6A, RCDT PUMP 2B, he "P-AUTO" position, AND	
		VE	RIFY:	
		Α.	Green Light ON	
		В.	Red Light OFF	
			NOTE	·

The following steps verify that 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B will automatically start when 2-FCV-68-310 is fully opened with 2-FCV-77-9 and 2-FCV-77-10 both in full open position.

[31] **PLACE** 2-HS-68-310A, PRT DRAIN TO RCDT, at 2-M-5, to the OPEN position, **AND**

VERIFY 2-FCV-68-310, PRESSURIZER RELIEF TANK TO RCDT is OPEN.

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6.11	2-PN Test	2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B Logic Test (continued)							
	[32]	VERIFY the light status at 2-HS-77-6A, RCDT PUMP 2B (Acc Crit):							
		A. Green Light OFF							
		B. Red Light ON							
	[33]	PLACE 2-HS-68-310A, PRT DRAIN TO RCE the CLOSE position, AND	DT, at 2-M-5, to						
		VERIFY 2-FCV-68-310, PRESSURIZER REI RCDT is CLOSED.							
	[34]	VERIFY the light status at 2-HS-77-6A, RCD	T PUMP 2B:						
	,	A. Green Light ON							
		B. Red Light OFF							
	[35]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the START position, AND							
		VERIFY:							
		A. Green Light OFF							
		B. Red Light ON							

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6.11	2-PMP Test (c	-77-6, REACTOR COOLANT DRAIN TANK ontinued)	CPUMP 2B Logic
		NOTE	
The for the formation 2 B with the second se	ollowing s Il automa	tep verifies that 2-PMP-77-6, REACTOR CC tically stop on receipt of RCDT low level sign	DOLANT DRAIN TANK PUMP nal.
	[36]	PLACE TS-10, at 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & n Panel 0-L-2, to the OFF position to simulate a Low level in the RCDT, AND	VLV CLOSES
	,	VERIFY (Acc Crit):	
		A. Green Light ON at 2-HS-77-6A, RCDT	PUMP 2B
		B. Red Light OFF at 2-HS-77-6A, RCDT P	PUMP 2B
	[37]	PLACE TS-10, at 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & n Panel 0-L-2, to the ON position to simulate a Normal level in the RCDT, ANI	VLV CLOSES D
	,	VERIFY:	
		A. Green Light ON at 2-HS-77-6A, RCDT	PUMP 2B
		B. Red Light OFF at 2-HS-77-6A, RCDT P	2UMP 2B
	[38]	PRESS and HOLD 2-HS-77-6B, RCDT PUMP 2B START Pushbutton 702/A2	Z275, AND
		VERIFY:	
		A. Green Light OFF at 2-HS-77-6A, RCDT	PUMP 2B
		B. Red Light ON at 2-HS-77-6A, RCDT PU	JMP 2B
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	Data I	Pack	(age: Page of	Date	
11	2-PMF Test (o-77 con	-6, REACTOR COOLANT DRAIN TANK I tinued)	PUMP 2B Logic	
	[39]	PL/ RCI Cor	ACE 2-HS-77-6C, RCDT PUMP 2B at 2-B DT PUMP 2B (2-PMP-77-6), 2-MCC-232-I mpartment 11D, 772/A10S, to the STOP p	KR-77-6-B, 3B, osition, AND	
		VEI	RIFY:		
· ·		Α.	Green Light OFF at 2-HS-77-6A, RCDT	PUMP 2B	
		В.	Red Light ON at 2-HS-77-6A, RCDT PUI	MP 2B	
	[40]	PR ST	ESS 2-HS-77-6B, RCDT PUMP 2B, OP Pushbutton, AND		
		VEI	RIFY:		
		Α.	Green Light ON at 2-HS-77-6A, RCDT P	UMP 2B	
		В.	Red Light OFF at 2-HS-77-6A, RCDT PL	JMP 2B	
	[40).1]	RELEASE the 2-HS-77-6B, RCDT PUN pushbutton.	MP 2B, START	
	[41]	PL/ to t	ACE 2-HS-77-6C, RCDT PUMP 2B, he START position, AND		
		VE	RIFY		
		A.	Green Light ON at 2-HS-77-6A, RCDT P	UMP 2B	
		В.	Red Light OFF at 2-HS-77-6A, RCDT PL	JMP 2B	

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6.11 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B Logic Test (continued)

NOTE

In the following steps, the Red and Green Lights at 2-HS-77-6A, RCDT PUMP 2B, will be de-energized. The Red Light at 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6), RCDT PUMP 2B (2-PMP-77-6), will not energize with the thermal overloads removed. Status of 2-PMP-77-6 logic circuit will be verified by visual observation of the motor contactor at 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6).

 PLACE Transfer Switch 2-XS-77-6, RCDT PUMP 2B at 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6), 2-MCC-232-BB, Compartment 11D, 772/A10S, to the AUX position, AND

VERIFY:

Α.	Green Light OFF at 2-HS-77-6A, RCDT PUMP 2B	
Β.	Red Light OFF at 2-HS-77-6A, RCDT PUMP 2B	
C.	By visual observation, motor contactor at 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6), is ENERGIZED.	

[43] **PLACE** 2-HS-77-6C, RCDT PUMP 2B, to the STOP position, **AND**

VERIFY by visual observation that the motor contactor is DE-ENERGIZED.

[44] **PLACE** 2-HS-77-6A, RCDT PUMP 2B, to the START position, **AND**

VERIFY by visual observation that the motor contactor remains DE-ENERGIZED.

[45] **PRESS and HOLD** 2-HS-77-6B, RCDT PUMP 2B, START Pushbutton, **AND**

VERIFY by visual observation that the motor contactor is ENERGIZED.

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6.11 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B Logic Test (continued)									
	STOP position,								
VERIFY by visual observation that the motor contactor remains ENERGIZED.									
	[47] PRESS 2-HS-77-6B, RCDT PUMP 2B, STOP Pushbutton, AND								
V C			VERIFY by visual observation that the motor contactor is DE-ENERGIZED.						
	[4	7.1]	RELEASE the 2-HS-77-6B, RCDT PUM pushbutton.	IP 2B, STOP					
[48] PLAC to the		PL/ to ti	ACE Transfer Switch 2-XS-77-6, RCDT PU he NORMAL position, AND	IMP 2B,					
		VE	RIFY:						
		Α.	Green Light ON at 2-HS-77-6A, RCDT PL	JMP 2B.					
		В.	Red Light OFF at 2-HS-77-6A, RCDT PU	MP 2B.					
	[49]	PL/ ST(ACE 2-HS-77-6A, RCDT PUMP 2B, to the DP/PULL-TO-LOCK position.						
	WARNING								
Arc	Arc Flash PPE per TI-300 will be required for steps 6.11[50] through 6.11[56].								

- [50] PLACE 2-BKR-77-6-B, RCDT PUMP 2B (2-PMP-77-6),
 2-MCC-232-B-B, Compartment. 11D, 772/A10S, to the OFF position.
- [51] PULL 2-MCC-232-B-B, Compartment. 11D.
- [52] **ENSURE** locking tabs engage to prevent bucket from re-engaging.
- [53] **PERFORM** live-dead-live check on load.

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6.11	2-PM Test	P-77 (con	7-6, REACTOR COOLANT DRAIN TANK ntinued)	(PUMP 2B Logic	
	[54]	RE PU	MOVE the Thermal Overloads (3) for 2-B (MP 2B (2-PMP-77-6).	3KR-77-6-B, RCDT	
	[55]	RE	INSTALL 2-MCC-232-B-B, Compartmen	it. 11D.	
·	[56]	PL ON	ACE 2-BKR-77-6-B, RCDT PUMP 2B (2- I position.	-PMP-77-6) to the	
	[57]	REMOVE the jumper with Test Switch, labeled TS-10, from Terminal Point 9 and Terminal Point 10 of 2-LS-77-1E, REACT. COOLANT DR TK PUMPS OFF & VLV CLOSES, in Papel 0-L-2	led TS-10, from -LS-77-1E, VLV CLOSES, in		
		T G	HOI U-L-2.		1st
					CV
	[58]	REMOVE the jumper with Test Switch, labeled TS-1 Terminal Point 7 and Terminal point 8 of 2-LS-77-1B	led TS-11, from -S-77-1B/D, in Panel 0-L-2		
`					1st
				CV	
	[59]	REMOVE the jumper with Test Switch, labeled TS-16, between Terminal Point 1 and Terminal point 2 of 2-LS-77- REACT. COOLANT DR TK PUMPS OFF & VLV CLOSES, Papel 0-L-2	led TS-16, nt 2 of 2-LS-77-1E, VLV CLOSES, in		
		i u			1st
					CV
	[60]	PL. CN	ACE 2-HS-77-9A, RCDT PMPS TO TDC ITMT, in the CLOSE position, AND	CT CIV-ØA IN	
		VE CC	RIFY 2-FCV-77-9, RCDT PUMP DISCHA NTROL is CLOSED.	ARGE FLOW	
	[61]	PL CN	ACE 2-HS-77-10A, RCDT PMPS TO TD ITMT in the CLOSE position, AND	CT CIV-ØA OUT	
		VE CC	RIFY 2-FCV-77-10, RCDT PUMP DISCH NTROL is CLOSED.	IARGE FLOW	

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6.12 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A, Operation

NOTE			
Subsection 6.10 must be performed prior to this subsection.			
[1] VERI have	FY prerequisites listed in Section 4.0 for subsection 6.12 been completed.		
[2] PER I	FORM the following prior to beginning this Subsection:		
[2.1]	LIFT Wire RCD2 from Terminal Point 11 on Terminal Board L7 in Panel 0-L-2.		
		1st	
		CV	
~	NOTE		
TS-17 will simulate a Normal Level in the RCDT for 2-LCV-77-415, RCDT LEVEL CONTROL, when placed in the ON position and will simulate a Hi Level when placed in the OFF position.			
[2.2]	INSTALL a jumper with test switch in the ON position, labeled TS-17, between Wire RCD2 and Terminal Point 10 on Terminal Board L7 in Panel 0-L-2.	1st CV	
[2.3]	ENSURE Pressurizer Relief Tank (PRT) level is \geq 50% as indicated on 2-LI-68-300, PRT LEVEL, 2-M-4.		
[2.4]	ENSURE the Liquid Radwaste System is in service.		
[2.5]	ENSURE the Waste Gas Vent Header is in service.		
[2.6]	ENSURE measures are in place to dispose of water from Reactor Building Floor & Equipment Drain Sump.		
[2.7]	ENSURE the Reactor Coolant Drain Tank is drained to approximately 0% as indicated on 2-LI-77-1, REACT. COOLANT DR TK LEVEL INDICATOR, Panel 0-L-2.		

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6.12 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A, Operation (continued)

[2.8] **INSTALL** an ultrasonic flowmeter (0-100 GPM range) on the vertical run of three inch pipe prior to 2-ISV-62-949, HOLDUP TANK B WDS RCDT INLET ISOL, 713/A10S.

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- [2.9] **INSTALL** M&TE Pressure Gauge downstream of 2-TV-77-527, RCDT PUMP 2A SUCT TEST VENT.
- [3] **VERIFY** Annunciator Window 11, REACTOR COOLANT DRAIN TANK HI-HI LEVEL LO-LO LEVEL UNIT 2, at XA/1098, Panel 0-L-2, is in ALARM (**ACC CRIT**).
- [4] **PLACE** TS-17, at Terminal Board L7 in Panel 0-L-2, to the OFF position, to simulate a Hi level in the RCDT.
- [5] **PLACE** 2-HS-77-415, RCDT LEVEL CNTL, to the OPEN position, **AND**

VERIFY 2-LCV-77-415, RCDT LEVEL CONTROL OPENS.

NOTES

- 1) During the performance of this subsection, Primary Makeup Water (PMW) will be added to 2-TANK-77-1, REACTOR COOLANT DRAIN TANK, from 2-TANK-68-PRT, PRESSURIZER RELIEF TANK.
- 2) Mark step 6.12[6] N/A if no additional PMW is needed throughout the performance of this subsections.
 - [6] **IF** 2-TANK-68-PRT, PRESSURIZER RELIEF TANK level falls below 20% during the performance of this subsection, **THEN**

PLACE 2-HS-68-303A, PRI WATER TO PRT to OPEN until level of 2-TANK-68-PRT, PRESSURIZER RELIEF TANK rises to at least 50% level indicated on 2-LI-68-300, PRT LEVEL, **THEN**

PLACE 2-HS-68-303A, PRI WATER TO PRT to CLOSE.

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6.12	2-PMI Opera	P-77 atior	-4, REACTOR COOLANT DRAIN TANK P	UMP 2A,
[7] PLACE 2-HS-68-310A, PRT DRAIN TO RCDT, at 2-M-5, to the OPEN position, AND				, at 2-M-5, to
		VE I RC	RIFY 2-FCV-68-310, PRESSURIZER RELIE DT is OPEN.	EF TANK TO
	[8]	VE I DR	RIFY Annunciator Window 11, REACTOR C AIN TANK HI-HI LEVEL LO-LO LEVEL UNI	COOLANT T 2, CLEARS.
	[9]	PL/ pos	ACE 2-HS-68-310A, PRT DRAIN TO RCDT ition, AND	, to the CLOSE
		VE I RC	RIFY 2-FCV-68-310, PRESSURIZER RELIE DT is CLOSED.	EF TANK TO
			NOTE	·······
The for the	ollowing Reacto	step r Bui	will drain water from 2-TANK-77-1, REACT Iding Floor & Equipment Drain Sump.	OR COOLANT DRAIN TANK
·	[10]	PL/ CN	ACE 2-HS-77-3, RCDT TO RB FLR/EQDRN TL, on Panel 0-L-2, to the OPEN position, A	N SUMP FLOW
		VE I OP	RIFY 2-FCV-77-3, RCDT TO RB FLR/EQ D EN.	RN SUMP is
	[10	0.1]	VERIFY Annunciator Window 11, REAC DRAIN TANK HI-HI LEVEL LO-LO LEVE ALARMS.	FOR COOLANT L UNIT 2,
	[11] PLACE 2-HS-77-3, RCDT TO RB FLR/EQDRN SUMP FLOW CNTL, to the CLOSE position, AND		I SUMP FLOW	
		VE CLO	RIFY 2-FCV-77-3, RCDT TO RB FLR/EQ D DSED.	RN SUMP is
	[12]	PL/ pos	ACE 2-HS-68-310A, PRT DRAIN TO RCDT ition, AND	, to the OPEN
		VE I RC	RIFY 2-FCV-68-310, PRESSURIZER RELIE DT is OPEN.	EF TANK TO

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	WBN Unit 2	Liquid Waste Proces	Liquid Waste Processing System	
	Data	Package: Page of		Date
3.12 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A, Operation (continued)			PUMP 2A,	
	[13]	VERIFY Annunciator Window DRAIN TANK HI-HI LEVEL LC (ACC CRIT).	11, REACTOR D-LO LEVEL UN	COOLANT NT 2, CLEARS
	[14]	CONTINUE to fill 2-TANK-77- TANK with water from 2-TANK RELIEF TANK.	1, REACTOR C <-68-PRT, PRE	OOLANT DRAIN SSURIZER
	[15]	VERIFY Annunciator Window DRAIN TANK HI-HI LEVEL LC (ACC CRIT).	11, REACTOR D-LO LEVEL UN	COOLANT NIT 2, ALARMS
	[16]	PLACE 2-HS-68-310A, PRT [position, AND	DRAIN TO RCD	T, to the CLOSE
	VERIFY 2-FCV-68-310, PRESSURIZER RELIEF TANK TO RCDT is CLOSED.			
		N	OTE	
The f		step will drain water from 2-TA	NK-77-1, REAC	TOR COOLANT DRAIN TANK

[17] **PLACE** 2-HS-77-3, RCDT TO RB FLR/EQDRN SUMP FLOW CNTL, to the OPEN position, **AND**

VERIFY 2-FCV-77-3, RCDT TO RB FLR/EQ DRN SUMP is OPEN.

- [17.1] **VERIFY** Annunciator Window 11, REACTOR COOLANT DRAIN TANK HI-HI LEVEL LO-LO LEVEL UNIT 2, CLEARS.
- [18] **PLACE** 2-HS-77-3, RCDT TO RB FLR/EQDRN SUMP FLOW CNTL, to the CLOSE position, **AND**

VERIFY 2-FCV-77-3, RCDT TO RB FLR/EQ DRN SUMP is CLOSED.

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	Data	Package: Page of	Date
6.12	2-PM Oper	P-77-4, REACTOR COOLANT DRAIN TANK ation (continued)	PUMP 2A,
ň	[19]	RECORD level in 2-TANK-77-1, REACTOR COOLANT DRAIN TANK from Level Indicator 2-LI-77-1, REACT. COO INDICATOR, on Panel 0-L-2.	DLANT DR TK LEVEL
·		2-LI-77-1	%
	[20]	PLACE 2-HS-77-9A, RCDT PMPS TO TDC CNTMT, on 2-M-15, in the OPEN position un RCDT PUMP DISCHARGE FLOW CONTRO OPEN, THEN	T CIV-ØA IN htil 2-FCV-77-9, DL, is FULLY
		RELEASE 2-HS-77-9A, RCDT PMPS TO TE CNTMT to the A AUTO position.	DCT CIV-ØA IN
	[21]	PLACE 2-HS-77-10A, RCDT PMPS TO TDO CNTMT on 2-M-15, in the OPEN position, A	CT CIV-ØA OUT ND
		VERIFY 2-FCV-77-10, RCDT PUMP DISCH CONTROL, is OPEN.	ARGE FLOW
		NOTE	
The	following	steps align the discharge of the Reactor Coo	lant Drain Tank pumps to

[22] ENSURE adequate capacity (≤ 90% level) in 2-TANK-62-1B, HOLDUP TANK B, AND

RECORD level from Level Indicating Switch 2-LIS-62-146, HOLDUP TANK B LEVEL ALARM, on Panel 0-L-2.

2-LIS-62-146 %

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6.12	2-PM Oper	IP-77-4, REACTOR COOLANT DRAIN TANK F ation (continued)	PUMP 2A,
	[23]	ENSURE the following valves are OPEN:	
		A. 2-ISV-62-949, HOLDUP TANK B WDS R ISOL, 713/A10S.	
		B. 2-ISV-62-951, HOLDUP TANK B HDR IN 713/A9S.	ILET ISOL,
		C. 2-TV-77-527, RCDT PUMP 2A SUCT TE	ST VENT
		NOTES	
1)	The follo from the	owing steps will verify flow paths from the PRT to RCDT pump discharge to Holdup Tank B.	o the RCDT pump suction and
2)	During th transient	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required.	30], visual observation of
2)	During th transient [24]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the S	30], visual observation of
2)	During th transient [24]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the S AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS.	30], visual observation of
2)	During th transient [24] [25]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the S AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND	30], visual observation of START position, DRAIN TANK T, to the OPEN
2)	During th transient [24] [25]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the 3 AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND VERIFY 2-FCV-68-310, PRESSURIZER REL RCDT is OPEN.	30], visual observation of START position, DRAIN TANK
2)	During th transient [24] [25]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the S AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND VERIFY 2-FCV-68-310, PRESSURIZER REL RCDT is OPEN. RECORD flow from M&TE installed upstream HOLDUP TANK B WDS RCDT INLET ISOL:	30], visual observation of START position, DRAIN TANK T, to the OPEN IEF TANK TO of 2-ISV-62-949,
2)	During th transient [24] [25]	 he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the 3 AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND VERIFY 2-FCV-68-310, PRESSURIZER REL RCDT is OPEN. RECORD flow from M&TE installed upstream HOLDUP TANK B WDS RCDT INLET ISOL: M&TE Cal Due Date 	30], visual observation of START position, DRAIN TANK T, to the OPEN IEF TANK TO of 2-ISV-62-949,
2)	During th transient [24] [25]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the 3 AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND VERIFY 2-FCV-68-310, PRESSURIZER REL RCDT is OPEN. RECORD flow from M&TE installed upstream HOLDUP TANK B WDS RCDT INLET ISOL: M&TE Cal Due Da	30], visual observation of START position, DRAIN TANK T, to the OPEN IEF TANK TO of 2-ISV-62-949, ate GPM
2)	During th transient [24] [25]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the 3 AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND VERIFY 2-FCV-68-310, PRESSURIZER REL RCDT is OPEN. RECORD flow from M&TE installed upstream HOLDUP TANK B WDS RCDT INLET ISOL: M&TE Cal Due Da	30], visual observation of START position, DRAIN TANK T, to the OPEN IEF TANK TO of 2-ISV-62-949, ate GPM
2)	During th transient [24] [25] [26]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the 3 AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND VERIFY 2-FCV-68-310, PRESSURIZER REL RCDT is OPEN. RECORD flow from M&TE installed upstream HOLDUP TANK B WDS RCDT INLET ISOL: M&TE Cal Due Da RECORD the following:	30], visual observation of START position, DRAIN TANK T, to the OPEN IEF TANK TO of 2-ISV-62-949, ate GPM
2)	During th transient [24] [25] [26] [27]	he performance of Steps 6.12[24] through 6.12[t and steady state vibrations is required. PLACE 2-HS-77-4A, RCDT PUMP 2A to the 3 AND VERIFY 2-PMP-77-4, REACTOR COOLANT PUMP 2A STARTS. PLACE 2-HS-68-310A, PRT DRAIN TO RCD position, AND VERIFY 2-FCV-68-310, PRESSURIZER REL RCDT is OPEN. RECORD flow from M&TE installed upstream HOLDUP TANK B WDS RCDT INLET ISOL: M&TE Cal Due Da RECORD the following: A. M&TE Pressure Gauge (Suction):	30], visual observation of START position, DRAIN TANK T, to the OPEN IEF TANK TO of 2-ISV-62-949, ate GPM psig.

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6.12	2-PMP-77 Operatior	-4, REACTOR COOLANT DRAIN TANK I (continued)	PUMP 2A,	
	[28] CO	MPLETE Data Sheet 1		
	[28.1]	VERIFY Adjusted flowrate from Data SI Pump 2A is greater than or equal to 50 (ACC CRIT)	heet 1 for RCDT GPM.	:
	[28.2]	VERIFY Adjusted TDH from Data Shee Pump 2A is greater than or equal to 17 (ACC CRIT)	et 1 for RCDT 5 feet.	
		NOTE		
The fol Holdup	lowing step Tank 1B.	verifies the flow path from the Reactor Co	polant Drain Tank to C	VCS
	[29] VE PU TAI	RIFY 2-PMP-77-4, REACTOR COOLANT MP 2A, discharges effluent to 2-TANK-62- NK B by flow indication at M&TE flowmete	DRAIN TANK 1B, HOLDUP r.(ACC CRIT)	
	[30] PL AN	ACE 2-HS-77-4A, RCDT PUMP 2A to the D	STOP position,	
	VE PU	RIFY 2-PMP-77-4, REACTOR COOLANT MP 2A STOPS.	DRAIN TANK	
	[31] RE	MOVE the ultrasonic flowmeter.		1st
				CV
	[32] RE	MOVE the M&TE Pressure Gauge.		
	[32] RE	MOVE the M&TE Pressure Gauge.	· · ·	CV 1st

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6.12	2-PM Oper	P-77-4, REACTOR COOLANT DRAIN TANK P ation (continued)	UMP 2A,	
	[34]	LAND Wire RCD2 on Terminal Point 11 on Te	rminal Board L7	
				1st
		·		CV
	[35]	PLACE 2-HS-77-4A, RCDT PUMP 2A, REAC TK PUMP A, to the STOP/PULL-TO-LOCK po	T COOLANT DR sition.	
	[36]	VERIFY no excessive vibration of the piping s components associated with the performance subsection was observed.	ystem and of this	

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6.13 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B, Operation

		NOTE	
Subsection 6	6.11 mu	ust be performed prior to this Subsection.	
[1]	VERI have	IFY prerequisites listed in Section 4.0 for Subsection been completed.	n 6.13
[2]	PERI	FORM the following prior to beginning this Subsection	on:
[2	2.1]	ENSURE Pressurizer Relief Tank (PRT) level is ≥ as indicated on 2-LI-68-300, PRT LEVEL, 2-M-4.	50%
[2	2.2]	ENSURE the Liquid Radwaste System is in service	9
[2	2.3]	ENSURE the Waste Gas Vent Header is in service).
[2	2.4]	INSTALL M&TE Pressure Gauge downstream of 2-TV-77-526, RCDT PUMP 2B SUCT TEST VENT	·
[3]	INST on th 2-ID\	ALL an ultrasonic flowmeter (0-200 GPM range) he horizontal run of three inch pipe downstream of V-77-523, RCDT DISCH TO TDCT ISOL, 713/A12V	
	M&TÌ	E Cal Due Date	
F 4 1		IEV Assessment of AMERICAN ANT	•

[4] **VERIFY** Annunciator Window 11, REACTOR COOLANT DRAIN TANK HI-HI LEVEL LO-LO LEVEL UNIT 2. at XA/1098, Panel 0-L-2, is CLEAR.

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6.13 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B, Operation (continued)

[5] RECORD level in 2-TANK-77-1, REACTOR COOLANT DRAIN TANK, from Level Indicator 2-LI-77-1, REACT. COOLANT DR TK LEVEL INDICATOR, on Panel 0-L-2.

2-LI-77-1 %

NOTE

The following steps align the discharge of the Reactor Coolant Drain Tank pumps to Tank 0-TANK-77-2, TRITIATED DRAIN COLLECTOR TANK.

[6] **PLACE** 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT, on 2-M-15, in the OPEN position until 2-FCV-77-9, RCDT PUMP DISCHARGE FLOW CONTROL, is FULLY OPEN, **THEN**

RELEASE 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT to the A AUTO position.

[7] **PLACE** 2-HS-77-10A, RCDT PMPS TO TDCT CIV-ØA OUT CNTMT on 2-M-15, in the OPEN position, **AND**

VERIFY 2-FCV-77-10, RCDT PUMP DISCHARGE FLOW CONTROL, is OPEN.

[8] **ENSURE** adequate capacity in Tank (≤ 90% level) 0-TANK-77-2, TRITIATED DRAIN COLLECTOR TANK, **AND**

RECORD level from Level Indicating Switch 0-LIS-77-31A/B, TRITIATED DR COLL TK HI LEVEL ALARM SW, on Panel 0-L-2.

0-LIS-77-31A/B %

[9] **OPEN** 2-IDV-77-523, RCDT DISCH TO TDCT ISOL, 713/A12V.

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6.13 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B, Operation (continued)

[10] **PLACE** 2-HS-77-415, RCDT LEVEL CNTL, to the OPEN position **AND**

VERIFY 2-LCV-77-415, RCDT LEVEL CONTROL OPENS.

NOTES

- 1) During the performance of Subsection 6.13, Primary Makeup Water (PMW) will be supplied to the Reactor Coolant Drain Tank pump suction from 2-TANK-68-PRT, PRESSURIZER RELIEF TANK.
- 2) Mark step 6.13[11] N/A if no additional PMW is needed throughout the performance of this subsections.
- 3) The following steps will verify the flow path from the RCDT pump discharge to the Tritiated Drain Collector Tank.
 - [11] **IF** 2-TANK-68-PRT, PRESSURIZER RELIEF TANK level falls below 20% during the performance of this subsection, **THEN**

PLACE 2-HS-68-303A, PRI WATER TO PRT to OPEN until level of 2-TANK-68-PRT, PRESSURIZER RELIEF TANK rises to at least 50% level indicated on 2-LI-68-300, PRT LEVEL, **THEN**

PLACE 2-HS-68-303A, PRI WATER TO PRT to CLOSE.

- [12] **CLOSE** 2-ISV-77-908, RB SUMP PUMP DISCH HDR TO TDCT ISOL, 713/A11W.
- [13] **PLACE** 2-HS-68-310A, PRT DRAIN TO RCDT, at 2-M-5, to the OPEN position, **AND**

VERIFY 2-FCV-68-310, PRESSURIZER RELIEF TANK TO RCDT is OPEN.

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6.13 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B, Operation (continued)

	NOTE
During the pe and steady st	rformance of Steps 6.13[14] through 6.13[21] visual observation of transient ate vibrations is required.
[14]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the START position, AND
	VERIFY 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B STARTS.
[15]	RECORD flow from M&TE installed downstream of 2-IDV-77-523, RCDT DISCH TO TDCT ISOL.
	Flow GPM
[16]	RECORD the following:
	A. M&TE Pressure Gauge (Suction): psig
	B. 2-PI-77-8 (Discharge): psig
[17]	COMPLETE Data Sheet 2
[17	 VERIFY Adjusted flowrate from Data Sheet 2 for RCDT Pump 2B is greater than or equal to 150 GPM. (ACC CRIT)
[17	 VERIFY Adjusted TDH from Data Sheet 2 for RCDT Pump 2B is greater than or equal to 175 feet. (ACC CRIT)
	NOTE
The following Tritiated Drair	step verifies the flow path from the Reactor Coolant Drain Tank to the Collector Tank.

[18] **VERIFY** 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B discharges effluent to 0-TANK-77-2, TRITIATED DRAIN COLLECTOR TANK by flow indicated at M&TE flowmeter. (**ACC CRIT**)

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6.13	2-PMI Opera	P-77-6, REACTOR COOLANT DRAIN TANK ation (continued)	PUMP 2B,
		NOTE	
Steps and o check	6.13[19 ne pum valve s] through 6.13[20] confirm that when two RCD o trips, the driving head of the operating pump hut does not create significant fluid transients.	T pumps are running in parallel slamming the tripped pump's
·	[19]	PLACE 2-HS-77-4A, RCDT PUMP 2A to the and VERIFY 2-PMP-77-4, REACTOR COOL TANK PUMP 2A STARTS	START position ANT DRAIN
	[19	0.1] CONTINUE to run 2-PMP-77-4, REAC DRAIN TANK PUMP 2A for approxima	TOR COOLANT tely 1 minute:
	[20]	PLACE 2-HS-77-4A, RCDT PUMP 2A to the and VERIFY 2-PMP-77-4, REACTOR COOL TANK PUMP 2A STOPS.	STOP position ANT DRAIN
	[21]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the AND	STOP position,
		VERIFY 2-PMP-77-6, REACTOR COOLANT PUMP 2B STOPS.	
	[22]	PLACE 2-HS-77-4A, RCDT PUMP 2A, to the STOP/PULL-TO-LOCK position.	
	[23]	PLACE 2-HS-77-6A, RCDT PUMP 2B, to the STOP/PULL-TO-LOCK position.	
	[24]	PLACE 2-HS-68-310A, PRT DRAIN TO RCE position, AND	DT, to the CLOSE
		VERIFY 2-FCV-68-310, PRESSURIZER REI RCDT is CLOSED.	
	[25]	CLOSE 2-IDV-77-523, RCDT DISCH TO TD	CT ISOL.
	[26]	REMOVE the ultrasonic flowmeter installed or run of three inch pipe downstream of 2-IDV-7 DISCH TO TDCT ISOL	on the horizontal 7-523, RCDT
			lst

CV

Data Package: Page of D 5.13 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B, Operation (continued)	ate
5.13 2-PMP-77-6, REACTOR COOLANT DRAIN TANK PUMP 2B, Operation (continued)	
[27] REMOVE the M&TE Pressure Gauge.	
	1st
	CV
[28] OPEN 2-ISV-62-949, HOLDUP TANK B WDS RCDT INLET ISOL, 713/A8S.	
[29] VERIFY OPEN 2-ISV-62-951, HOLDUP TANK B HDR INLET ISOL, 713/A8S.	
[30] VERIFY no excessive vibration of the piping system and components associated with the performance of this subsection was observed	

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6.14 Refueling Canal to Refueling Water Storage Tank Via Reactor Coolant Drain Tank Flow Path Verification

NOTE The discharge of the Reactor Coolant Drain Tank Pumps is initially lined up to the CVCS Holdup Tanks in Subsection 6.13. **VERIFY** prerequisites listed in Section 4.0 for Subsection 6.14 [1] have been completed. [2] **PERFORM** the following prior to beginning this Subsection: [2.1] VERIFY at least 12" of water is present in the Unit 2 Refueling Canal for transfer to the Holdup Tank B via the Reactor Coolant Drain Tank. [2.2] **ENSURE** the Waste Gas Vent Header is in service. [2.3] **ENSURE** the Nitrogen Supply Header is in service. [3] **INSTALL** an ultrasonic flowmeter (0-200 GPM range) on the vertical run of four inch pipe upstream of 2-DRV-77-501, REFUELING CANAL DR SO. [4] **INSTALL** an ultrasonic flowmeter (0-200 GPM range) on the horizontal run of three inch pipe upstream of 2-ISV-72-500, SPENT FUEL PURI CONN. VERIFY Annunciator Window 11, REACTOR COOLANT [5] DRAIN TANK HI-HI LEVEL LO-LO LEVEL UNIT 2, at XA/1098 Panel 0-L-2, is CLEAR. [6] **RECORD** level in 2-TANK-77-1, REACTOR COOLANT DRAIN TANK, from Level Indicator 2-LI-77-1, REACT COOL DR TK LVL IND, on Panel 0-L-2.

2-LI-77-1 %

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6.14 Refueling Canal to Refueling Water Storage Tank Via Reactor Coolant Drain Tank Flow Path Verification (continued)

[7] **PLACE** 2-HS-68-310A, PRT DRAIN TO RCDT, at 2-M-5, to the OPEN position, **AND**

VERIFY 2-FCV-68-310, PRESSURIZER RELIEF TANK TO RCDT is OPEN.

CAUTION

Do not allow the Reactor Coolant Drain Tank pressure to exceed 6 psi or RCP seal damage may occur.

[8] **PLACE** 2-HS-68-310A, PRT DRAIN TO RCDT, to the CLOSE position when level in the Reactor Coolant Drain Tank (RCDT) increases to approximately 90%, **AND**

VERIFY 2-FCV-68-310, PRESSURIZER RELIEF TANK TO RCDT is CLOSED.

[8.1] **RECORD** level from 2-LI-77-1, REACT. COOLANT DR TK LEVEL INDICATOR:

2-LI-77-1 %

[9] **PLACE** 2-HS-77-19, RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT, at 2-M-15, to the CLOSE position, **AND**

VERIFY 2-FCV-77-19, RCDT TO VENT HDR FLOW CONTROL is CLOSED.

[10] PLACE 2-HS-77-20, N2 TO RCDT CIV-ØA OUT CNTMT, at 2-M-15, to the OPEN position until 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL is FULLY OPEN, THEN

RELEASE 2-HS-77-20, N2 TO RCDT CIV-ØA OUT CNTMT to the A AUTO position.

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position.

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6.14 Refueling Canal to Refueling Water Storage Tank Via Reactor Coolant Drain Tank Flow Path Verification (continued)

CAUTION Excessive draining rate could create a negative Pressure in the RCDT causing the tank to collapse. A. PLACE 2-HS-77-4A, RCDT PUMP 2A on Panel 0-L-2, to the PULL-P-AUTO position, AND VERIFY 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A STARTS. MONITOR 2-PT-77-2, REACT COOLANT DR TK [10.1] PRESSURE XMTR to **ENSURE** RCDT pressure **REMAINS** positive. [10.2] IF RCDT pressure becomes negative, THEN PLACE 2-HS-77-4A, RCDT PUMP 2A on Panel 0-L-2, to the STOP position, AND VERIFY 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A STOPS. [11] VERIFY 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A STOPS on low level cutoff, AND **RECORD** RCDT level from 2-LI-77-1, REACT. COOLANT DR TK LEVEL INDICATOR: 2-LI-77-1 % [12] PLACE 2-HS-77-20, N2 TO RCDT CIV-ØA OUT CNTMT, to the CLOSE position, AND VERIFY 2-FCV-77-20, RCDT N2 SUPPLY FLOW CONTROL is CLOSED. [13] ENSURE 2-HS-77-16A, RCDT TO GAS ANAL CIV-ØA IN CNTMT, at 2-M-15, is in the CLOSE position. PLACE 2-HS-77-6A, RCDT PUMP 2B, to the PULL-P AUTO [14]

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6.14 Refueling Canal to Refueling Water Storage Tank Via Reactor Coolant Drain Tank Flow Path Verification (continued)

- [15] **OPEN** 2-DRV-77-501, REFUELING CANAL DR SO, 702/AZ270.
- [16] **OPEN** 2-IDV-77-502, REFUEL CANAL DR ISOL, 702/AZ270.

NOTE

The following step aligns the discharge of the Reactor Coolant Drain Tank pumps to 2-TANK-63-46, REFUELING WATER STORAGE TANK.

- [17] OPEN 2-IDV-77-521, RCDT DISCH HEADER TO RWST.
- [18] **RECORD** flow from M&TE installed upstream of 2-DRV-77-501, REFUELING CANAL DR SO (ACC CRIT).

Flow _____ GPM

NOTE

During the performance of Steps 6.14[19] through 6.14[22], visual observation of transient and steady state vibrations is required.

- [19] **VERIFY** 2-PMP-77-4, REACTOR COOLANT DRAIN TANK PUMP 2A STARTS as RCDT level INCREASES as indicated on Level Indicator 2-LI-77-1, REACT. COOLANT DR TK LEVEL INDICATOR.
- [20] **RECORD** flow from M&TE installed upstream of 2-ISV-72-500, SPENT FUEL PURI CONN (**ACC CRIT**).

Flow _____ GPM

l	WBN Jnit 2		Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 139 of 218	
	Data	Pacl	kage: Page of	Date	
14	Refu Coola	eling ant E	I Canal to Refueling Water Storage Tani Drain Tank Flow Path Verification (conti	< Via Reactor nued)	
	[21]	CL	OSE the following valves:		
		Α.	2-DRV-77-501, REFUELING CANAL DR	R SO	
		В.	2-IDV-77-502, REFUEL CANAL DR ISO	L	. .
	[22]	VE	RIFY the following when the RCDT is drain	ned:	
		Α.	2-PMP-77-4, REACTOR COOLANT DR/ 2A STOPS.	AIN TANK PUMP	
		Β.	2-PMP-77-6, REACTOR COOLANT DR/ 2B STOPS.	AIN TANK PUMP	
	[23]	RE RE	CORD RCDT level from Level Indicator 2- ACT. COOLANT DR TK LEVEL INDICAT	LI-77-1, OR:	
			2-LI-77-1 _	%	
	[24]	PL OU TO	ACE 2-HS-77-19, RCDT TO WDS VENT H IT CNTMT, in the OPEN position until 2-FC VENT HDR FLOW CONTROL is FULLY (HDR CIV-ØA CV-77-19, RCDT OPEN, THEN	
		RE OU	LEASE 2-HS-77-19, RCDT TO WDS VEN IT CNTMT to the A AUTO position.	IT HDR CIV-ØA	
			NOTE		
The fo	ANT D	step RAII	os verify the function of Annunciator XA/10 N TK HI PRESS.	98, Window 12, REAC	CTOR
	[25]	VE CC	RIFY Annunciator XA/1098, Window 12, R OCLANT DRAIN TNK HI PRESS, is CLEAF	REACTOR R.	
	[26]	RE RE	CORD the as-found setting of 2-PS-77-2, ACT COOLANT DR TK HI PRESSURE, a	t 0-L-2.	
				As-Found Setting	

	WBN Unit 2	Liquid Waste Processing Syste	em 2-PTI-077-01 Rev. 0000 Page 140 of 218	
	Data F	ackage: Page of	Date	
6.14	Refue Coola	ing Canal to Refueling Water Storage It Drain Tank Flow Path Verification (Tank Via Reactor continued)	
	[27]	ADJUST 2-PS-77-2, REACTOR COOLA PRESSURE, setting until Annunciator X REACTOR COOLANT DRAIN TK HI PF (ACC CRIT).	ANT DRAIN TNK HI A/1098, Window 12, RESS, ALARMS	
	[28]	RETURN 2-PS-77-2, REACT COOLAN HI PRESSURE, setting to the as-found s	F DRAIN TNK setting.	
			As-Left Setting	
	[29]	VERIFY Annunciator Window XA/1098, REACTOR COOLANT DRAIN TK HI PF	Window 12, RESS, CLEARS.	
	[30]	REMOVE ultrasonic flowmeter installed three inch pipe upstream of 2-ISV-72-50 CONN.	on horizontal run of 0, SPENT FUEL PURI	
			15	st
			C	V
	[31]	REMOVE ultrasonic flowmeter installed inch pipe upstream of 2-DRV-77-501, R SO.	on vertical run of four EFUELING CANAL DR	
			15	st
			C'	V
	[32]	CLOSE 2-IDV-77-521, RCDT DISCH HI	EADER TO RWST.	
	[33]	VERIFY no excessive vibration of the pi components associated with the perforn subsection was observed.	ping system and nance of the	

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Date

6.15 Reactor Coolant Drain Tank Pump Discharge to Flood Mode Boration Makeup System Flow Path Verification

- [1] **ENSURE** prerequisites listed in Section 4.0 for Subsection 6.15 have been completed.
- [2] **ENSURE** Annunciator Window 11, REACTOR COOLANT DRAIN TANK HI-HI LEVEL LO-LO LEVEL UNIT 2, at XA/1098, Panel 0-L-2, is clear.
- [3] **RECORD** RCDT level from Level Indicator 2-LI-77-1, REACT. COOLANT DR TK LEVEL INDICATOR:

2-LI-77-1 _____%

NOTE

The following steps align the discharge of the Reactor Coolant Drain Tank pumps to Tank 0-TANK-84-110, FLOOD MODE AUXILIARY BORATION MAKEUP TANK.

[4] **PLACE** 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT, on 2-M-15, in the OPEN position until 2-FCV-77-9, RCDT PUMP DISCHARGE FLOW CONTROL, is FULLY OPEN, **THEN**

RELEASE 2-HS-77-9A, RCDT PMPS TO TDCT CIV-ØA IN CNTMT to the A-AUTO position.

[5] ENSURE adequate capacity (≤20%) in Tank 0-TANK-84-110, FLOOD MODE AUXILIARY BORATION MAKEUP TANK and RECORD level from Level Indicator 0-LI-84-1, FLOOD MODE AUX BORATION MAKEUP TANK LEVEL, on Panel 0-L-354, 760/A5V.

0-LI-84-1 %

- [6] **OPEN** 2-ISV-84-530, RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATION, 713/A12W.
- [7] **PLACE** 2-HS-77-415, RCDT LEVEL CNTL, to the OPEN position, **AND**

VERIFY 2-LCV-77-415, RCDT LEVEL CONTROL OPENS.

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Date

6.15 Reactor Coolant Drain Tank Pump Discharge to Flood Mode Boration Makeup System Flow Path Verification (continued)

NOTES

- 1) During the performance of Subsection 6.15, Primary Makeup Water (PMW) will be supplied to the Reactor Coolant Drain Tank pump suction from 2-TANK-068-PRT, PRESSURIZER RELIEF TANK.
- 2) Mark step 6.15[8] N/A if no additional PMW is needed throughout the performance of this subsections.
 - [8] **IF** Additional PMW needs be added to 2-TANK-68-PRT, PRESSURIZER RELIEF TANK during the performance of this subsection, **THEN**

PLACE 2-HS-68-303A, PRI WATER TO PRT to OPEN until level of 2-TANK-68-PRT, PRESSURIZER RELIEF TANK rises to an acceptable level indicated on 2-LI-68-300, PRT LEVEL, **THEN**

PLACE 2-HS-68-303A, PRI WATER TO PRT to CLOSE.

[9] **PLACE** 2-HS-68-310A, RCS FLOW CNTL PRT TO WDS RCDT, at 2-M-5, to the OPEN position, **AND**

VERIFY 2-FCV-68-310, PRESSURIZER RELIEF TANK TO RCDT, is OPEN.

NOTE

During the performance of Steps 6.15[10] through 6.15[12], visual observation of transient and steady-state vibrations is required.

[10] **PLACE** 2-HS-77-4A, REACT COOLANT DR TK PUMP 2A, to the START position, **AND**

VERIFY 2-PMP-77-4, RCDT PUMP 2A STARTS.

[11] **VERIFY** an INCREASE in level in TANK 0-84-110, FLOOD MODE AUXILIARY BORATION MAKEUP TANK on Level Indicator 0-LI-84-1, FLOOD MODE AUX BORATION MAKEUP TANK LEVEL (**ACC CRIT**).

0-LI-84-1 %

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	Data	Package: Page of	Date
.15	Reac Bora	tor Coolant Drain Tank Pump Discharge tion Makeup System Flow Path Verificati	to Flood Mode on (continued)
	[12]	PLACE 2-HS-77-4A, REACT COOLANT the STOP position, AND	DR TK PUMP 2A, to
		VERIFY 2-PMP-77-4, RCDT PUMP 2A S	TOPS
	[13]	PLACE 2-HS-68-310A, RCS FLOW CNTI RCDT, to the CLOSE position, AND	L PRT TO WDS
		VERIFY 2-FCV-68-310 is CLOSED.	
	[14]	CLOSE 2-ISV-84-530, RCDT PMPS DISC MODE AUX BORATION.	CH ISOL TO FLOOD
	[15]	PLACE 2-HS-77-415, RCDT LEVEL CNT position, AND	L, to the CLOSE
		VERIFY 2-LCV-77-415, RCDT LEVEL CC	ONTROL CLOSES.
	[16]	RECORD RCDT level from Level Indicato COOLANT DR TK LEVEL INDICATOR:	or 2-LI-77-1, REACT.
		2-LI-77-1%	
	[17]	CLOSE Valve 0-VTV-84-534, FLOOD MC MAKEUP TANK VENT, 757/A5V	DDE AUX BORATION
	[18]	REMOVE Spool Piece 2-SPPC-84-111, V SUPPLY TO FLOOD MODE BORATION, pump discharge line to Tank 0-TANK-84- AUXILIARY BORATION MAKEUP TANK,	VASTE DISPOSAL in the Unit 2 RCDT 110, FLOOD MODE , 757/A5W, AND
		RECORD WO#	
	[19]	VERIFY no excessive vibration of the pipi components associated with the performation	ing system and ance of this

subsection was observed.

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	Data	Package: Page of C)ate
6.16	CVC Tank	S Excess Letdown Heat Exchanger to Reactor Coolant Drain Flow Path Verification	
	[1] [,]	VERIFY prerequisites listed in Section 4.0 for Subsection 6.16 have been completed.	
	[2]	PERFORM the following prior to beginning this Subsection:	
	[2	2.1] ENSURE Reactor Coolant System is in service.	
	[2	2.2] ENSURE the Waste Gas Vent Header is in service.	
	[2	2.3] ENSURE the Nitrogen Supply Header is in service.	<u></u>
	[3]	VERIFY Annunciator Window 11, REACTOR COOLANT DRAIN TANK HI-HI LEVEL LO-LO LEVEL UNIT 2, at XA/1098 Panel 0-L-2, is CLEAR.	
	[4]	RECORD level in 2-TANK-77-1, REACTOR COOLANT DRAIN TANK, from Level Indicator 2-LI-77-1, REACT COOL DR TK LVL IND, on Panel 0-L-2.	
		2-LI-77-1 %	
	[5]	PLACE 2-HS-62-59A, EXCESS LTDN DIVERT, at 2-M-5, to the DIV position, AND	
		VERIFY 2-FCV-62-59, CVCS EXCESS LETDOWN DIVERT FLOW CNTL is DIVERTING flow to RCDT.	
	[6]	PLACE 2-HS-62-59A, EXCESS LTDN DIVERT, to the NOR position when level in the Reactor Coolant Drain Tank (RCDT) increases to approximately 80%, AND	
		VERIFY 2-FCV-62-59, CVCS EXCESS LETDOWN DIVERT FLOW CNTL is DIVERTING flow to SEAL RET.	

WBN Unit 2	Liquid Wast	e Processing System	2-PTI-077-01 Rev. 0000 Page 145 of 218		
Data	Package: Page	_ of	Date		
6.16 CVC Tank	S Excess Letdown H Flow Path Verificati	eat Exchanger to Rea on (continued)	ictor Coolant Drain		
[6	.1] RECORD leve TK LEVEL INI	RECORD level from 2-LI-77-1, REACT. COOLANT DR TK LEVEL INDICATOR, AND			
VERIFY that level has increased from when it was recorded in Step 6.16[4] (ACC CRIT).					
2-LI-77-1 %			· · · · · · · · · · · · · · · · · · ·		

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

Date

6.17 Alarms

- [1] **ENSURE** the following switches on Panel 0-L-2 are NOT in the "STOP/PULL-TO-LOCK" position:
 - A. 2-HS-77-4A, RCDT PUMP 2A.
 - B. 2-HS-77-6A, RCDT PUMP 2B.
- [2] **VERIFY** Annunciator Window 4, MOTOR LOCKED OUT, at XA/1098 Panel 0-L-2, is CLEAR.
- [3] **PLACE** 2-HS-77-4A, RCDT PUMP 2A ON-OFF, in the "STOP/PULL-TO-LOCK" position.
- [4] **VERIFY** Annunciator Window 4, MOTOR LOCKED OUT, at XA/1098 Panel 0-L-2, ALARMS (Acc Crit).
- [5] **PLACE** 2-HS-77-4A, RCDT PUMP 2A, REACT COOLANT DR TR PUMP A ON-OFF, in the "IN-MANUAL" position.
- [6] **VERIFY** Annunciator Window 4, MOTOR LOCKED OUT, at XA/1098, Panel 0-L-2, is CLEAR.
- [7] **PLACE** 2-HS-77-6A, RCDT PUMP 2B, in the "STOP/PULL-TO-LOCK" position.
- [8] **VERIFY** Annunciator Window 4, MOTOR LOCKED OUT, at XA/1098 Panel 0-L-2, ALARMS (Acc Crit).
- [9] **PLACE** 2-HS-77-6A, RCDT PUMP 2B, in the "IN-MANUAL" position.
- [10] **VERIFY** Annunciator Window 4, MOTOR LOCKED OUT, at XA/1098, Panel 0-L-2, is CLEAR.

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Date ____

7.0 POST PERFORMANCE ACTIVITIES

NOTE Post-performance steps may be performed in any order unless otherwise stated and should be completed as close in time as practicable to the end of the instruction performance. [1] **RELEASE** Caution orders on the following handswitches: 2-HS-77-4A, RCDT PUMP 2A Α. Caution Tag #_____ 2-HS-77-6A, RCDT PUMP 2B Β. Caution Tag # C. 2-HS-77-4C, RCDT PUMP 2A Caution Tag #_____ D. 2-HS-77-6C, RCDT PUMP 2B Caution Tag # [2] **VERIFY** that Appendix U, FINAL SWITCH LINEUP, has been completed. 1st IV VERIFY that Appendix AA, FINAL ELECTRICAL BREAKER [3] LINEUP, has been completed. 1st IV **VERIFY** that Appendix GG, FINAL VALVE LINEUP, has been [4] completed. 1st IV [5] 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 (M&TE) Log.

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Data Package:	Page of	Date
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7.0 **POST PERFORMANCE ACTIVITIES (continued)**

[6] **VERIFY** that Post test calibration of permanent plant instruments used to record quantitative acceptance criteria has been satisfactorily performed, **AND**

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

- [7] **NOTIFY** the Unit 2 US/SRO of the test completion and System alignment.
- [8] **NOTIFY** the Unit 1 US/SRO of the test completion and System alignment.

Date _____

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8.0 RECORDS

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A. QA Records

Completed Test Package

B. Non-QA Records

None

Appendix A (Page 1 of 2)

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)
FSAR AMENDMENT 101 SECTION 6.2.1			-
FSAR AMENDMENT 101 SECTION 6.2.4 (Including Table 6.2.4-1)			
FSAR AMENDMENT 101 SECTION 11.2			
FSAR AMENDMENT 101 TABLE 14.2-1 SHEET 28 OF 89			
FSAR AMENDMENT 101 TABLE 14.2-1 SHEET 83 of 89			
SMP-4.0			
SMP-6.0			
SMP-7.0			
SMP-8.0			
SMP-9.0			
N3-77C-4001			
WBN2-77C-4001			

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TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

Data Package: Page _____ of _____

Date _____

PROCEDURE/ INSTRUCTION	REVISION/ CHANGES	IMPACT Yes/No	INITIAL AND DATE (N/A for no change)
2-TSD-77-1 Rev 0, Liquid Waste Processing System			
2-TSD-88-5 Rev 1, Containment Isolation System			
SSD-2-PI-77-5 (Review against SSD-1-PI-77-5)			· · · · · · · · · · · · · · · · · · ·
SSD-2-PI-77-8 (Review against SSD-1-PI-77-8)			

.

Appendix B (Page 1 of 1)

TEMPORARY CONDITION LOG

Data Package: Page ____ of ____

Date _____

NOTE

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

ITEM No.	TEMPORARY CONDITION DESCRIPTION	PERFORMED		RETURNED TO NORMAL	
		Step No.	Perf. By/Date CV By/Date	Step No.	Returned By/Date CV By/Date
		-			
			· · · · · · · · · · · · · · · · · · ·		
	· · · · · · · · · · · · · · · · · · ·				

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PERMANENT PLANT INSTRUMENTATION LOG

Data Package: Page ____ of ____

Date _____

INSTRUMENT OR INSTRUMENT LOOP NO.	CAL DUE DATE	FILLED AND VENTED ¹	PLACED IN SERVICE ¹	USED QUAN ACC C	FOR TITATIVE RIT	POST-TEST CAL DATE ²	POST-TEST CALIBRATION ACCEPTABLE INITIAL/DATE ²
		INITIAL/DATE	INITIAL/DATE	YES	NO		
Subsections 6.12 and 6	5.13		.	•			L
2-LPL-77-1							
2-LPL-62-146							
2-PI-77-5							
2-PI-77-8							
Subsection 6.14	-		•	• • • •	· · · · · ·	• • • • • • • • • • • • • • • • • • •	
2-LPL-77-2							

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

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

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SWITCH LINEUP - SUBSECTION 6.1

Data Package: Page _____ of _____

Date ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-16A	2-M-15	RCDT TO GAS ANAL CIV-ØA IN CNTMT	CLOSE	
2-XS-77-16	2-L-11B	RCDT TO GAS ANALYZER IN CNTMT	NOR	
2-HS-77-16C	2-L-10	RCDT TO GAS ANALYZER IN CNTMT	CLOSE	

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Appendix E (Page 1 of 1)

SWITCH LINEUP - SUBSECTION 6.2

Data Package: Page ____ of ____

Date ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	CLOSE	
2-XS-77-18	2-L-11B	RCDT TO WDS VENT HDR IN CNTMT	NOR	
2-HS-77-18C	2-L-10	RCDT TO WDS VENT HDR IN CNTMT	CLOSE	

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SWITCH LINEUP - SUBSECTION 6.3

Data Package: Page ____ of ____

Date ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	CLOSE	
2-XS-77-9	2-L-11B	RCDT PMPS TO TDCT IN CNTMT	NOR	
2-HS-77-9C	2-L-10	RCDT PMPS TO TDCT IN CNTMT	CLOSE	
WBN	Liquid Waste Processing System	2-PTI-077-01		
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SWITCH LINEUP - SUBSECTION 6.4

Data Package: Page _____ of _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	CLOSE	

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SWITCH LINEUP - SUBSECTION 6.5

Data Package: Page _____ of _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-17	2-M-15	RCDT TO GAS ANAL CIV-ØA OUT CNTMT	CLOSE	

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SWITCH LINEUP - SUBSECTION 6.6

Data Package: Page ____ of ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	CLOSE	

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SWITCH LINEUP - SUBSECTION 6.7

Data Package: Page _____ of _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE	

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SWITCH LINEUP - SUBSECTION 6.8

Data Package: Page ____ of ____

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SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-415	0-L-2	RCDT LEVEL CNTL	AUTO (AFTER CLOSE)	
2-XS-77-4	2-MCC-232-A-A COMPT. 11D 772/A10S	RCDT PUMP 2A	NORMAL	
2-XS-77-6	2-MCC-232-B-B COMPT. 11D 772/A10S	RCDT PUMP 2B	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.9

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Date _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-3	0-L-2	RCDT TO RB FLR/EQDRN SUMP FLOW CNTL	CLOSE	

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SWITCH LINEUP - SUBSECTION 6.10

Data Package: Page _____ of _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-4A	0-L-2	RCDT PUMP 2A	STOP/ PULL-TO-LOCK	
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	CLOSE	· ·
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	CLOSE	
2-XS-77-9	2-L-11B	RCDT PMPS DISCH TO TDCT IN CNTMT	NOR	
2-XS-77-4	2-MCC-232-A-A COMPT. 11D 772/A10S	RCDT PUMP 2A	NORMAL	
2-HS-77-4C	2-MCC-232-A-A COMPT. 11D 772/A10S	RCDT PUMP 2A	NOR (AFTER STOP)	
2-HS-77-6A	0-L-2	RCDT PUMP 2B	STOP/ PULL-TO-LOCK	

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SWITCH LINEUP - SUBSECTION 6.11

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SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-6A	0-L-2	RCDT PUMP 2B	STOP/ PULL-TO-LOCK	
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	CLOSE	
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	CLOSE	
2-XS-77-9	2-L-11B	RCDT PMPS TO TDCT IN CNTMT	NOR	
2-HS-68-310A	2-M-5	PRT TO WDS RCDT	CLOSE	
. 2-XS-68-310	2-L-11A	PRT TO WDS RCDT	NOR	
2-HS-77-6C	2-MCC-232-B-B COMPT. 11D 772/A10S	RCDT PUMP 2B	NOR (AFTER STOP)	
2-XS-77-6	2-MCC-232-B-B COMPT. 11D 772/A10S	RCDT PUMP 2B	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.12

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SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-4A	0-L-2	RCDT PUMP 2A	STOP/ PULL-TO-LOCK	
2-HS-77-6A	0-L-2	RCDT PUMP 2B	STOP/ PULL-TO-LOCK	
2-HS-77-415	0-L-2	RCDT LEVEL CNTL	AUTO (AFTER CLOSE)	
2-HS-77-3	0-L-2	RCDT TO RB FLR/EQDRN SUMP FLOW CNTL	CLOSE	
2-HS-77-16A	2-M-15	RCDT TO GAS ANAL CIV-ØA IN CNTMT	CLOSE	
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	A AUTO (AFTER CLOSE)	
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	CLOSE	
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	CLOSE	
2-FCV-77-17	2-M-15	RCDT TO GAS ANAL CIV-ØA OUT CNTMT	CLOSE	
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)	

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SWITCH LINEUP - SUBSECTION 6.12

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SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE	
2-HS-68-310A	2-M-5	PRT TO WDS RCDT	CLOSÉ	
2-XS-68-310	2-L-11A	PRT TO WDS RCDT	NOR	
2-XS-77-16	2-L-11B	RCDT TO GAS ANALYZER IN CNTMT	NOR	
2-XS-77-18	2-L-11B	RCDT VENT TO WDS VENT HDR	NOR	
2-XS-77-9	2-L-11B	RCDT PUMP DISCH VLV	NOR	
2-XS-77-4	2-MCC-232-A-A COMPT 11D 772/A10S	RCDT PUMP 2A	NORMAL	
2-XS-77-6	2-MCC-232-B-B COMPT 11D 772/A10S	RCDT PUMP 2B	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.13

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Date _

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-4A	0-L-2	RCDT PUMP 2A	STOP/ PULL-TO-LOCK	
2-HS-77-6A	0-L-2	RCDT PUMP 2B	STOP/ PULL-TO-LOCK	
2-HS-77-415	0-L-2	RCDT LEVEL CNTL	AUTO (AFTER CLOSE)	
2-HS-77-3	0-L-2	RCDT TO RB FLR/EQDRN SUMP FLOW CNTL	CLOSE	
2-HS-77-16A	2-M-15	RCDT TO GAS ANAL CIV-ØA IN CNTMT	CLOSE	
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	A AUTO (AFTER CLOSE)	
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	CLOSE	· · · ·
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	CLOSE	
2-FCV-77-17	2-M-15	RCDT TO GAS ANAL CIV-ØA OUT CNTMT	CLOSE	
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)	

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SWITCH LINEUP - SUBSECTION 6.13

Data Package: Page _____ of _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE	
2-HS-68-310A	2-M-5	PRT TO WDS RCDT	CLOSE	
2-XS-68-310	2-L-11A	PRT TO WDS RCDT	NOR	
2-XS-77-16	2-L-11B	RCDT TO GAS ANALYZER IN CNTMT	NOR	
2-XS-77-18	2-L-11B	RCDT VENT TO WDS VENT HDR	NOR	·
2-XS-77-9	2-L-11B	RCDT PUMP DISCH VLV	NOR	
2-XS-77-4	2-MCC-232-A-A COMPT 11D 772/A10S	RCDT PUMP 2A	NORMAL	
2-XS-77-6	2-MCC-232-B-B COMPT 11D 772/A10S	RCDT PUMP 2B	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.14

Data Package: Page _____ of _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-4A	0-L-2	RCDT PUMP 2A	STOP/ PULL-TO-LOCK	
2-HS-77-6A	0-L-2	RCDT PUMP 2B	STOP/ PULL-TO-LOCK	
2-HS-77-415	0-L-2	RCDT LEVEL CNTL	AUTO (AFTER CLOSE)	
2-HS-77-3	0-L-2	RCDT TO RB FLR/EQDRN SUMP FLOW CNTL	CLOSE	
2-HS-77-16A	2-M-15	RCDT TO GAS ANAL CIV-ØA IN CNTMT	CLOSE	
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	A AUTO (AFTER OPEN)	
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	A AUTO (AFTER OPEN)	
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)	
2-HS-77-17	2-M-15	RCDT TO GAS ANAL CIV-ØA OUT CNTMT	CLOSE	

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SWITCH LINEUP - SUBSECTION 6.14

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	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)	
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE	
2-HS-68-310A	2-M-5	PRT TO WDS RCDT	CLOSE	
2-HS-63-3A	2-M-6	SI PMPS RECIRC HDR TO RWST	CLOSED	
2-XS-68-310	2-L-11A	PRT TO WDS RCDT	NOR	
2-XS-77-16	2-L-11B	RCDT TO GAS ANALYZER IN CNTMT	NOR	
2-XS-77-18	2-L-11B	RCDT VENT TO WDS VENT HDR	NOR	
2-XS-77-9	2-L-11B	RCDT PUMP DISCH VLV	NOR	
2-XS-77-4	2-MCC-232-A-A COMPT 11D 772/A10S	RCDT PUMP 2A	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.14

Data Package: Page ____ of ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-XS-77-6	2-MCC-232-B-B COMPT 11D 772/A10S	RCDT PUMP 2B	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.15

Data Package: Page ____ of ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-4A	0-L-2	RCDT PUMP 2A	STOP/ PULL-TO-LOCK	
2-HS-77-6A	0-L-2	RCDT PUMP 2B	STOP/ PULL-TO-LOCK	
2-HS-77-415	0-L-2	RCDT LEVEL CNTL	AUTO (AFTER CLOSE)	
2-HS-77-3	0-L-2	RCDT TO RB FLR/EQDRN SUMP FLOW CNTL	CLOSE	
2-HS-77-16A	2-M-15	RCDT TO GAS ANAL CIV-ØA IN CNTMT	CLOSE	
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	A AUTO (AFTER OPEN)	
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	CLOSE	
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	CLOSE	
2-HS-77-17	2-M-15	RCDT TO GAS ANAL CIV-ØA OUT CNTMT	CLOSE	
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)	

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SWITCH LINEUP - SUBSECTION 6.15

Data Package: Page ____ of ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE	
2-HS-68-310A	2-M-5	PRT TO WDS RCDT	CLOSE	
2-XS-68-310	2-L-11A	PRT TO WDS RCDT	NOR	
2-XS-77-16	2-L-11B	RCDT TO GAS ANALYZER IN CNTMT	NOR	
2-XS-77-18	2-L-11B	RCDT VENT TO WDS VENT HDR	NOR	
2-XS-77-9	2-L-11B	RCDT PUMP DISCH VLV	NOR	
2-XS-77-4	2-MCC-232-A-A COMPT 11D 772/A10S	RCDT PUMP 2A	NORMAL	
2-XS-77-6	2-MCC-232-B-B COMPT 11D 772/A10S	RCDT PUMP 2B	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.16

Data Package: Page ____ of ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-4A	0-L-2	RCDT PUMP 2A	STOP/ PULL-TO-LOCK	
2-HS-77-6A	0-L-2	RCDT PUMP 2B	STOP/ PULL-TO-LOCK	
2-HS-77-415	0-L-2	RCDT LEVEL CNTL	AUTO (AFTER OPEN)	
2-HS-77-3	0-L-2	RCDT TO RB FLR/EQDRN SUMP FLOW CNTL	CLOSE	
2-HS-62-54A	2-M-5	EXCESS LTDN ISOL	OPEN	
2-HS-62-55A	2-M-5	EXCESS LTDN	OPEN	
2-HS-62-59A	2-M-5	EXCESS LTDN DIVERT	NORM	
2-HIC-62-56A	2-M-5	EXCESS LTDN FLOW CONTROL	OPEN	
2-HS-77-16A	2-M-15	RCDT TO GAS ANAL CIV-ØA IN CNTMT	CLOSE	
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	A AUTO (AFTER OPEN)	

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SWITCH LINEUP - SUBSECTION 6.16

Data Package: Page ____ of ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	A AUTO (AFTER OPEN)	
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)	:
2-HS-77-17	2-M-15	RCDT TO GAS ANAL CIV-ØA OUT CNTMT	CLOSE	
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)	
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE	
2-XS-77-16	2-L-11B	RCDT TO GAS ANALYZER IN CNTMT	NOR	
2-XS-77-18	2-L-11B	RCDT VENT TO WDS VENT HDR	NOR	
2-XS-77-9	2-L-11B	RCDT PUMP DISCH VLV	NOR	
2-XS-77-4	2-MCC-232-A-A COMPT 11D 772/A10S	RCDT PUMP 2A	NORMAL	

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SWITCH LINEUP - SUBSECTION 6.16

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SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE
2-XS-77-6	2-MCC-232-B-B COMPT 11D 772/A10S	RCDT PUMP 2B	NORMAL	

WBN Unit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000
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FINAL SWITCH LINEUP

Data Package: Page _____ of _____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	DESCRIPTION POSITION		INDEPENDENT VERIFICATION INITIAL/DATE
2-HS-77-4A	0-L-2	RCDT PUMP 2A	PULL/AUTO		
2-HS-77-6A	0-L-2	RCDT PUMP 2B	PULL/AUTO		
2-HS-77-415	0-L-2	RCDT LEVEL CNTL	RCDT LEVEL CNTL AUTO (AFTER OPEN)		
2-HS-77-3	0-L-2	RCDT TO RB FLR/EQDRN SUMP FLOW CNTL	CLOSE		
2-HS-62-54A	2-M-5	EXCESS LTDN ISOL	EXCESS LTDN ISOL OPEN		
2-HS-62-55A	2-M-5	EXCESS LTDN	OPEN		
2-HS-62-59A	2-M-5	EXCESS LTDN DIVERT	NORM		
2-HIC-62-56A	2-M-5	EXCESS LTDN FLOW CONTROL	OPEN		
2-HS-77-16A	2-M-15	RCDT TO GAS ANAL CIV-ØA IN CNTMT	OPEN		
2-HS-77-18A	2-M-15	RCDT TO WDS VENT HDR CIV-ØA IN CNTMT	A AUTO (AFTER OPEN)		

WBN Unit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000 Page 178 of 218
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FINAL SWITCH LINEUP

Data Package: Page _____ of __

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION POSITION		VERIFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-HS-77-9A	2-M-15	RCDT PMPS TO TDCT CIV-ØA IN CNTMT	A AUTO (AFTER OPEN)		
2-HS-77-10A	2-M-15	RCDT PMPS TO TDCT CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)		
2-HS-77-17	2-M-15	RCDT TO GAS ANAL CIV-ØA OUT CNTMT	OPEN		
2-HS-77-19	2-M-15	RCDT TO WDS VENT HDR CIV-ØA OUT CNTMT	A AUTO (AFTER OPEN)		
2-HS-77-20	2-M-15	N2 TO RCDT CIV-ØA OUT CNTMT	CLOSE		
2-XS-77-16	2-L-11B	RCDT TO GAS ANALYZER IN CNTMT	NOR		
2-XS-77-18	2-L-11B	RCDT VENT TO WDS VENT HDR	NOR	· .	
2-XS-77-9	2-L-11B	RCDT PUMP DISCH VLV	NOR		

WBN Unit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000
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Appendix T (Page 3 of 3) FINAL SWITCH LINEUP

Data Package: Page ____ of ____

SWITCH NUMBER	SWITCH LOCATION	DESCRIPTION	POSITION	VERIFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-XS-77-4	2-MCC-232-A-A COMPT 11D 772/A10S	RCDT PUMP 2A	NORMAL		
2-XS-77-6	2-MCC-232-B-B COMPT 11D 772/A10S	RCDT PUMP 2B	NORMAL		

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Appendix U (Page 1 of 1)

ELECTRICAL BREAKER LINEUP - SUBSECTION 6.12

Data Package: Page ____ of ____

BREAKER IDENTIFICATION	BREAKER DESCRIPTION	BREAKER LOCATION	POSITION	VERIFIED BY INITIAL/DATE
2-BKR-77-4-A	RCDT PUMP 2A (2-PMP-77-4)	2-MCC-232-A-A COMPT 11D 772/A10S	ON	
2-BKR-77-6-B	RCDT PUMP 2B (2-PMP-77-6)	2-MCC-232-B-B COMPT 11D 772/A10S	ON	

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ELECTRICAL BREAKER LINEUP - SUBSECTION 6.13

Data Package: Page _____ of _____

BREAKER	BREAKER DESCRIPTION	BREAKER LOCATION	POSITION	VERIFIED BY INITIAL/DATE
2-BKR-77-4-A	RCDT PUMP 2A (2-PMP-77-4)	2-MCC-232-A-A COMPT 11D 772/A10S	ON	
2-BKR-77-6-B	RCDT PUMP 2B (2-PMP-77-6)	2-MCC-232-B-B COMPT 11D 772/A10S	ON	

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ELECTRICAL BREAKER LINEUP - SUBSECTION 6.14

Data Package: Page _____ of _____

BREAKER IDENTIFICATION	BREAKER DESCRIPTION	BREAKER LOCATION	POSITION	VERIFIED BY INITIAL/DATE
2-BKR-77-4-A	RCDT PUMP 2A (2-PMP-77-4)	2-MCC-232-A-A COMPT 11D 772/A10S	ON	
2-BKR-77-6-B	RCDT PUMP 2B (2-PMP-77-6)	2-MCC-232-B-B COMPT 11D 772/A10S	ON	

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ELECTRICAL BREAKER LINEUP - SUBSECTION 6.15

Data Package: Page ____ of ____

BREAKER IDENTIFICATION	BREAKER DESCRIPTION	BREAKER LOCATION	POSITION	VERIFIED BY INITIAL/DATE
2-BKR-77-4-A	RCDT PUMP 2A (2-PMP-77-4)	2-MCC-232-A-A COMPT 11D 772/A10S	ON	•
2-BKR-77-6-B	RCDT PUMP 2B (2-PMP-77-6)	2-MCC-232-B-B COMPT 11D 772/A10S	ON -	

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ELECTRICAL BREAKER LINEUP - SUBSECTION 6.16

Data Package: Page ____ of ____

BREAKER IDENTIFICATION	BREAKER DESCRIPTION	BREAKER LOCATION	POSITION	VERIFIED BY INITIAL/DATE
2-BKR-77-4-A	RCDT PUMP 2A (2-PMP-77-4)	2-MCC-232-A-A COMPT 11D 772/A10S	ON	
2-BKR-77-6-B	RCDT PUMP 2B (2-PMP-77-6)	2-MCC-232-B-B COMPT 11D 772/A10S	ON	

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FINAL ELECTRICAL BREAKER LINEUP

Data Package: Page ____ of ____

Date _

BREAKER	BREAKER DESCRIPTION	BREAKER LOCATION	POSITION	VERIFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-BKR-77-4-A	RCDT PUMP 2A (2-PMP-77-4)	2-MCC-232-A-A COMPT 11D 772/A10S	ON		
2-BKR-77-6-B	RCDT PUMP 2B (2-PMP-77-6)	2-MCC-232-B-B COMPT 11D 772/A10S	ON		

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VALVE LINEUP - SUBSECTION 6.12

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-77-510	RCDT GAS ANALYZER ISOL	713/A12W	OPEN	
2-TV-77-509	RCDT GAS ANALYZER HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-507	RCDT GAS ANALYZER HDR TEST VENT	716/AZ286	CLOSED	
2-ISV-77-508	RCDT GAS ANALYZER HDR ISOL	716/AZ286	OPEN	
2-ISV-77-592	RCDT VENT HEADER TEST	713/A11W	CLOSED	~ '
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN	
2-TV-77-481	RCDT N2 TEST VENT	713/A12W	CLOSED	
2-TV-77-506	RCDT N2 SUPPLY TEST VENT	713/A11W	CLOSED	
2-TV-77-504	RCDT VENT HEADER TEST VENT	716/AZ281	CLOSED	
2-ISV-77-591	RCDT VENT HEADER ISOL	716/AZ281	OPEN	
2-ISV-77-503	RCDT VENT HEADER ISOL	716/AZ281	OPEN	

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Appendix AA (Page 2 of 4) VALVE LINEUP - SUBSECTION 6.12

Data Package: Page _____ of ____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-RTV-77-310A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-RTV-77-311A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-DRV-77-501	REFUELING CANAL DRAIN	702/AZ270	CLOSED	
2-IDV-77-502	REFUELING CANAL DRAIN ISOL	702/AZ270	CLOSED	
2-ISV-77-514A	RCDT PUMP 2A IN ISOL	702/AZ270	OPEN	
2-TV-77-527	RCDT PUMP 2A SUCT TEST VENT	702/AZ277	CLOSED	
2-DRV-77-515B	RCDT PUMP 2B CASING DRAIN	702/AZ270	CLOSED	
2-RTV-77-302A	2-PI-77-5 ROOT	702/AZ250	OPEN	
2-ISV-77-517A	RCDT PUMP 2A OUT ISOL	702/AZ270	OPEN	
2-ISV-77-514B	RCDT PUMP 2B IN ISOL	702/AZ270	OPEN	

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VALVE LINEUP - SUBSECTION 6.12

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-TV-77-526	RCDT PUMP 2B SUCT TEST VENT	702/AZ276	CLOSED	
2-DRV-77-515A	RCDT PUMP 2A CASING DRAIN	702/AZ275	CLOSED	
2-RTV-77-300A	2-PI-77-8 ROOT	702/AZ277	OPEN	
2-ISV-77-517B	RCDT PUMP 2B OUT ISOL	702/AZ270	OPEN	
2-ISV-77-518	RCDT PUMP DISCH TO SUP FLOOD MODE	716/AZ277	CLOSED	
2-TV-77-519	RCDT PMP DISCH HDR TEST VENT	716/AZ277	CLOSED	·
2-TV-77-520	RCDT PMP DISCH HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-1127	RCDT DISCHARGE HDR TEST VENT	713/A11W	CLOSED	
2-IDV-77-521	RCDT DISCH HEADER TO RWST	713/A11V	CLOSED	
2-IDV-77-523	RCDT DISCH TO TDCT ISOL	713/A11V	CLOSED	

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VALVE LINEUP - SUBSECTION 6.12

Data Package: Page ____ of ____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATIO	713/A11W	CLOSED	

WBN Unit 2	Liquid Waste Processing System	2-PTI-077-01 Rev. 0000
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VALVE LINEUP - SUBSECTION 6.13

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-77-510	RCDT GAS ANALYZER ISOL	713/A12W	OPEN	
2-TV-77-509	RCDT GAS ANALYZER HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-507	RCDT GAS ANALYZER HDR TEST VENT	716/AZ286	CLOSED	
2-ISV-77-508	RCDT GAS ANALYZER HDR ISOL	716/AZ286	OPEN	
2-ISV-77-592	RCDT VENT HEADER TEST	. 713/A11W	CLOSED	
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN	
2-TV-77-481	RCDT N2 TEST VENT	713/A12W	CLOSED	
2-TV-77-506	RCDT N2 SUPPLY TEST VENT	713/A11W	CLOSED	
2-TV-77-504	RCDT VENT HEADER TEST VENT	716/AZ281	CLOSED	
2-ISV-77-591	RCDT VENT HEADER ISOL	716/AZ281	OPEN	
2-ISV-77-503	RCDT VENT HEADER ISOL	716/AZ281	OPEN	

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VALVE LINEUP - SUBSECTION 6.13

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-RTV-77-310A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-RTV-77-311A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-DRV-77-501	REFUELING CANAL DRAIN	702/AZ270	CLOSED	
2-IDV-77-502	REFUELING CANAL DRAIN ISOL	702/AZ270	CLOSED	
2-ISV-77-514A	RCDT PUMP 2A IN ISOL	702/AZ270	OPEN	
2-TV-77-527	RCDT PUMP 2A SUCT TEST VENT	702/AZ277	CLOSED	
2-DRV-77-515B	RCDT PUMP 2B CASING DRAIN	702/AZ270	CLOSED	
2-RTV-77-302A	2-PI-77-5 ROOT	702/AZ250	OPEN	
2-ISV-77-517A	RCDT PUMP 2A OUT ISOL	702/AZ270	OPEN	
2-ISV-77-514B	RCDT PUMP 2B IN ISOL	702/AZ270	OPEN	

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VALVE LINEUP - SUBSECTION 6.13

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-TV-77-526	RCDT PUMP 2B SUCT TEST VENT	702/AZ276	CLOSED	÷
2-DRV-77-515A	RCDT PUMP 2A CASING DRAIN	702/AZ275	CLOSED	
2-RTV-77-300A	2-PI-77-8 ROOT	702/AZ277	OPEN	
2-ISV-77-517B	RCDT PUMP 2B OUT ISOL	702/AZ270	OPEN	
2-ISV-77-518	RCDT PUMP DISCH TO SUP FLOOD MODE	716/AZ277	CLOSED	
2-TV-77-519	RCDT PMP DISCH HDR TEST VENT	716/AZ277	CLOSED	
2-TV-77-520	RCDT PMP DISCH HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-1127	RCDT DISCHARGE HDR TEST VENT	713/A11W	CLOSED	
2-IDV-77-521	RCDT DISCH HEADER TO RWST	713/Å11V	CLOSED	
2-IDV-77-523	RCDT DISCH TO TDCT ISOL	713/A11V	CLOSED	
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Appendix BB (Page 4 of 4) VALVE LINEUP - SUBSECTION 6.13

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATIO	713/A11W	CLOSED	
2-ISV-62-949	HOLDUP TANK A WDS RCDT INLET ISOL	713/A8S	CLOSED	

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VALVE LINEUP - SUBSECTION 6.14

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-77-510	RCDT GAS ANALYZER ISOL	713/A12W	OPEN	
2-TV-77-509	RCDT GAS ANALYZER HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-507	RCDT GAS ANALYZER HDR TEST VENT	716/AZ286	CLOSED	
2-ISV-77-508	RCDT GAS ANALYZER HDR ISOL	716/AZ286	OPEN	
2-ISV-77-592	RCDT VENT HEADER TEST	713/A11W	CLOSED	
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN	
2-TV-77-481	RCDT N2 TEST VENT	713/A12W	CLOSED	
2-TV-77-506	RCDT N2 SUPPLY TEST VENT	713/A11W	CLOSED	
2-TV-77-504	RCDT VENT HEADER TEST VENT	716/AZ281	CLOSED	
2-ISV-77-591	RCDT VENT HEADER ISOL	716/AZ281	OPEN	
2-ISV-77-503	- RCDT VENT HEADER ISOL	716/AZ281	OPEN	

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VALVE LINEUP - SUBSECTION 6.14

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-RTV-77-310A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-RTV-77-311A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-DRV-77-501	REFUELING CANAL DRAIN	702/AZ270	CLOSED	
2-IDV-77-502	REFUELING CANAL DRAIN ISOL	702/AZ270	CLOSED	
2-ISV-77-514A	RCDT PUMP 2A IN ISOL	702/AZ270	OPEN	
2-TV-77-527	RCDT PUMP 2A SUCT TEST VENT	702/AZ277	CLOSED	
2-DRV-77-515B	RCDT PUMP 2B CASING DRAIN	702/AZ270	CLOSED	
2-RTV-77-302A	2-PI-77-5 ROOT	702/AZ250	OPEN	
2-ISV-77-517A	RCDT PUMP 2A OUT ISOL	702/AZ270	OPEN	
2-ISV-77-514B	RCDT PUMP 2B IN ISOL	702/AZ270	OPEN	

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VALVE LINEUP - SUBSECTION 6.14

Data Package: Page ____ of ____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-TV-77-526	RCDT PUMP 2B SUCT TEST VENT	702/AZ276	CLOSED	
2-DRV-77-515A	RCDT PUMP 2A CASING DRAIN	702/AZ275	CLOSED	
2-RTV-77-300A	2-PI-77-8 ROOT	702/AZ277	OPEN	
2-ISV-77-517B	RCDT PUMP 2B OUT ISOL	702/AZ270	OPEN	
2-ISV-78-559	UNIT 2 REFLG CAVITY RETURN HDR ISOL	702/AZ270	CLOSED	
2-ISV-77-518	RCDT PUMP DISCH TO SUP FLOOD MODE	716/AZ277	CLOSED	
2-TV-77-519	RCDT PMP DISCH HDR TEST VENT	716/AZ277	CLOSED	
2-TV-77-520	RCDT PMP DISCH HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-1127	RCDT DISCHARGE HDR TEST VENT	713/A11W	CLOSED	
2-IDV-77-521	RCDT DISCH HEADER TO RWST	713/A11V	CLOSED	

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VALVE LINEUP - SUBSECTION 6.14

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-IDV-77-523	RCDT DISCH TO TDCT ISOL	713/A11V	CLOSED	
2-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATIO	713/A11W	CLOSED	
2-ISV-62-949	HOLDUP TANK A WDS RCDT INLET ISOL	713/A10S	CLOSED	
2-ISV-62-951	HOLDUP TANK B HDR INLET ISOL	713/A9S	CLOSED	
2-ISV-72-500	SPENT FUEL PURI CONN	692/A13U	OPEN	
2-ISV-72-501	BORIC ACID BLEND CONN	713/A12U	CLOSED	
2-ISV-72-502	TEST LINE ISO	713/A12U	CLOSED	
2-ISV-78-567	REFLG WTR PURIF PMP TO RWST ISOL	692/A12W	CLOSED	
2-RTV-63-349A	2-FI-63-2 ROOT	692/A12U	CLOSED	

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VALVE LINEUP - SUBSECTION 6.14

Data Package: Page ____ of ____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-RTV-63-350A	2-FI-63-2 ROOT	692/A12U	CLOSED	

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VALVE LINEUP - SUBSECTION 6.15

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-77-510	RCDT GAS ANALYZER ISOL	713/A12W	OPEN	
2-TV-77-509	RCDT GAS ANALYZER HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-507	RCDT GAS ANALYZER HDR TEST VENT	716/AZ286	CLOSED	
2-ISV-77-508	RCDT GAS ANALYZER HDR ISOL	716/AZ286	OPEN	
2-ISV-77-592	RCDT VENT HEADER TEST	713/A11W	CLOSED	
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN	
2-TV-77-481	RCDT N2 TEST VENT	713/A12W	CLOSED	
2-TV-77-506	RCDT N2 SUPPLY TEST VENT	713/A11W	CLOSED	
2-TV-77-504	RCDT VENT HEADER TEST VENT	716/AZ281	CLOSED	
2-ISV-77-591	RCDT VENT HEADER ISOL	716/AZ281	OPEN	
2-ISV-77-503	RCDT VENT HEADER ISOL	716/AZ281	OPEN	

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VALVE LINEUP - SUBSECTION 6.15

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-RTV-77-310A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-RTV-77-311A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-DRV-77-501	REFUELING CANAL DRAIN	702/AZ270	CLOSED	
2-IDV-77-502	REFUELING CANAL DRAIN ISOL	702/AZ270	CLOSED	
2-ISV-77-514A	RCDT PUMP 2A IN ISOL	702/AZ270	OPEN	
2-TV-77-527	RCDT PUMP 2A SUCT TEST VENT	702/AZ277	CLOSED	
2-DRV-77-515B	RCDT PUMP 2B CASING DRAIN	702/AZ270	CLOSED	
2-RTV-77-302A	2-PI-77-5 ROOT	702/AZ250	OPEN	
2-ISV-77-517A	RCDT PUMP 2A OUT ISOL	702/AZ270	OPEN	
2-ISV-77-514B	RCDT PUMP 2B IN ISOL	702/AZ270	OPEN	

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VALVE LINEUP - SUBSECTION 6.15

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-TV-77-526	RCDT PUMP 2B SUCT TEST VENT	702/AZ276	CLOSED	
2-DRV-77-515A	RCDT PUMP 2A CASING DRAIN	702/AZ275	CLOSED	
2-RTV-77-300A	2-PI-77-8 ROOT	702/AZ277	OPEN	
2-ISV-77-517B	RCDT PUMP 2B OUT ISOL	702/AZ270	OPEN	
2-ISV-77-518	RCDT PUMP DISCH TO SUP FLOOD MODE	716/AZ277	CLOSED	
2-TV-77-519	RCDT PMP DISCH HDR TEST VENT	716/AZ277	CLOSED	
2-TV-77-520	RCDT PMP DISCH HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-1127	RCDT DISCHARGE HDR TEST VENT	713/A11W	CLOSED	
2-IDV-77-521	RCDT DISCH HEADER TO RWST	713/A11V	CLOSED	
2-IDV-77-523	RCDT DISCH TO TDCT ISOL	713/A11V	CLOSED	

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VALVE LINEUP - SUBSECTION 6.15

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATION	713/A11W	CLOSED	
2-ISV-62-949	HOLDUP TANK A WDS RCDT INLET ISOL	713/A10S	CLOSED	
1-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATION	713/A5W	CLOSED	
2-ISV-84-528	FLOOD MODE AUX BORATION MAKEUP TANK U2 ISOL	757/A5V	OPEN	
0-VTV-84-534	FLOOD MODE AUX BORATION MAKEUP TANK U2 ISOL	757/A5V	OPEN	
0-RTV-84-58A	0-LI-84-1 ROOT	757/A5V	CLOSED	
0-DRV-84-535	FLOOD MODE AUX BORATION MAKEUP TANK DRAIN	757/A5V	CLOSED	

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VALVE LINEUP - SUBSECTION 6.15

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
0-SMV-84-527	FLOOD MODE AUX BORATION LOCAL SAMPLE	757/A5V	CLOSED	
0-ISV-84-525	FLOOD MODE AUX CHG BSTR PMP A SUCTION ISOLATION	757/A5V	CLOSED	
0-ISV-84-526	FLOOD MODE AUX CHG BSTR PMP B SUCTION ISOLATION	757/A5V	CLOSED	

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VALVE LINEUP - SUBSECTION 6.16

Data Package: Page ____ of ____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-77-510	RCDT GAS ANALYZER ISOL	713/A12W	OPEN	· .
2-TV-77-509	RCDT GAS ANALYZER HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-507	RCDT GAS ANALYZER HDR TEST VENT	716/AZ286	CLOSED	
2-ISV-77-508	RCDT GAS ANALYZER HDR ISOL	716/AZ286	OPEN	
2-ISV-77-592	RCDT VENT HEADER TEST	713/A11W	CLOSED	
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN	
2-TV-77-481	RCDT N2 TEST VENT	713/A12W	CLOSED	
2-TV-77-506	RCDT N2 SUPPLY TEST VENT	713/A11W	CLOSED	
2-TV-77-504	RCDT VENT HEADER TEST VENT	716/AZ281	CLOSED	
2-ISV-77-591	RCDT VENT HEADER ISOL	716/AZ281	OPEN	
2-ISV-77-503	RCDT VENT HEADER ISOL	716/AZ281	OPEN	

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VALVE LINEUP - SUBSECTION 6.16

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-RTV-77-310A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-RTV-77-311A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN	
2-DRV-77-501	REFUELING CANAL DRAIN	702/AZ270	CLOSED	
2-IDV-77-502	REFUELING CANAL DRAIN ISOL	702/AZ270	CLOSED	
2-ISV-77-514A	RCDT PUMP 2A IN ISOL	702/ÅZ270	OPEN	
2-TV-77-527	RCDT PUMP 2A SUCT TEST VENT	702/AZ277	CLOSED	
2-DRV-77-515B	RCDT PUMP 2B CASING DRAIN	702/AZ270	CLOSED	
2-RTV-77-302A	2-PI-77-5 ROOT	702/AZ250	OPEN	
2-ISV-77-517A	RCDT PUMP 2A OUT ISOL	702/AZ270	OPEN	
2-ISV-77-514B	RCDT PUMP 2B IN ISOL	702/AZ270	OPEN	

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VALVE LINEUP - SUBSECTION 6.16

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-TV-77-526	RCDT PUMP 2B SUCT TEST VENT	702/AZ276	CLOSED	
2-DRV-77-515A	RCDT PUMP 2A CASING DRAIN	702/AZ275	CLOSED	
2-RTV-77-300A	2-PI-77-8 ROOT	702/AZ277	OPEN	
2-ISV-77-517B	RCDT PUMP 2B OUT ISOL	702/AZ270	OPEN	
2-ISV-77-518	RCDT PUMP DISCH TO SUP FLOOD MODE	716/AZ277	CLOSED	
2-TV-77-519	RCDT PMP DISCH HDR TEST VENT	716/AZ277	CLOSED	
2-TV-77-520	RCDT PMP DISCH HDR TEST VENT	713/A11W	CLOSED	
2-TV-77-1127	RCDT DISCHARGE HDR TEST VENT	713/A11W	CLOSED	
2-IDV-77-521	RCDT DISCH HEADER TO RWST	713/A11V	CLOSED	
2-IDV-77-523	RCDT DISCH TO TDCT ISOL	713/A11V	CLOSED	

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATION	713/A11W	CLOSED	
2-ISV-62-949	HOLDUP TANK A WDS RCDT INLET ISOL	713/A10S	OPEN	
2-ISV-62-951	HOLDUP TANK B HDR INLET ISOL	713/A9S	OPEN	
2-ISV-68-579	RCS LOOP 3 EXCESS LETDOWN ISOL	720/AZ232	OPEN	
2-DRV-62-701	CVCS EXCESS LTDN HEADER DRAIN	702/AZ180	CLOSED	
2-DRV-62-705	CVCS EXCESS LTDN HEADER DRAIN	716/AZ130	CLOSED	
2-DRV-62-655	CVCS EXCESS LTDN HX TUBE DRAIN	716/AZ120	CLOSED	
2-VTV-62-654	CVCS EXCESS LTDN HX TUBE VENT	716/AZ120	CLOSED	
2-ISV-62-656	CVCS EXCESS LTDN BORON ANAL ISOL	716/AZ120	CLOSED	

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VALVE LINEUP - SUBSECTION 6.16

Data Package: Page ____ of ____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE
2-RTV-62-332A	2-PT-62-57 ROOT	702/AZ115	OPEN	

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FINAL VALVE LINEUP

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-ISV-77-510	RCDT GAS ANALYZER ISOL	713/A12W	OPEN		
2-TV-77-509	RCDT GAS ANALYZER HDR TEST VENT	713/A11W	CLOSED		
2-TV-77-507	RCDT GAS ANALYZER HDR TEST VENT	716/AZ286	CLOSED		
2-ISV-77-508	RCDT GAS ANALYZER HDR ISOL	716/AZ286	OPEN		
2-ISV-77-592	RCDT VENT HEADER TEST	713/A11W	CLOSED		
2-ISV-77-593	RCDT VENT HEADER ISOL	713/A11W	OPEN		
2-TV-77-481	RCDT N2 TEST VENT	713/A12W	CLOSED		
2-TV-77-506	RCDT N2 SUPPLY TEST VENT	713/A11W	CLOSED		
2-TV-77-504	RCDT VENT HEADER TEST VENT	716/AZ281	CLOSED		

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FINAL VALVE LINEUP

Data Package: Page _____ of _____

VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-ISV-77-591	RCDT VENT HEADER ISOL	716/AZ281	OPEN		
2-ISV-77-503	RCDT VENT HEADER ISOL	716/AZ281	OPEN		
2-RTV-77-310A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN		
2-RTV-77-311A	2-LT-77-1/2-PT-77-2 ROOT	702/AZ285	OPEN		
2-DRV-77-501	REFUELING CANAL DRAIN	702/AZ270			
2-IDV-77-502	REFUELING CANAL DRAIN ISOL	702/AZ270	CLOSED		
2-ISV-77-514A	RCDT PUMP 2A IN ISOL	702/AZ270	OPEN		
2-TV-77-527	RCDT PUMP 2A SUCT TEST VENT	702/AZ277	CLOSED		
2-DRV-77-515B	RCDT PUMP 2B CASING DRAIN	702/AZ270	CLOSED		

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FINAL VALVE LINEUP

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Data Package: Page _____ of _____

	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-RTV-77-302A	2-PI-77-5 ROOT	702/AZ250	OPEN		
2-ISV-77-517A	RCDT PUMP 2A OUT ISOL	702/AZ270	OPEN		
2-ISV-77-514B	RCDT PUMP 2B IN ISOL	702/AZ270	OPEN		
2-TV-77-526	RCDT PUMP 2B SUCT TEST VENT	702/AZ276	CLOSED		
2-DRV-77-515A	RCDT PUMP 2A CASING DRAIN	702/AZ275	CLOSED		
2-RTV-77-300A	2-PI-77-8 ROOT	702/AZ277	OPEN		
2-ISV-77-517B	RCDT PUMP 2B OUT ISOL	702/AZ270	OPEN		
2-ISV-77-518	RCDT PUMP DISCH TO SUP FLOOD MODE	716/AZ277	CLOSED		

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FINAL VALVE LINEUP

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-TV-77-519	RCDT PMP DISCH HDR TEST VENT	716/AZ277	CLOSED		
2-TV-77-520	RCDT PMP DISCH HDR TEST VENT	713/A11W	CLOSED		
2-TV-77-1127	RCDT DISCHARGE HDR TEST VENT	713/A11W	CLOSED		
2-IDV-77-521	RCDT DISCH HEADER TO RWST	713/A11V	CLOSED	-	
2-IDV-77-523	RCDT DISCH TO TDCT ISOL	713/A11V	CLOSED		
2-ISV-84-530	RCDT PMPS DISCH ISOL TO FLOOD MODE AUX BORATION	713/A11W	CLOSED		
2-ISV-62-949	HOLDUP TANK A WDS RCDT INLET ISOL	713/A10S	OPEN		

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FINAL VALVE LINEUP

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-ISV-62-951	HOLDUP TANK B HDR INLET ISOL	713/A9S	OPEN		
2-ISV-68-579	RCS LOOP 3 EXCESS LETDOWN ISOL	720/AZ232	OPEN		
2-DRV-62-701	CVCS EXCESS LTDN HEADER DRAIN	702/AZ180	CLOSED		
2-DRV-62-705	CVCS EXCESS LTDN HEADER - DRAIN	716/AZ130	CLOSED		
2-DRV-62-655	CVCS EXCESS LTDN HX TUBE DRAIN	716/AZ120	CLOSED		
2-VTV-62-654	CVCS EXCESS LTDN HX TUBE VENT	716/AZ120	CLOSED		

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FINAL VALVE LINEUP

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VALVE NUMBER	DESCRIPTION	LOCATION EL/COL	POSITION	VERFIED BY INITIAL/DATE	INDEPENDENT VERIFICATION INITIAL/DATE
2-ISV-62-656	CVCS EXCESS LTDN BORON ANAL ISOL	716/AZ120	CLOSED		
2-RTV-62-332A	2-PT-62-57 ROOT	702/AZ115	OPEN		

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Data Sheet 1 (Page 1 of 2)

REACTOR COOLANT DRAIN TANK PUMP 2A

Data Package: Page ____ of ____

Date _____

$$TDH = \left(P_{D} - P_{S}\right) \frac{LB}{IN^{2}} \times \frac{144 \frac{IN^{2}}{FT^{2}}}{62 \cdot 4 \frac{LB}{FT^{3}}}$$

[1] **RECORD** the following data:

A. Step 6.12[26]

_____ GPM

_____ Flowmeter Minimum

_____ Flowmeter Maximum

_____ Flowmeter Accuracy (Percentage of Range)

B. Step 6.12[27]A

_____ psig (suction)

Pressure Gauge Accuracy (From M&TE Checkout Sheet)

C. Step 6.12[27]B

_____ psig (discharge)

Pressure Gauge Accuracy (From SSD-2-PI-77-5)

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	Data Sheet 1 (Page 2 of 2)	
	REACTOR COOLANT DRAIN TANK	PUMP 2A
Data	Package: Page of	Date
[2]	CALCULATE the following: $TDH = \left(\frac{1}{\text{DischargePress.}} - \frac{1}{\text{SuctionPress.}}\right)$	$) \times 2.31 = \underline{\qquad} ft$
	$Accuracy_{TDH} = \left({Accuracy_{2-PI-77-5}} + {Accuracy_{TDH}}\right)$	$\frac{1}{\text{acy}_{\text{M&TE}}} $ > 2.31
	$AdjustedTDH = TDH - Accuracy_{TDH}$	
	AdjustedTDH =ft	
	Adjusted TDH must be ≥175 ft (ACC CRIT)	
	Accuracy _{FLOWMETER} = Range × Accuracy _{PERC} Accuracy _{FLOWMETER} = $\left(\frac{1}{Maximum} - \frac{1}{Minim}\right)$ Accuracy _{FLOWMETER} = GPM	$\left(\frac{1}{\text{um}}\right) \times \left(\frac{1}{\text{Accuracy}_{\text{percent}}}\right)$
	$AdjustedFlow = \frac{1}{Flow_{MEASURED}} - \frac{1}{Accuracy}$	FLOWMETER
	AdjustedFlow =GPM	
	Adjusted Flow must be ≥50 GPM (ACC CRIT)
	Calculations Performed By:	
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Data Sheet 2 (Page 1 of 2) REACTOR COOLANT DRAIN TANK PUMP 2B

$$TDH = \left(P_{D} - P_{S}\right) \frac{LB}{IN^{2}} \times \frac{144 \frac{IN^{2}}{FT^{2}}}{62 \cdot 4 \frac{LB}{FT^{3}}}$$

[3] **RECORD** the following data:

A. Step 6.13[15]

____ GPM

_____ Flowmeter Minimum

____ Flowmeter Maximum

Flowmeter Accuracy (Percentage of Range)

B. Step 6.13[16]A

____ psig (suction)

Pressure Gauge Accuracy (From M&TE Checkout Sheet)

C. Step 6.13[16]B

_____ psig (discharge)

Pressure Gauge Accuracy (From SSD-2-PI-77-8)

Data Sheet 2 (Page 2 of 2)

REACTOR COOLANT DRAIN TANK PUMP 2B

CALCULATE the following: [4] $TDH = \left(\frac{1}{\text{DischargePress.}} - \frac{1}{\text{SuctionPress.}}\right) \times 2.31 = \underline{\qquad} \text{ft}$ Accuracy_{TDH} = $\left(\frac{1}{\text{Accuracy}_{2-\text{PI}-77-8}} + \frac{1}{\text{Accuracy}_{\text{M&TE}}}\right) \times 2.31$ Accuracy_{TDH} = _____ AdjustedTDH = TDH – Accuracy_{TDH} AdjustedTDH = ft Adjusted TDH must be \geq 175 ft (ACC CRIT) $Accuracy_{FLOWMETER} = Range \times Accuracy_{PERCENT}$ $Accuracy_{FLOWMETER} = \left(\frac{1}{Maximum} - \frac{1}{Minimum}\right) \times \left(\frac{1}{Accuracy_{PERCENT}}\right)$ Accuracy_{FLOWMETER} = _____ GPM $AdjustedFlow = \frac{1}{Flow_{MEASURED}} - \frac{1}{Accuracy_{FLOWMETER}}$ AdjustedFlow = ____ GPM Adjusted Flow must be \geq 150 GPM (ACC CRIT) Calculations Performed By: Calculations Verified By: