WBN2Public Resource

From: Boyd, Desiree L [dlboyd@tva.gov]
Sent: Wednesday, June 22, 2011 8:51 AM
To: Epperson, Dan; Poole, Justin; Raghavan, Rags; Milano, Patrick; Campbell, Stephen
Cc: Crouch, William D; Hamill, Carol L; Boyd, Desiree L
Subject: TVA letter to NRC_06-21-11_2-PTI-030I-01 transmittal to NRC
Attachments: 06-21-11_2-PTI-030I-01 transmittal to NRC_Final.pdf

Please see attached TVA letter that was sent to the NRC today.

Thank You,

~*~*~*~*~*~*~*~*~*~*~*~

Désireé L. Boyd
WBN 2 Licensing Support
Sun Technical Services
dlboyd@tva.gov
423-365-8764

Hearing Identifier: Watts_Bar_2_Operating_LA_Public
Email Number: 432

Mail Envelope Properties (7AB41F650F76BD44B5BCAB7C0CCABFAF202774B7)

Subject: TVA letter to NRC_06-21-11_2-PTI-030I-01 transmittal to NRC
Sent Date: 6/22/2011 8:51:11 AM
Received Date: 6/22/2011 8:51:46 AM
From: Boyd, Desiree L

Created By: dlboyd@tva.gov

Recipients:
"Crouch, William D" <wdcrouch@tva.gov>
Tracking Status: None
"Hamill, Carol L" <clhamill@tva.gov>
Tracking Status: None
"Boyd, Desiree L" <dlboyd@tva.gov>
Tracking Status: None
"Epperson, Dan" <Dan.Epperson@nrc.gov>
Tracking Status: None
"Poole, Justin" <Justin.Poole@nrc.gov>
Tracking Status: None
"Raghavan, Rags" <Rags.Raghavan@nrc.gov>
Tracking Status: None
"Milano, Patrick" <Patrick.Milano@nrc.gov>
Tracking Status: None
"Campbell, Stephen" <Stephen.Campbell@nrc.gov>
Tracking Status: None

Post Office: TVANUCXVS2.main.tva.gov

Files	**Size**	**Date & Time**
MESSAGE	308	6/22/2011 8:51:46 AM
06-21-11_2-PTI-030I-01 transmittal to NRC_Final.pdf	541851	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

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

June 21, 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 Instruction

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

PTI NUMBER	Rev.	TITLE
2-PTI-030I-01	0	Control Rod Drive Mechanism Coolers

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

Respectfully,

David Stinson
Watts Bar Unit 2 Vice President

Enclosure
cc (Enclosure):

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

bcc (Enclosure):

Stephen Campbell
U.S. Nuclear Regulatory Commission
MS 08H4A
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Charles Casto, Deputy Regional Administrator for Construction
U. S. Nuclear Regulatory Commission
Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, Georgia 30303-1257

WATTS BAR NUCLEAR PLANT
UNIT 2 PREOPERATIONAL TEST

TITLE: Control Rod Drive Mechanism Coolers

Instruction No: 2-PTI-030I-01

Revision No: 0000

PREPARED BY: Keith Jones Keith Jones DATE: 4-11-11
PRINT NAME / SIGNATURE

REVIEWED BY: Bethany Merriman Bethany Merriman DATE: 4-11-11
PRINT NAME / SIGNATURE

INSTRUCTION APPROVAL

JTG MEETING No: 2-11-011

JTG CHAIRMAN: _____ DATE: 6/16/11

APPROVED BY : _____ DATE: 6/16/11
PREOPERATIONAL STARTUP MANAGER

TEST RESULTS APPROVAL

JTG MEETING No: _____

JTG CHAIRMAN: _____ DATE: _____

APPROVED BY : _____ DATE: _____
PREOPERATIONAL STARTUP MANAGER

Revision Log

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0000	6/16/11	ALL	This procedure is written using the Unit 1 PTI-030K-01 Rev 0 and Unit 2 design changes as a guide.

Table of Contents

Table of Contents (continued)

Data Package: Page ____ of ____ **Date _____**

1.0 INTRODUCTION

1.1 Test Objectives

A. Demonstrate the proper operation of the Control Rod Drive Mechanism (CRDM) Cooling Units and Dampers.

B. Demonstrate the proper operation of the Essential Raw Cooling Water (ERCW) control valves associated with each CRDM Cooler.

1.2 Scope

NOTES

1) 2-PTI-030L-01, HFT Containment Temperature Survey, will demonstrate the CRDM Coolers' ability to maintain design temperatures.
2) ERCW flowrates are verified during performance of 2-PTI-067-02-A and 2-PTI-067-02-B, ERCW System Flow Balance Train A and Train B.
3) ERCW Temperature Control Valves' logic is tested during performance of 2-PTI-067-03, ERCW Valve Logic Test.
4) System vibration testing is performed during performance of GTM-05, HVAC Air Balance for this system.

This test demonstrates the operability of the Unit 2 CRDM Coolers to ensure the following:

A. CRDM Cooler Dampers

1. The CRDM Cooler Dampers operate correctly from their respective handswitches in the Main Control Room and Auxiliary Control Room, and their indicating lights indicate correct status.

2. The required CRDM Cooler Dampers (shroud suction dampers) open and close upon start/stop of their respective CRDM Cooler.

Data Package: Page ____ of ____ **Date _____**

1.2 Scope (continued)

B. CRDM Cooler Units

1. The CRDM Coolers operate correctly from their respective handswitches in the Main Control Room and on the 480V Shutdown Boards, and their indicating lights indicate correct status.

2. Each CRDM Cooler stops on a simulated Phase B Containment Isolation Signal, and remains off when that signal is reset.

3. Each CRDM Cooler stops on a simulated Bus Undervoltage condition.

4. The inlet and outlet air temperatures for each CRDM Cooler can be monitored on the Plant Computer System.

5. The CRDM Coolers maintain design air flows.

6. Each ERCW control valve modulates open upon start and closes upon stop of its associated CRDM Cooler.

7. The following features function only when the CRDM Coolers' Transfer Switch is in AUX:

   a. Each CRDM Cooler can be started manually while a simulated Phase B Containment Isolation Signal is present.

   b. Each CRDM Cooler restarts after a time delay when a simulated Bus Undervoltage condition is restored.

   c. Each CRDM Cooler starts on a low flow condition in the other CRDM Cooler with which it is paired.

Data Package: Page ____ of ____ **Date _____**

2.0 REFERENCES

2.1 Performance References

A. SMP-9.0. Conduct of Test

B. GTM-05, HVAC Air Balance

C. 0-SOI-67.01, Essential Raw Cooling Water

D. 2-SOI-30.03, Containment HVAC and Pressure Control

2.2 Developmental References

A. Final Safety Analysis Report, Amendment 104

1. Section 9.2.1, Essential Raw Cooling Water (ERCW)

2. Section 9.4.7, Containment Air Cooling System

3. Table 14.2-1, Sheets 4 & 5, Essential Raw Cooling Water System Test Summary

4. Table 14.2-1, Sheets 38 & 39, Containment Ventilation System Test Summary

B. Drawings

1. Flow Diagrams

a. 2-47W866-1, Rev 2, HEATING AND VENTILATION AIR FLOW
DRA 53850-001, Rev 0
DRA 53850-002, Rev 0
DRA 54923-038, Rev 0
DRA 54923-039, Rev 0

b. 2-47W845-3, Rev 2, ESSENTIAL RAW COOLING WATER

Data Package: Page ____ of ____ **Date _____**

2.2 Developmental References (continued)

2. Electrical

a. 2-45W760-30-8, Rev 1, VENTILATING SYSTEM SCHEMATIC DIAGRAMS
DRA 54172-032, Rev 0
DRA 54172-034, Rev 0
DRA 54172-070, Rev 0
DRA 54172-071, Rev 0

b. 2-45W760-30-26, Rev 1, VENTILAING SYSTEM SCHEMATIC DIAGRAMS
DRA 54172-074, Rev 0
DRA 54172-075, Rev 0

c. 45W760-30-21, Rev 11, VENTILATING SYSTEM SCHEMATIC DIAGRAMS

d. 45W760-55-1, Rev 6, ANNUNCIATOR SYSTEM SCHEMATIC DIAGRAMS

e. 45W760-55-2, Rev 7, ANNUNCIATOR SYSTEM SCHEMATIC DIAGRAMS
DRA 52639-76, Rev 0

f. 2-45W600-30-1, Rev 0, VENTILATING SYSTEM SCHEMATIC DIAGRAMS
DRA 54172-120, Rev 0
DRA 54172-121, Rev 0
DRA 54172-122, Rev 0
DRA 54172-123, Rev 0

g. 2-45W600-30-2, Rev 0, VENTILATING SYSTEM SCHEMATIC DIAGRAMS

h. 2-45W600-57-9, Rev 0, SEPARATION & MISC AUX RELAYS SCHEMATIC DIAGRAMS

i. 2-45W600-57-18, Rev 1, SEPARATION & MISC AUX RELAYS SCHEMATIC DIAGRAMS

j. 2-45W600-57-20, Rev 0, SEPARATION & MISC AUX RELAYS SCHEMATIC DIAGRAMS

k. 2-45W600-57-21, Rev 0, SEPARATION & MISC AUX RELAYS SCHEMATIC DIAGRAMS

Data Package: Page ____ of ____ **Date _____**

2.2 Developmental References (continued)

l. 2-45W600-67-1, Rev 0, ESSENTIAL RAW COOLING WATER SYS SCHEMATIC DIAGRAM

m. 2-45W600-67-2, Rev 0, ESSENTIAL RAW COOLING WATER SCHEMATIC DIAGRAM

n. 1-45W760-212-4, Rev 16, 480V SHUTDOWN POWER SCHEMATIC DIAGRAMS

o. 2-45W749-1, Rev 1, 480V SHUTDOWN BD 2A1-A
DRA 54172-017, Rev 0
DRA 54172-068, Rev 0

p. 2-45W749-2, Rev 1, 480V SHUTDOWN BD 2A2-A
DRA 54172-018, Rev 0
DRA 54172-069, Rev 0

q. 2-45W749-3, Rev 1, 480V SHUTDOWN BD 2B1-B
DRA 54172-019, Rev 0
DRA 54172-067, Rev 0

r. 2-45W749-4, Rev 2, 480V SHUTDOWN BD 2B2-B
DRA 54172-020, Rev 0
DRA 54172-066, Rev 0

s. 45W2748-1, Rev 13, 480V SHUTDOWN BD 2A1-A CONNECTION DIAGRAMS
DRA 54172-021, Rev 0
DRA 54172-265, Rev 0

t. 45W2748-2, Rev 12, 480V SHUTDOWN BD 2A2-A CONNECTION DIAGRAMS
DRA 54172-022, Rev 0
DRA 54172-266, Rev 0

u. 45W2748-3, Rev 14, 480V SHUTDOWN BD 2B1-B CONNECTION DIAGRAMS
DRA 54172-023, Rev 0
DRA 54172-267, Rev 0

v. 45W2748-4, Rev 12, 480V SHUTDOWN BD 2B2-B CONNECTION DIAGRAMS
DRA 54172-024, Rev 0
DRA 54172-268, Rev 0

Data Package: Page ____ of ____ **Date _____**

2.2 Developmental References (continued)

w. 45N2676-4, Rev 16, SOLID STATE PROTECTION SYS TRAIN A CONNECTION DIAGRAM

x. 45N2677-4, Rev 18, SOLID STATE PROTECTION SYS TRAIN B CONNECTION DIAGRAM

y. 6947D02 (AC), Rev G, LVME 'DS' SWGR 480V 3PH 60HZ SUBSTATION INTERNALS

z. 618F938, Rev 913, LVME 'DS' SWGR 480V SHUTDOWN BD 2A1-A 480V 3PH 60HZ SUBSTATION CONN DIAG UNIT 6
DRA 53066-027, Rev 0
DRA 53066-031, Rev 0
DRA 53068-031, Rev 0

aa. 618F938 (AC), Rev F, LVME 'DS' SWGR 480V SHUTDOWN BD 2A1-A 480V 3PH 60HZ SUBSTATION CONN DIAG UNIT 6

bb. 6947D67, Rev 915, LVME 'DS' SWGR 480V SHUTDOWN BD 2A2-A 480V 3PH 60HZ SUBSTATION CONN DIAG UNIT 6
DRA 53067-012, Rev 1
DRA 53067-015, Rev 0
DRA 53068-034, Rev 0

cc. 6947D67 (AC), Rev K, LVME 'DS' SWGR 480V SHUTDOWN BD 2A2-A 480V 3PH 60HZ SUBSTATION CONN DIAG UNIT 6

dd. 618F941, Rev 913, LVME 'DS' SWGR 480V SHUTDOWN BD 2B1-B 480V 3∅ 60HZ SUBSTATION CONN DIAG UNIT 6
DRA 53068-010, Rev 0
DRA 53068-015, Rev 0

ee. 618F941 (AC), Rev F, LVME 'DS' SWGR 480V SHUTDOWN BD 2B1-B 480V 3∅ 60HZ SUBSTATION CONN DIAG UNIT 6

ff. 6947D85, Rev 915, LVME 'DS' SWGR 480V SHUTDOWN BD 2B2-B 480V 3∅ 60HZ SUBSTATION CONN DIAG UNIT 6
DRA 53069-010, Rev 0
DRA 53069-016, Rev 0

gg. 6947D85 (AC), Rev H, LVME 'DS' SWGR 480V SHUTDOWN BD 2B2-B 480V 3∅ 60HZ SUBSTATION CONN DIAG UNIT 6

Data Package: Page ____ of ____ **Date _____**

2.2 Developmental References (continued)

3. Logic/Control

   a. 2-47W610-30-2, Rev 1, CONTROL DIAGRAM VENTILATION SYSTEM
   DRA 54172-287, Rev 0
   DRA 54172-288, Rev 0
   DRA 54172-289, Rev 0
   DRA 54172-290, Rev 0

   b. 2-47W610-67-2, Rev 1, CONTROL DIAGRAM ERCW SYSTEM

   c. 2-47W611-30-4, Rev 1, LOGIC DIAGRAM VENTILATION SYSTEM
   DRA 54172-282, Rev 0

   d. 2-47W611-67-3, Rev 1, LOGIC DIAGRAM ESSENTIAL RAW COOLING WATER

4. Other

   a. 2-47W600-171, Rev 0, ELECTRICAL INSTRUMENT AND CONTROLS
   DRA 53630-004, Rev 0
   DRA 53630-046, Rev 1

   b. 2-47B601-55-1, ELECTRICAL INSTRUMENT TABULATION [Later]
   DRA 52453-04, Rev 0

   c. 2-47B601-55-2, ELECTRICAL INSTRUMENT TABULATION [Later]
   DRA 52453-05, Rev 0

   d. 2-47B601-55-3, ELECTRICAL INSTRUMENT TABULATION [Later]
   DRA 52453-06, Rev 0

   e. 2-47B601-55-4, ELECTRICAL INSTRUMENT TABULATION [Later]
   DRA 52453-07, Rev 0

Data Package: Page ____ of ____ **Date _____**

2.2 Developmental References (continued)

f. 2-45B655-5C, Rev 0, ANNUNCIATOR INPUTS WINDOW BOX XA-55-5C

g. 2-45B655-E5C, Rev 0, ANNUNCIATOR WINDOW BOX XA-55-5C ENGRAVING

h. 2-45B655-6E, Rev 0, ANNUNCIATOR INPUTS WINDOW BOX XA-55-6E
DCA 52630-091, Rev 0

i. 2-45B655-E6E, Rev 0, ANNUNCIATOR WINDOW BOX XA-55-6E ENGRAVING

j. 2-45B655-6F, Rev 0, ANNUNCIATOR INPUTS WINDOW BOX XA-55-6F
DRA 52343-236, Rev 0
DCA 52630-092, Rev 0

k. 2-45B655-E6F, Rev 0, ANNUNCIATOR WINDOW BOX XA-55-6F ENGRAVING

5. Vendor Manuals

a. VM-F180-3066, Rev 0, Foxboro Instruction Book 3473 743CB Field Station Micro Controller

Data Package: Page ____ of ____ **Date _____**

2.2 Developmental References (continued)

C. Documents

1. GTM-05, HVAC Air Balance (Draft)
2. WBN2-30RB-4002, Rev 1, Reactor Building Ventilation System
3. G-37, Rev 4, Testing and Balancing of HVAC Systems During Installation, Modification, and Maintenance
4. 2-TSD-30I-1, Rev 1, Containment Air Cooling System - Control Rod Drive Mechanism Coolers
5. 2-PTI-030L-01, HFT Containment Temperature Survey (Draft)
6. 2-PTI-067-02-A, Rev 0, ERCW System Flow Balance - Train A
7. 2-PTI-067-02-B, Rev 0, ERCW System Flow Balance - Train B
8. 2-PTI-067-03, ERCW Valve Logic Test (Draft)
9. MI-57.002, Rev 39, Westinghouse DS Circuit Breaker Routine Maintenance, Inspection and Testing
10. SSD-2-LPT-67-85, Rev 0, Control Rod Drive Vent Cooler A Temp
11. SSD-2-LPT-67-101, Rev 0, Control Rod Drive Vent Cooler B Temp
12. SSD-2-LPT-67-93, Rev 0, Control Rod Drive Vent Cooler C Temp
13. SSD-2-LPT-67-109, Rev 0, Control Rod Drive Vent Cooler D Temp

Data Package: Page ____ of ____ **Date _____**

3.0 PRECAUTIONS AND LIMITATIONS

A. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Procedure 1021.

B. Steps may be repeated if all components cannot be tested in a step. However, if the test has been exited, prerequisite steps must be re-verified and a Chronological Test Log (CTL) entry made.

C. Discrepancies between component ID tags and the description in a procedure/instruction if the UNIDs match, exclusive of place keeping zeros and train designators (e.g.; 2-HS-31-468 vs. 2-HS-031-0468) and the noun description is sufficient to identify the component. This condition does not require a Test Deficiency Notice (TDN) in accordance SMP-14.0. If the component label needs to be changed, a Tag Request Form (TR Card) should be processed in accordance with TI-12.14. Make an entry in the CTL and continue testing.

D. IF/THEN steps may be marked N/A if stated condition does not exist.

E. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.

F. All terminal points and connections are to be considered energized. Instrumentation must be used to determine if the circuits are de-energized.

G. Retermination of lifted leads requires that their restored bend radius is equal to or greater than the as-found condition.

H. CRDM Cooler Circuit Breakers have Overload Trip Switch (OTS) reset coils. Placing the Handswitch to STOP will energize the OTS Reset Coil and reset the OTS. The OTS Reset Coil should only be energized momentarily; the OTS contact in series with the coil should open to de-energize the coil. To avoid overheating the coil, do not hold Handswitch in STOP if the coil does not de-energize.

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

J. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.

Data Package: Page ____ of ____ **Date _____**

3.0 PRECAUTIONS AND LIMITATIONS (continued)

K. Problems identified during the test shall be annotated on the CTL, including a description of the problem, the procedure step when/where the problem was identified, corrective action steps taken to resolve the problem, and the number of the corrective action document, if one was required.

L. Observe all Radiation Protection requirements when working in or near contaminated areas.

M. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.

N. Vibration testing of this system is performed during GTM-05, HVAC Air Balance for this system.

O. During the performance of this procedure, visual observation of fans and ductwork is required. This includes steady-state and transient operations (fan starts and stops) with visual confirmation that vibration is not excessive.

P. To verify that transient conditions are not causing excessive vibration, observe components (duct, dampers, fans, etc) during the transient, to the extent practical. If not practical to observe during the transient, verify after the transient that no damage has occurred.

Q. If the vibration is determined to be excessive, the Test Engineer shall initiate a TDN.

R. Operation of CRDM Cooler Fans could create a local personnel hazard due to high noise levels, high air velocity, and the possibility of flying debris. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

S. CRDM Cooler control switches in the Main Control Room may NOT be placed in PULL A-P AUTO. Auto-start features enabled by this switch position are disabled and are not tested in this instruction.

Data Package: Page ____ of ____ **Date _____**

4.0 PREREQUISITE ACTIONS

NOTE

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

4.1 Preliminary Actions

[1] **VERIFY** the test/performance copy of this Preoperational Test Instruction (PTI) is the current revision and as needed, each test person assisting in this test has the current revision. _____

[2] **OBTAIN** copies of the applicable forms from the latest revision of SMP-9.0, **AND**

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

[3] **ENSURE** changes to the references listed on Appendix A have been reviewed, and determined NOT to adversely affect the test performance. _____

[4] **VERIFY** current revisions and change paper for referenced drawings have been reviewed and determined NOT to adversely affect the test performance, **AND**

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

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

Data Package: Page ____ of ____ **Date _____**

4.1 Preliminary Actions (continued)

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

ENSURE that they will NOT adversely affect the test performance.

A. Section 6.1 _____

B. Section 6.2 _____

C. Section 6.3 _____

D. Section 6.4 _____

E. Section 6.5 _____

F. Section 6.6 _____

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

A. Section 6.1 _____

B. Section 6.2 _____

C. Section 6.3 _____

D. Section 6.4 _____

E. Section 6.5 _____

F. Section 6.6 _____

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

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

Data Package: Page ____ of ____ **Date _____**

4.1 Preliminary Actions (continued)

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

JTG Meeting Number: _____ _____

[10] **ATTACH** completed GTM-05 HVAC Air Balance Package for system 30I to this instruction. _____

[11] **ENSURE** a review of outstanding Clearances has been coordinated with Unit 2 Operations for impact to the test performance, **AND**

RECORD in Appendix B, Temporary Condition Log if required. _____

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

RECORD on Appendix C, Permanent Plant Instrumentation Log.

A. Section 6.2 _____

B. Section 6.5 _____

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

VERIFY no conditions exist that will impact test performance.

A. Section 6.1 _____

B. Section 6.2 _____

C. Section 6.3 _____

D. Section 6.4 _____

E. Section 6.5 _____

Data Package: Page ____ of ____ **Date _____**

4.1 Preliminary Actions (continued)

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

A. Section 6.1 _____

B. Section 6.2 _____

C. Section 6.3 _____

D. Section 6.4 _____

E. Section 6.5 _____

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

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

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

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

A. Switched Jumpers [2] _____

B. Handheld Jumper [1] _____

Data Package: Page ____ of ____ **Date _____**

4.3 Field Preparations

[1] **ENSURE** the following systems are operable and have been placed in service to the extent necessary to perform this test:

A. System 32, Control Air _____

B. System 55, Annunciator and Sequential Events Recording System _____

C. System 67, Essential Raw Cooling Water _____

D. System 99, Reactor Protection System _____

E. System 212, 480V Shutdown Power _____

F. System 235, 120V AC Vital Power System _____

G. System 236, 125V DC Vital Power System _____

H. System 291, Integrated Computer System (ICS) _____

[2] **ENSURE** the following ICS points are in scan:

A. HD2030, VENT SYS HS-38A, 88A, 74A, 77A, 83A _____

B. HD2064, VENT SYS HS-39A, 78A, 75A, 92A, 80A _____

C. T1100A, CRDM COOL UNIT A-A EXHAUST _____

D. T1101A, CRDM COOL UNIT B-B EXHAUST _____

E. T1102A CRDM COOL UNIT C-A EXHAUST _____

F. T1103A CRDM COOL UNIT D-B EXHAUST _____

G. T1104A CRDM COOL UNIT C-A B-B INTAKE _____

H. T1105A CRDM COOL UNIT A-A D-B INTAKE _____

Data Package: Page ____ of ____ **Date _____**

4.3 Field Preparations (continued)

NOTES

1) Any Annunciator points associated with 2-MUX-55-12 and 2-MUX-55-13 ONLY have master switches at the bottom of each terminal strip.
2) All points associated with 2-TBK-55-25, 2-TBK-55-26, 2-TBK-55-27, and 2-TBK-55-28 will not have individual switches or a master switch.

[3] **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:

A. 2-XA-55-5C-102A, CRDM COOLER FLOW LO _____

B. 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT _____

C. 2-XA-55-6F-148B, ACR PNL 2-L-11A _____

D. 2-XA-55-6F-148C, ACR PNL 2-L-11B _____

E. 2-XA-55-6F-149B,
480 SD BD 2A1-A/2A2-A/CA VT BD 2A1-A _____

F. 2-XA-55-6F-150B,
480 SD BD 2B1-B/2B2-B/CA VT BD 2B1-B _____

Data Package: Page ____ of ____ **Date _____**

4.3 Field Preparations (continued)

[4] **ENSURE** Essential Raw Cooling Water Temperature Control Valves (TCVs) and Temperature Indicating Controllers (TICs) are available to support test activities.

A. 2-TCV-67-85, CRD VENT CLR 2A-A OUT TEMP CNTL (Subsection 6.2.1) _____

B. 2-TIC-67-85, CRD VENT CLR 2A OUT TEMP CNTL (Subsection 6.2.1) _____

C. 2-TCV-67-101, CRD VENT CLR 2B-B OUT TEMP CNTL (Subsection 6.2.2) _____

D. 2-TIC-67-101, CRD VENT CLR 2B OUT TEMP CNTL (Subsection 6.2.2) _____

E. 2-TCV-67-93, CRD VENT CLR 2C-A OUT TEMP CNTL (Subsection 6.2.3) _____

F. 2-TIC-67-93, CRD VENT CLR 2C OUT TEMP CNTL (Subsection 6.2.3) _____

G. 2-TCV-67-109, CRD VENT CLR 2D-B OUT TEMP CNTL (Subsection 6.2.4) _____

H. 2-TIC-67-109, CRD VENT CLR 2D OUT TEMP CNTL (Subsection 6.2.4) _____

[5] **ENSURE** ERCW system is aligned per 0-SOI-67.01 and/or 2-SOI-30.03, as applicable to support test performance. (Section 6.2) _____

Data Package: Page ____ of ____ **Date _____**

4.3 Field Preparations (continued)

[6] **RECORD** the As-Found position of the following ERCW Temperature Indicating Controllers' Auto/Manual (A/M) Status, Setpoints and Outputs on Panel 2-L-26, [A15U/692 (Pent Rm)]:

A. 2-TIC-67-85, CRD VENT CLR 2A OUT TEMP CNTL (SubSection 6.2.1)

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____

B. 2-TIC-67-101, CRD VENT CLR 2B OUT TEMP CNTL (SubSection 6.2.2)

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____

C. 2-TIC-67-93, CRD VENT CLR 2C OUT TEMP CNTL (SubSection 6.2.3)

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____

D. 2-TIC-67-109, CRD VENT CLR 2D OUT TEMP CNTL (SubSection 6.2.4)

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____

Data Package: Page ____ of ____ **Date _____**

4.3 Field Preparations (continued)

[7] **ENSURE** the following system 67, ERCW Temperature Indicating Controllers on Panel 2-L-26, Auto/Manual Status is in Manual (M) and outputs are adjusted for maximum cooling (valve full open):

A. 2-TIC-67-85, CRD VENT CLR 2A TEMP CNTL (SubSection 6.2.1) _____

B. 2-TIC-67-101, CRD VENT CLR 2B TEMP CNTL (SubSection 6.2.2) _____

C. 2-TIC-67-93, CRD VENT CLR 2C TEMP CNTL (SubSection 6.2.3) _____

D. 2-TIC-67-109, CRD VENT CLR 2D OUT TEMP CNTL (SubSection 6.2.4) _____

[8] **VERIFY** there are no Unit 2 Phase B Containment Isolation Signals present by the ∅B window NOT LIT on either the TR-A or TR-B MASTER ISOL SIGNAL STATUS PNL (Window 3 on 2-XX-55-6C and 2-XX-55-6D) on 2-M-6. _____

[9] **ENSURE** system is configured in accordance with Appendix D, Switch Lineup. _____

[10] **ENSURE** system is configured in accordance with Appendix E, Power Lineup. _____

[11] **ENSURE** the Reactor Vessel Head is in place with the CRDM Shroud & Duct installed. _____

[12] **VERIFY** the Reactor Coolant System (RCS) is NOT filled and vented.

A. Section 6.4 _____

B. Section 6.5 _____

Data Package: Page ____ of ____ **Date _____**

4.3 Field Preparations (continued)

NOTE

The following jumpers will be used to simulate Phase B Containment Isolation Signals.

[13] **INSTALL** switched jumpers at the following locations, **AND**

ENSURE that the jumper test switches are OPEN (OFF).

[13.1] Labeled TS-1:
In SSPS Train-A Output Cabinet 2-R-48, at TB615, between Pt. 11 (wire 2340VL) and Pt. 12 (wire CNA1). (Drawing 45N2676-4).

A. Jumper Installed _____ 1st _____ CV

B. Test Switch OPEN (OFF) _____

[13.2] Labeled TS-2:
In SSPS Train-B Output Cabinet 2-R-51, at TB615, between Pt. 11 (wire 2435VL) and Pt. 12 (wire CNB1). (Drawing 45N2677-4).

A. Jumper Installed _____ 1st _____ CV

B. Test Switch OPEN (OFF) _____

Data Package: Page ____ of ____ **Date _____**

4.3 Field Preparations (continued)

NOTE
The following step will disable the CRDM Coolers' Auto-start on Low Flow function.

[14] **LIFT** the following wires:

A. Wire A17BC3: Point 1 on Terminal Block TA in 2-JB-293-494 [Lwr Cntmt/703 AZ 50°] (Drawing 45W2748-1)

_____ 1st

_____ CV

B. Wire B17CC3: Point 2 on Terminal Block TA in 2-JB-293-517 [Lwr Cntmt/703 AZ 135°] (Drawing 45W2748-3)

_____ 1st

_____ CV

C. Wire A27AC3: Point 2 on Terminal Block TA in 2-JB-293-519 [Lwr Cntmt/703 AZ 221°] (Drawing 45W2748-2)

_____ 1st

_____ CV

D. Wire B27BC3: Point 2 on Terminal Block TA in 2-JB-293-521 [Lwr Cntmt/703 AZ 315°] (Drawing 45W2748-4)

_____ 1st

_____ CV

Data Package: Page ____ of ____ **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 2 Supervisor's (US/SRO) or Shift Manager's (SM) authorization.

_____ _____
Unit 2 US/SRO/SM Signature — Date

[3] **OBTAIN** the Unit 1 Supervisor's (US/SRO) or Shift Manager's (SM) authorization.

_____ _____
Unit 1 US/SRO/SM Signature — Date

Data Package: Page ____ of ____ **Date _____**

5.0 ACCEPTANCE CRITERIA

A. CRDM Cooler Dampers

1. The CRDM Cooler Dampers' manual controls and indications operate correctly.

Damper	Controls and Indications (Main Control Room)	Controls and Indications (Auxiliary Control Room)
2-TCO-30-84	SubSection 6.1.1	SubSection 6.1.1
2-TCO-30-85	SubSection 6.1.2	SubSection 6.1.2
2-TCO-30-93	SubSection 6.1.3	SubSection 6.1.3
2-TCO-30-94	SubSection 6.1.4	SubSection 6.1.4
2-TCO-30-89	SubSection 6.1.5	SubSection 6.1.5
2-TCO-30-90	SubSection 6.1.6	SubSection 6.1.6
2-TCO-30-81	SubSection 6.1.7	SubSection 6.1.7
2-TCO-30-82	SubSection 6.1.8	SubSection 6.1.8

2. The Shroud Suction Damper associated with each CRDM Cooler operates correctly

Damper	Opens/Closes when associated CRDM Cooler starts/stops	
	XS in NOR	XS in AUX
2-TCO-30-84 (CRDM Cooler 2A-A)	6.2.1[12]G 6.2.1[15]F	6.2.1[20]D 6.2.1[21]D
2-TCO-30-93 (CRDM Cooler 2B-B)	6.2.2[12]G 6.2.2[15]F	6.2.2[20]D 6.2.2[21]D
2-TCO-30-89 (CRDM Cooler 2C-A)	6.2.3[12]G 6.2.3[15]F	6.2.3[20]D 6.2.3[21]D
2-TCO-30-81 (CRDM Cooler 2D-B)	6.2.4[12]G 6.2.4[15]F	6.2.4[20]D 6.2.4[21]D

Data Package: Page ____ of ____ **Date _____**

5.0 ACCEPTANCE CRITERIA (continued)

B. CRDM Cooler Units

1. The CRDM Coolers' manual and automatic controls, interlocks, annunciations, alarms, and indications operate correctly.

Cooler	Controls and Indications (Main Control Room)	Controls and Indications (480V Shutdown Bds)
CRDM Cooler 2A-A (2-CLR-30-83)	SubSection 6.2.1	SubSection 6.2.1
CRDM Cooler 2B-B (2-CLR-30-92)	SubSection 6.2.2	SubSection 6.2.2
CRDM Cooler 2C-A (2-CLR-30-88)	SubSection 6.2.3	SubSection 6.2.3
CRDM Cooler 2D-B (2-CLR-30-80)	SubSection 6.2.4	SubSection 6.2.4

2. CRDM Cooler intake and exhaust air temperatures output to the ICS properly.

ICS Points	ICS Point Qualities are GOOD
CRDM Cooler 2A-A: T1100A T1105A	6.2.1[13]
CRDM Cooler 2B-B: T1101A T1104A	6.2.2[13]
CRDM Cooler 2C-A: T1102A T1104A	6.2.3[13]
CRDM Cooler 2D-B: T1103A T1105A	6.2.4[13]

Data Package: Page ____ of ____ **Date _____**

5.0 ACCEPTANCE CRITERIA (continued)

3. The ERCW Control Valves associated with each CRDM Cooler operate correctly.

Valve	Valve modulates open/closes when CRDM Cooler starts/stops	
	XS in NOR	XS in AUX
2-TCV-67-85 (CRDM Cooler 2A-A)	6.2.1[12]G 6.2.1[15]F	6.2.1[20]D 6.2.1[21]D
2-TCV-67-101 (CRDM Cooler 2B-B)	6.2.2[12]G 6.2.2[15]F	6.2.2[20]D 6.2.2[21]D
2-TCV-67-93 (CRDM Cooler 2C-A)	6.2.3[12]G 6.2.3[15]F	6.2.3[20]D 6.2.3[21]D
2-TCV-67-109 (CRDM Cooler 2D-B)	6.2.4[12]G 6.2.4[15]F	6.2.4[20]D 6.2.4[21]D

4. The CRDM Coolers respond appropriately to Engineered Safety Feature Actuation System (ESFAS) signals:

Cooler	Phase B (∅B) Containment Isolation Signal		
	XS in NORMAL		XS in AUX
	Stops on ∅B	Remains stopped after ∅B reset	Can be manually started and run with ∅B signal in effect
CRDM Cooler 2A-A (2-CLR-30-83)	6.3.1[7]A	6.3.1[9]A	6.3.1[13]
CRDM Cooler 2B-B (2-CLR-30-92)	6.3.2[7]A	6.3.2[9]A	6.3.2[13]
CRDM Cooler 2C-A (2-CLR-30-88)	6.3.1[7]B	6.3.1[9]B	6.3.1[15]
CRDM Cooler 2D-B (2-CLR-30-80)	6.3.2[7]B	6.3.2[9]B	6.3.2[15]

Data Package: Page ____ of ____ **Date _____**

5.0 ACCEPTANCE CRITERIA (continued)

5. The CRDM Coolers respond appropriately to a Bus Undervoltage condition.

Cooler	XS in NORMAL		XS in AUX	
	Stops on LOOP	Remains stopped after bus voltage is restored	Stops on LOOP	Restarts after bus voltage is restored
CRDM Cooler 2A-A (2-CLR-30-83)	6.4.1[6]	6.4.1[8]	6.4.1[12]	6.4.1[14]
CRDM Cooler 2B-B (2-CLR-30-92)	6.4.2[6]	6.4.2[8]	6.4.2[12]	6.4.2[14]
CRDM Cooler 2C-A (2-CLR-30-88)	6.4.3[6]	6.4.3[8]	6.4.3[12]	6.4.3[14]
CRDM Cooler 2D-B (2-CLR-30-80)	6.4.4[6]	6.4.4[8]	6.4.4[12]	6.4.4[14]

6. The CRDM Coolers respond appropriately to a Low Flow condition in their paired CRDM cooler. (Only when XS is in AUX)

Cooler Pair	Auto-start on Low Flow in paired Cooler to maintain 1 Cooler per pair in operation.	
CRDM Cooler 2A-A and 2D-B (2-CLR-30-83 and -80)	2A-A auto-start:	6.5.1[8]
	2D-B auto-start:	6.5.1[11]
CRDM Cooler 2B-B and 2C-A (2-CLR-30-92 and -88)	2B-B auto-start:	6.5.2[8]
	2C-A auto-start;	6.5.2[11]

Data Package: Page ____ of ____ **Date _____**

5.0 ACCEPTANCE CRITERIA (continued)

7. The CRDM Coolers provide the required minimum air flows with suction aligned to the CRDM Shroud:

Cooler	Minimum Flow per cooler: 21,500 CFM*
CRDM Cooler 2A-A (2-CLR-30-83)	6.6[4]
CRDM Cooler 2B-B (2-CLR-30-92)	6.6[5]
CRDM Cooler 2C-A (2-CLR-30-88)	6.6[6]
CRDM Cooler 2D-B (2-CLR-30-80)	6.6[7]

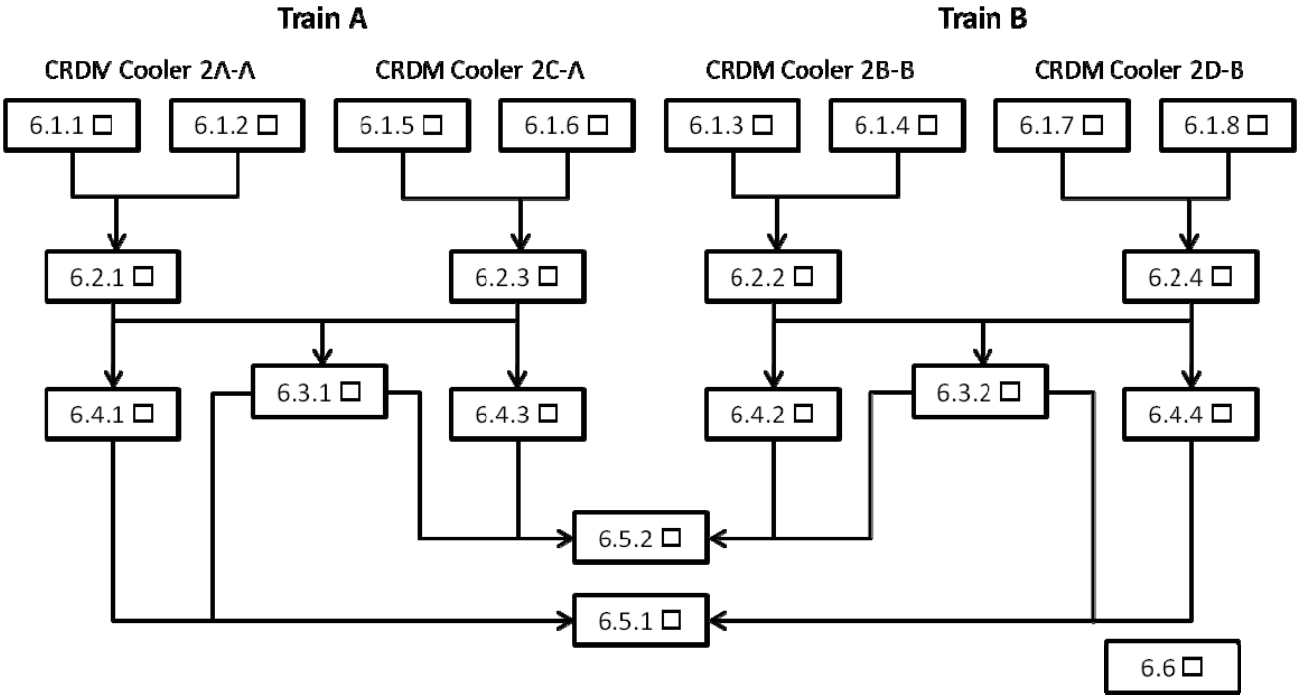
* This instruction does not perform any air flow measurements. These are done in GTM-05, HVAC Air Balance. The uncertainties associated with taking these measurements will be handled within GTM-05 and will not be calculated in this instruction.

Data Package: Page ____ of ____ **Date _____**

6.0 PERFORMANCE

NOTES

1) The Sections of this test shall be performed per the flow chart below:



2) The Subsections of Sections 6.1 through 6.4 may be performed in any order provided that each Subsection's applicable predecessor Subsection(s) are completed. Section 6.5 is to be performed last and Section 6.6 may be performed at any time during this instruction. Unless otherwise noted, steps within each section are to be performed in the order written. The flowchart above may be used as a placekeeping tool throughout the performance of this instruction.

3) CRDM Cooler Handswitches in the Main Control Room spring return to A AUTO from START and STOP positions.

4) CRDM Cooler Handswitches on the 480V Shutdown Boards spring return to AUTO from CLOSE and TRIP positions.

5) CRDM Coolers have status indication lights at two locations in the Main Control Room:

- On 2-M-9 at their associated Handswitch
- On 2-M-6, on Train A (2-XX-55-6E) or Train B (2-XX-55-6F) CONTAINMENT ISOL STATUS PNL, hereafter abbreviated in this instruction as CISP.

Data Package: Page ____ of ____ **Date _____**

6.1 CRDM Cooler Dampers Logic Test

NOTE

Subsections 6.1.1 through 6.1.8 may be performed in any order. The diagram at the beginning of Section 6.0 may be used as a placekeeping tool throughout the performance of this Section. Unless otherwise noted, the steps within each Subsection shall be performed in the order written.

6.1.1 2-TCO-30-84, CRDM Cooler 2A-A Shroud Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT, [2-M-9], is in CLOSE. _____

[3] **ENSURE** Transfer Switch 2-XS-30-84, CRDM CLR A-A SHROUD SUCT DMPR, [2-L-11A], is in NOR. _____

[4] **VERIFY** on 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-84A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, [Lwr Cntmt/703 AZ 15°], is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.1 2-TCO-30-84, CRDM Cooler 2A-A Shroud Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-84A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, is CLOSED. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION, is in CLOSE. _____

[8] **ENSURE** 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-84, CRDM CLR A-A SHROUD SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.1.1 2-TCO-30-84, CRDM Cooler 2A-A Shroud Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-84C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, is OPEN. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-84C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.1 2-TCO-30-84, CRDM Cooler 2A-A Shroud Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-84, CRDM CLR A-A SHROUD SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.1. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.1.2 2-TCO-30-85, CRDM Cooler 2A-A Lower Containment Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-85A, CRDM CLR A-A LWR CNTMT SUCT, [2-M-9], is in OPEN. _____

[3] **ENSURE** Transfer Switch 2-XS-30-85, CRDM CLR A-A LWR CNTMT SUCT DMPR, [2-L-11A], is in NOR. _____

[4] **VERIFY** on 2-HS-30-85C, CRDM CLR A-A LWR CNTMT SUCT, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-85A, CRDM CLR A-A LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-85A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-85, CRDM COOLER 2A-A LOWER COMPARTMENT SUCT, [Lwr Cntmt/703 AZ 15°], is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.2 2-TCO-30-85, CRDM Cooler 2A-A Lower Containment Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-85A, CRDM CLR A-A LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-85A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-85, CRDM COOLER 2A-A LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-85C, CRDM CLR A-A LWR CNTMT SUCT, is in OPEN. _____

[8] **ENSURE** 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-85, CRDM CLR A-A LWR CNTMT SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-85A, CRDM CLR A-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-85C, CRDM CLR A-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

Data Package: Page ____ of ____ **Date _____**

6.1.2 2-TCO-30-85, CRDM Cooler 2A-A Lower Containment Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-85C, CRDM CLR A-A LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-85C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-85, CRDM COOLER 2A-A LOWER COMPARTMENT SUCT, is CLOSED. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-85C, CRDM CLR A-A LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-85C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-85, CRDM COOLER 2A-A LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.2 2-TCO-30-85, CRDM Cooler 2A-A Lower Containment Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-85, CRDM CLR A-A LWR CNTMT SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-85A, CRDM CLR A-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

D. On Handswitch 2-HS-30-85C, CRDM CLR A-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.2. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.1.3 2-TCO-30-93, CRDM Cooler 2B-B Shroud Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT, [2-M-9], is in CLOSE. _____

[3] **ENSURE** Transfer Switch 2-XS-30-93, CRDM CLR B-B SHROUD SUCT DMPR, [2-L-11B], is in NOR. _____

[4] **VERIFY** on 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-93A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, [Lwr Cntmt/703 AZ 165°], is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.3 2-TCO-30-93, CRDM Cooler 2B-B Shroud Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-93A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, is CLOSED. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION, is in CLOSE. _____

[8] **ENSURE** 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-93, CRDM CLR B-B SHROUD SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.1.3 2-TCO-30-93, CRDM Cooler 2B-B Shroud Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-93C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, is OPEN. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-93C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.3 2-TCO-30-93, CRDM Cooler 2B-B Shroud Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-93, CRDM CLR B-B SHROUD SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.3. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.1.4 2-TCO-30-94, CRDM Cooler 2B-B Lower Containment Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT, [2-M-9], is in OPEN. _____

[3] **ENSURE** Transfer Switch 2-XS-30-94, CRDM CLR B-B LWR CNTMT SUCT DMPR, [2-L-11B], is in NOR. _____

[4] **VERIFY** on 2-HS-30-94C, CRDM CLR B-B LWR CNTMT SUCT, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-94A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-94, CRDM COOLER 2B-B LOWER COMPARTMENT SUCT, [Lwr Cntmt/703 AZ 165°], is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.4 2-TCO-30-94, CRDM Cooler 2B-B Lower Containment Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-94A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-94, CRDM COOLER 2B-B LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-94C, CRDM CLR B-B LWR CNTMT SUCT, is in OPEN. _____

[8] **ENSURE** 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-94, CRDM CLR B-B LWR CNTMT SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-94C, CRDM CLR B-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

Data Package: Page ____ of ____ **Date _____**

6.1.4 2-TCO-30-94, CRDM Cooler 2B-B Lower Containment Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-94C, CRDM CLR B-B LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-94C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-94, CRDM COOLER 2B-B LOWER COMPARTMENT SUCT, is CLOSED. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-94C, CRDM CLR B-B LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-94C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-94, CRDM COOLER 2B-B LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.4 2-TCO-30-94, CRDM Cooler 2B-B Lower Containment Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-94, CRDM CLR B-B LWR CNTMT SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

D. On Handswitch 2-HS-30-94C, CRDM CLR B-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.4. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.1.5 2-TCO-30-89, CRDM Cooler 2C-A Shroud Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT, [2-M-9], is in CLOSE. _____

[3] **ENSURE** Transfer Switch 2-XS-30-89, CRDM CLR C-A SHROUD SUCT DMPR, [2-L-11A], is in NOR. _____

[4] **VERIFY** on 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-89A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, [Lwr Cntmt/703 AZ 195°], is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.5 2-TCO-30-89, CRDM Cooler 2C-A Shroud Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-89A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, is CLOSED. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION, is in CLOSE. _____

[8] **ENSURE** 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-89, CRDM CLR C-A SHROUD SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.1.5 2-TCO-30-89, CRDM Cooler 2C-A Shroud Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-89C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, is OPEN. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-89C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.5 2-TCO-30-89, CRDM Cooler 2C-A Shroud Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-89, CRDM CLR C-A SHROUD SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.5. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.1.6 2-TCO-30-90, CRDM Cooler 2C-A Lower Containment Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-90A, CRDM CLR C-A LWR CNTMT SUCT, [2-M-9], is in OPEN. _____

[3] **ENSURE** Transfer Switch 2-XS-30-90, CRDM CLR C-A LWR CNTMT SUCT DMPR, [2-L-11A], is in NOR. _____

[4] **VERIFY** on 2-HS-30-90C, CRDM CLR C-A LWR CNTMT SUCT, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-90A, CRDM CLR C-A LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-90A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-90, CRDM COOLER 2C-A LOWER COMPARTMENT SUCT, [Lwr Cntmt/703 AZ 195°], is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.6 2-TCO-30-90, CRDM Cooler 2C-A Lower Containment Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-90A, CRDM CLR C-A LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-90A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-90, CRDM COOLER 2C-A LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-90C, CRDM CLR C-A LWR CNTMT SUCT, is in OPEN. _____

[8] **ENSURE** 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-90, CRDM CLR C-A LWR CNTMT SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-90A, CRDM CLR C-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-90C, CRDM CLR C-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

Data Package: Page ____ of ____ **Date _____**

6.1.6 2-TCO-30-90, CRDM Cooler 2C-A Lower Containment Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-90C, CRDM CLR C-A LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-90C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-90, CRDM COOLER 2C-A LOWER COMPARTMENT SUCT, is CLOSED. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-90C, CRDM CLR C-A LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-90C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-90, CRDM COOLER 2C-A LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.6 2-TCO-30-90, CRDM Cooler 2C-A Lower Containment Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-90, CRDM CLR C-A LWR CNTMT SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148B, ACR PNL 2-L-11A, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-B ACR PNL 2-L-11A XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-90A, CRDM CLR C-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

D. On Handswitch 2-HS-30-90C, CRDM CLR C-A LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.6. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.1.7 2-TCO-30-81, CRDM Cooler 2D-B Shroud Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT, [2-M-9], is in CLOSE. _____

[3] **ENSURE** Transfer Switch 2-XS-30-81, CRDM CLR D-B SHROUD SUCT DMPR, [2-L-11B], is in NOR. _____

[4] **VERIFY** on 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-81A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, [Lwr Cntmt/703 AZ 345°], is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.7 2-TCO-30-81, CRDM Cooler 2D-B Shroud Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-81A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, is CLOSED. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION, is in CLOSE. _____

[8] **ENSURE** 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-81, CRDM CLR D-B SHROUD SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.1.7 2-TCO-30-81, CRDM Cooler 2D-B Shroud Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-81C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, is OPEN. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-81C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.7 2-TCO-30-81, CRDM Cooler 2D-B Shroud Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-81, CRDM CLR D-B SHROUD SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.7. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.1.8 2-TCO-30-82, CRDM Cooler 2D-B Lower Containment Suction

[1] **ENSURE** all prerequisites listed in Section 4.0 for Subsection 6.1 have been completed. _____

[2] **ENSURE** Handswitch 2-HS-30-82A, CRDM CLR D-B LWR CNTMT SUCT, [2-M-9], is in OPEN. _____

[3] **ENSURE** Transfer Switch 2-XS-30-82, CRDM CLR D-B LWR CNTMT SUCT DMPR, [2-L-11B], is in NOR. _____

[4] **VERIFY** on 2-HS-30-82C, CRDM CLR D-B LWR CNTMT SUCT, [2-L-10]:

- Green Light OFF _____
- Red Light OFF _____

[5] **PLACE** Handswitch 2-HS-30-82A, CRDM CLR D-B LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-82A:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-82, CRDM COOLER 2D-B LOWER COMPARTMENT SUCT, [Lwr Cntmt/703 AZ 345°], is CLOSED. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.8 2-TCO-30-82, CRDM Cooler 2D-B Lower Containment Suction (continued)

[6] **PLACE** Handswitch 2-HS-30-82A, CRDM CLR D-B LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-82A:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-82, CRDM COOLER 2D-B LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

[7] **ENSURE** Handswitch 2-HS-30-82C, CRDM CLR D-B LWR CNTMT SUCT, is in OPEN. _____

[8] **ENSURE** 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

[9] **PLACE** Transfer Switch 2-XS-30-82, CRDM CLR D-B LWR CNTMT SUCT DMPR, to AUX, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is in ALARM. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is in ALARM (Red). _____

C. On 2-HS-30-82A, CRDM CLR D-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-82C, CRDM CLR D-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

Data Package: Page ____ of ____ **Date _____**

6.1.8 2-TCO-30-82, CRDM Cooler 2D-B Lower Containment Suction (continued)

[10] **PLACE** Handswitch 2-HS-30-82C, CRDM CLR D-B LWR CNTMT SUCT, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-82C:

- Green Light ON _____
- Red Light OFF _____

B. 2-TCO-30-82, CRDM COOLER 2D-B LOWER COMPARTMENT SUCT, is CLOSED. (locally) _____

[11] **PLACE** Handswitch 2-HS-30-82C, CRDM CLR D-B LWR CNTMT SUCT, to OPEN, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-82C:

- Green Light OFF _____
- Red Light ON _____

B. 2-TCO-30-82, CRDM COOLER 2D-B LOWER COMPARTMENT SUCT, is OPEN. (locally) _____

Data Package: Page ____ of ____ **Date _____**

6.1.8 2-TCO-30-82, CRDM Cooler 2D-B Lower Containment Suction (continued)

[12] **PLACE** Transfer Switch 2-XS-30-82, CRDM CLR D-B LWR CNTMT SUCT DMPR, to NOR, **AND**

VERIFY the following:

A. 2-XA-55-6F-148C, ACR PNL 2-L-11B, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 148-C ACR PNL 2-L-11B XS IN AUX, is NORMAL (Green). _____

C. On 2-HS-30-82A, CRDM CLR D-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light ON _____

D. On Handswitch 2-HS-30-82C, CRDM CLR D-B LWR CNTMT SUCT:

- Green Light OFF _____
- Red Light OFF _____

[13] **VERIFY** successful completion of this Subsection 6.1.8. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.2 CRDM Cooler Logic Test

NOTE

Subsections 6.2.1 through 6.2.4 may be performed in any order, provided their applicable predecessor Subsections are completed. Unless otherwise noted, the steps within each Subsection shall be performed in the order written. The diagram at the beginning of Section 6.0 may be used as a placekeeping tool throughout the performance of this Section.

6.2.1 CRDM Cooler 2A-A Logic

NOTE

Subsection 6.2.1 will be starting a stopping CRDM Cooler 2A-A. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.2 and Subsection 6.2.1 have been completed. _____

[2] **ENSURE** Subsections 6.1.1 and 6.1.2 have been completed. _____

[3] **RACK** Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83), [480V SHUTDOWN BOARD 2A1-A, Compartment 7B], to the TEST position. _____

[4] **VERIFY** 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

[5] **PRESS** the CRDM CLR FAN 2A-A MTR 1 BKR TEST CLOSE switch at Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-83:

- Green Light OFF _____
- Red Light ON _____
- Red Flag at Breaker Panel _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is in ALARM (after approximately 30 seconds). _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER A-A AIR FLOW LO, is in ALARM (Red). _____

[6] **PRESS** the CRDM CLR FAN 2A-A MTR 1 BKR TEST TRIP switch at Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-83:

- Green Light ON _____
- Red Light OFF _____
- Green Flag at Breaker Panel _____

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER A-A AIR FLOW LO, is NORMAL (Green). _____

[7] **ENSURE** Transfer Switch 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2, [480V SHUTDOWN BOARD 2A1-A, Compartment 5A], is in NORMAL. _____

[8] **RACK** Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83), to the CONNECTED position. _____

[9] **PLACE** Handswitch 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT, [2-M-9], to P AUTO. _____

[10] **PLACE** Handswitch 2-HS-30-85A, CRDM CLR A-A LWR CNTMT SUCT, [2-M-9], to CLOSE. _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[11] **VERIFY** the following:

A. Cooler 2-CLR-30-83, CRDM COOLER 2A-A, [Lwr Cntmt/703 AZ 25°], is OFF. _____

B. Damper 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, [Lwr Cntmt/703 AZ 15°], is CLOSED. _____

C. 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR _____

[12] **PLACE** Handswitch 2-HS-30-83A, CRDM CLR A-A, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-83A:

- Green Light OFF _____
- Red Light ON _____
- White Light OFF _____

B. On Handswitch 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT:

- Green Light OFF _____
- Red Light ON _____

C. On 2-XX-55-6E, Train A CISP, Window 105, CRDM CLR A FAN-30-83, [2-M-6]:

- Green Light OFF _____
- Red Light ON _____

D. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, remains CLEAR. (after approximately 30 seconds) _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

E. On Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2, [480V SHUTDOWN BOARD 2A1-A, Compartment 5A]:

- Green Light OFF _____
- Red Light ON _____

F. At Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83):

- Green Light OFF _____
- Red Light ON _____

G. Locally:

- Cooler 2-CLR-30-83, CRDM COOLER 2A-A, is ON. _____
- Damper 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, is OPEN. **(Acc Crit)** _____
- Valve 2-TCV-67-85, CRD VENT CLR 2A-A OUT TEMP CNTL, [Lwr Cntmt/716 AZ 8° (S Fan Rm)], modulates OPEN. **(Acc Crit)** _____

[13] **VERIFY** that the CRDM Cooler 2A-A intake and exhaust air temperature ICS Point Qualities are GOOD (Green). **(Acc Crit)**

- T1105A, CRDM COOL UNIT A-A D-B INTAKE _____
- T1100A, CRDM COOL UNIT A-A EXHAUST _____

[14] **RECORD** CRDM Cooler 2A-A intake and exhaust air temperatures as indicated by the ICS log points:

T1105A,
CRDM COOL UNIT A-A D-B INTAKE: _____ °F

T1100A,
CRDM COOL UNIT A-A EXHAUST: _____ °F _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[15] **PLACE** Handswitch 2-HS-30-83A, CRDM CLR A-A, to STOP,
AND

VERIFY the following:

A. On Handswitch 2-HS-30-83A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On Handswitch 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

C. On 2-XX-55-6E, Train A CISP, Window 105 CRDM CLR A FAN-30-83:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. At Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83):

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

F. Locally:

- Cooler 2-CLR-30-83, CRDM COOLER 2A-A, is OFF. _____
- Damper 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-85, CRD VENT CLR 2A-A OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[16] **ENSURE** 2-XA-55-6F-149B, 480 SD BD 2A1-A/2A2-A/CA VT BD 2A1-A, is CLEAR. _____

[17] **PLACE** the following Transfer Switches to AUX:

A. 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2 _____

B. 2-XS-30-84, CRDM CLR A-A SHROUD SUCTION, [2-L-11A] _____

C. 2-XS-67-85, CRDM CLR A-A ERCW OUTLET TCV, [2-L-11A] _____

[18] **ENSURE** the following Handswitches on 2-L-10 are in P AUTO:

A. 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION _____

B. 2-HS-67-85C, CRDM CLR A-A ERCW OUTLET TCV _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[19] **VERIFY** the following:

A. On Handswitch 2-HS-30-83A, CRDM CLR A-A:

- Green Light OFF _____
- Red Light OFF _____
- White Light OFF _____

B. On 2-XX-55-6E, Train A CISP, Window 105 CRDM CLR A FAN-30-83:

- Green Light OFF _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6F-149B, 480 SD BD 2A1-A/2A2-A/CA VT BD 2A1-A, is in ALARM _____
- Unit 2 Alarm Events Display Screen indicates 149-B 480 SD BD 2A1-A/2A2-A XS IN AUX, is in ALARM (Red). _____

D. On Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. On Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

F. At Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83):

- Green Light ON _____
- Red Light OFF _____

[20] **PLACE** Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-83C:

- Green Light OFF _____
- Red Light ON _____

B. On Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION:

- Green Light OFF _____
- Red Light ON _____

C. At Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83):

- Green Light OFF _____
- Red Light ON _____

D. Locally:

- Cooler 2-CLR-30-83, CRDM COOLER 2A-A, is ON. _____
- Damper 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, is OPEN **(Acc Crit)** _____
- Valve 2-TCV-67-85, CRD VENT CLR 2A-A OUT TEMP CNTL, modulates OPEN. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[21] **PLACE** Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2, to TRIP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-83C:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-84C, CRDM CLR A-A SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

C. At Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83):

- Green Light ON _____
- Red Light OFF _____

D. Locally:

- Cooler 2-CLR-30-83, CRDM COOLER 2A-A, is OFF. _____
- Damper 2-TCO-30-84, CRDM COOLER 2A-A SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-85, CRD VENT CLR 2A-A OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[22] **PLACE** Transfer Switch 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2, to NORMAL. _____

[23] **PLACE** the following Transfer Switches on 2-L-11A to NOR:

A. 2-XS-30-84, CRDM CLR A-A SHROUD SUCTION _____

B. 2-XS-67-85, CRDM CLR A-A ERCW OUTLET TCV _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[24] **PLACE** Handswitch 2-HS-30-84A, CRDM CLR A-A SHROUD SUCT, to CLOSE. _____

[25] **VERIFY** the following:

A. On Handswitch 2-HS-30-83A, CRDM CLR A-A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On 2-XX-55-6E, Train A CISP, Window 105 CRDM CLR A FAN-30-83:

- Green Light ON _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Motor Tripout Buzzer, [2-M-2], is OFF. _____
- 2-XA-55-6F-149B, 480 SD BD 2A1-A/2A2-A/CA VT BD 2A1-A, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 149-B 480 SD BD 2A1-A/2A2-A XS IN AUX, is NORMAL (Green). _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[26] **RACK** Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83), to the REMOVED position. _____

[27] **REMOVE** front cover of Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83). _____ 1st _____ CV

[28] **PLACE** Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83), Overload Trip Switch (OTS) mechanical lever (DTA plunger) to the TRIP position. _____

[29] **INSTALL** front cover of Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83). _____ 1st _____ CV

[30] **RACK** Breaker 2-BKR-30-83, CRDM CLR 2A-A (2-CLR-30-83), to the CONNECTED position. _____

[31] **VERIFY** the following:

A. On Handswitch 2-HS-30-83A, CRDM CLR A-A:

- Green Light ON _____
- Red Light OFF _____
- White Light ON _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is in ALARM. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is in ALARM (Red). _____
- Motor Tripout Buzzer is ON. _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

NOTES

1) The following step will electrically reset the Overload Trip Switch (OTS) for Breaker 2-BKR-30-83. Refer to Precaution 3.0H for further details.
2) If the following step does not reset the OTS, then the OTS may be reset manually by pressing the OTS Reset button on the front of the Breaker, and a Test Deficiency Notice shall be initiated.

[32] **RESET** the OTS by

PLACING Handswitch 2-HS-30-83A, CRDM CLR A-A to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-83A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green). _____
- Motor Tripout Buzzer is OFF. _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[33] **RECORD** the As-Found position of the following Handswitches on 2-M-9, **AND**

IF any of the following Handswitches are found in STOP PULL TO LOCK, **THEN**

PLACE that Handswitch in A AUTO.

A. 2-HS-30-38A, AIR RETURN FAN A-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

B. 2-HS-30-74A, LWR CNTMT CLR A-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

C. 2-HS-30-77A, LWR CNTMT CLR C-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

D. 2-HS-30-88A, CRDM CLR C-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

[34] **VERIFY** ICS Point HD2030, VENT SYS HS-38A, 88A, 74A, 77A, 83A, displays NOT P-L. _____

[35] **PLACE** Handswitch 2-HS-30-83A, CRDM CLR A-A to STOP PULL TO LOCK, **AND**

VERIFY ICS Point HD2030, VENT SYS HS-38A, 88A, 74A, 77A, 83A, displays PULLT-L. _____

[36] **PLACE** Handswitch 2-HS-30-85A, CRDM CLR A-A LWR CNTMT SUCT, to OPEN. _____

Data Package: Page ____ of ____ **Date _____**

6.2.1 CRDM Cooler 2A-A Logic (continued)

[37] **ENSURE** the following Handswitches are returned to their As-Found position recorded in Step 6.2.1[33].
(The As-Left position recorded in this step should match the As-Found position recorded in Step 6.2.1[33].)

A. 2-HS-30-38A, AIR RETURN FAN A-A

As-Left: _____ _____

B. 2-HS-30-74A, LWR CNTMT CLR A-A

As-Left: _____ _____

C. 2-HS-30-77A, LWR CNTMT CLR C-A

As-Left: _____ _____

D. 2-HS-30-88A, CRDM CLR C-A

As-Left: _____ _____

[38] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-85, CRD VENT CLR 2A TEMP CNTL, is returned to its As-Found positions recorded in Step 4.3[6]A.

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____
1st

_____
CV

[39] **VERIFY** successful completion of this Subsection 6.2.1. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic

NOTE

Subsection 6.2.2 will be starting a stopping CRDM Cooler 2B-B. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.2 and Subsection 6.2.2 have been completed. _____

[2] **ENSURE** Subsections 6.1.3 and 6.1.4 have been completed. _____

[3] **RACK** Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92), [480V SHUTDOWN BOARD 2B1-B, Compartment 7C], to the TEST position. _____

[4] **VERIFY** 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

[5] **PRESS** the CRDM CLR FAN 2B-B MTR 1 BKR TEST CLOSE switch at Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-92:

- Green Light OFF _____
- Red Light ON _____
- Red Flag at Breaker Panel _____

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is in ALARM (after approximately 30 seconds). _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER B-B AIR FLOW LO, is in ALARM (Red). _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[6] **PRESS** the CRDM CLR FAN 2B-B MTR 1 BKR TEST TRIP switch at Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-92:

- Green Light ON _____
- Red Light OFF _____
- Green Flag at Breaker Panel _____

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER B-B AIR FLOW LO, is NORMAL (Green). _____

[7] **ENSURE** Transfer Switch 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2, [480V SHUTDOWN BOARD 2B1-B, Compartment 5A], is in NORMAL. _____

[8] **RACK** Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92), to the CONNECTED position. _____

[9] **PLACE** Handswitch 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT, [2-M-9], to P AUTO. _____

[10] **PLACE** Handswitch 2-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT, [2-M-9], to CLOSE. _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[11] **VERIFY** the following:

A. Cooler 2-CLR-30-92, CRDM COOLER 2B-B, [Lwr Cntmt/703 AZ 155°], is OFF. _____

B. Damper 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, [Lwr Cntmt/703 AZ 165°], is CLOSED. _____

C. 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR _____

[12] **PLACE** Handswitch 2-HS-30-92A, CRDM CLR B-B, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-92A:

- Green Light OFF _____
- Red Light ON _____
- White Light OFF _____

B. On Handswitch 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT:

- Green Light OFF _____
- Red Light ON _____

C. On 2-XX-55-6F, Train B CISP, Window 117, CRDM CLR B FAN-30-92, [2-M-6]:

- Green Light OFF _____
- Red Light ON _____

D. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, remains CLEAR. (after approximately 30 seconds) _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

E. On Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2, [480V SHUTDOWN BOARD 2B1-B, Compartment 5A]:

- Green Light OFF _____
- Red Light ON _____

F. At Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92):

- Green Light OFF _____
- Red Light ON _____

G. Locally:

- Cooler 2-CLR-30-92, CRDM COOLER 2B-B, is ON. _____
- Damper 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, is OPEN. **(Acc Crit)** _____
- Valve 2-TCV-67-101, CRD VENT CLR 2B-B OUT TEMP CNTL, [Lwr Cntmt/716 AZ 172° (N Fan Rm)], modulates OPEN. **(Acc Crit)** _____

[13] **VERIFY** that the CRDM Cooler 2B-B intake and exhaust air temperature ICS Point Qualities are GOOD (Green). **(Acc Crit)**

- T1104A, CRDM COOL UNIT C-A B-B INTAKE _____
- T1101A, CRDM COOL UNIT B-B EXHAUST _____

[14] **RECORD** CRDM Cooler 2B-B intake and exhaust air temperatures as indicated by the ICS log points:

T1104A,
CRDM COOL UNIT C-A B-B INTAKE: _____ °F

T1101A,
CRDM COOL UNIT B-B EXHAUST: _____ °F _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[15] **PLACE** Handswitch 2-HS-30-92A, CRDM CLR B-B, to STOP,
AND

VERIFY the following:

A. On Handswitch 2-HS-30-92A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On Handswitch 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

C. On 2-XX-55-6F, Train B CISP, Window 117 CRDM CLR B FAN-30-92:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. At Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92):

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

F. Locally:

- Cooler 2-CLR-30-92, CRDM COOLER 2B-B, is OFF. _____
- Damper 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-101, CRD VENT CLR 2B-B OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[16] **ENSURE** 2-XA-55-6F-150B, 480 SD BD 2B1-B/2B2-B/CA VT BD 2B1-B, is CLEAR _____

[17] **PLACE** the following Transfer Switches to AUX:

A. 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2 _____

B. 2-XS-30-93, CRDM CLR B-B SHROUD SUCTION, [2-L-11B] _____

C. 2-XS-67-101, CRDM CLR B-B ERCW OUTLET TCV, [2-L-11B] _____

[18] **ENSURE** the following Handswitches on 2-L-10 are in P AUTO:

A. 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION _____

B. 2-HS-67-101C, CRDM CLR B-B ERCW OUTLET TCV _____

[19] **VERIFY** the following:

A. On Handswitch 2-HS-30-92A, CRDM CLR B-B:

- Green Light OFF _____
- Red Light OFF _____
- White Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

B. On 2-XX-55-6F, Train B CISP, Window 117 CRDM CLR B FAN-30-92:

- Green Light OFF _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6F-150B, 480 SD BD 2B1-B/2B2-B/CA VT BD 2B1-B, is in ALARM _____
- Unit 2 Alarm Events Display Screen indicates 150-B 480 SD BD 2B1-B/2B2-B XS IN AUX, is in ALARM (Red). _____

D. On Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. On Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

F. At Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92):

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[20] **PLACE** Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-92C:

- Green Light OFF _____
- Red Light ON _____

B. On Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION:

- Green Light OFF _____
- Red Light ON _____

C. At Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92):

- Green Light OFF _____
- Red Light ON _____

D. Locally:

- Cooler 2-CLR-30-92, CRDM COOLER 2B-B, is ON. _____
- Damper 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, is OPEN **(Acc Crit)** _____
- Valve 2-TCV-67-101, CRD VENT CLR 2B-B OUT TEMP CNTL, modulates OPEN. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[21] **PLACE** Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2, to TRIP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-92C:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-93C, CRDM CLR B-B SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

C. At Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92):

- Green Light ON _____
- Red Light OFF _____

D. Locally:

- Cooler 2-CLR-30-92, CRDM COOLER 2B-B, is OFF. _____
- Damper 2-TCO-30-93, CRDM COOLER 2B-B SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-101, CRD VENT CLR 2B-B OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[22] **PLACE** Transfer Switch 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2, to NORMAL. _____

[23] **PLACE** the following Transfer Switches on 2-L-11B to NOR:

A. 2-XS-30-93, CRDM CLR B-B SHROUD SUCTION _____

B. 2-XS-67-101, CRDM CLR B-B ERCW OUTLET TCV _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[24] **PLACE** Handswitch 2-HS-30-93A, CRDM CLR B-B SHROUD SUCT, to CLOSE. _____

[25] **VERIFY** the following:

A. On Handswitch 2-HS-30-92A, CRDM CLR B-B:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On 2-XX-55-6F, Train B CISP, Window 117 CRDM CLR B FAN-30-92:

- Green Light ON _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Motor Tripout Buzzer, [2-M-2], is OFF. _____
- 2-XA-55-6F-150B, 480 SD BD 2B1-B/2B2-B/CA VT BD 2B1-B, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 150-B 480 SD BD 2B1-B/2B2-B XS IN AUX, is NORMAL (Green). _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[26] **RACK** Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92), to the REMOVED position. _____

[27] **REMOVE** front cover of Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92). _____ 1st _____ CV

[28] **PLACE** Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92), Overload Trip Switch (OTS) mechanical lever (DTA plunger) to the TRIP position. _____

[29] **INSTALL** front cover of Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92). _____ 1st _____ CV

[30] **RACK** Breaker 2-BKR-30-92, CRDM CLR 2B-B (2-CLR-30-92), to the CONNECTED position. _____

[31] **VERIFY** the following:

A. On Handswitch 2-HS-30-92A, CRDM CLR B-B:

- Green Light ON _____
- Red Light OFF _____
- White Light ON _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is in ALARM. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is in ALARM (Red). _____
- Motor Tripout Buzzer is ON. _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

NOTES

1) The following step will electrically reset the Overload Trip Switch (OTS) for Breaker 2-BKR-30-92. Refer to Precaution 3.0H for further details.
2) If the following step does not reset the OTS, then the OTS may be reset manually by pressing the OTS Reset button on the front of the Breaker, and a Test Deficiency Notice shall be initiated.

[32] **RESET** the OTS by

PLACING Handswitch 2-HS-30-92A, CRDM CLR B-B to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-92A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green). _____
- Motor Tripout Buzzer is OFF. _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[33] **RECORD** the As-Found position of the following Handswitches on 2-M-9, **AND**

IF any of the following Handswitches are found in STOP PULL TO LOCK, **THEN**

PLACE that Handswitch in A AUTO.

A. 2-HS-30-39A, AIR RETURN FAN B-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

B. 2-HS-30-75A, LWR CNTMT CLR B-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

C. 2-HS-30-78A, LWR CNTMT CLR D-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

D. 2-HS-30-80A, CRDM CLR D-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

[34] **VERIFY** ICS Point HD2064, VENT SYS HS-39A, 78A, 75A, 92A, 80A, displays NOT P-L. _____

[35] **PLACE** Handswitch 2-HS-30-92A, CRDM CLR B-B to STOP PULL TO LOCK, **AND**

VERIFY ICS Point HD2064, VENT SYS HS-39A, 78A, 75A, 92A, 80A, displays PULLT-L. _____

[36] **PLACE** Handswitch 2-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT, to OPEN. _____

Data Package: Page ____ of ____ **Date _____**

6.2.2 CRDM Cooler 2B-B Logic (continued)

[37] **ENSURE** the following Handswitches are returned to their As-Found position recorded in Step 6.2.2[33].
(The As-Left position recorded in this step should match the As-Found position recorded in Step 6.2.2[33].)

A. 2-HS-30-39A, AIR RETURN FAN B-B

As-Left: _____ _____

B. 2-HS-30-75A, LWR CNTMT CLR B-B

As-Left: _____ _____

C. 2-HS-30-78A, LWR CNTMT CLR D-B

As-Left: _____ _____

D. 2-HS-30-80A, CRDM CLR D-B

As-Left: _____ _____

[38] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-101, CRD VENT CLR 2B TEMP CNTL, is returned to its As-Found positions recorded in Step 4.3[6]B.

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____
1st

_____
CV

[39] **VERIFY** successful completion of this Subsection 6.2.2.
(Acc Crit) _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic

NOTE

Subsection 6.2.3 will be starting a stopping CRDM Cooler 2C-A. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.2 and Subsection 6.2.3 have been completed. _____

[2] **ENSURE** Subsections 6.1.5 and 6.1.6 have been completed. _____

[3] **RACK** Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88), [480V SHUTDOWN BOARD 2A2-A, Compartment 7A], to the TEST position. _____

[4] **VERIFY** 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

[5] **PRESS** the CRDM CLR FAN 2C-A MTR 1 BKR TEST CLOSE switch at Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-88:

- Green Light OFF _____
- Red Light ON _____
- Red Flag at Breaker Panel _____

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is in ALARM (after approximately 30 seconds). _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER C-A AIR FLOW LO, is in ALARM (Red). _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[6] **PRESS** the CRDM CLR FAN 2C-A MTR 1 BKR TEST TRIP switch at Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-88:

- Green Light ON _____
- Red Light OFF _____
- Green Flag at Breaker Panel _____

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER C-A AIR FLOW LO, is NORMAL (Green). _____

[7] **ENSURE** Transfer Switch 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2, [480V SHUTDOWN BOARD 2A2-A, Compartment 5A], is in NORMAL. _____

[8] **RACK** Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88), to the CONNECTED position. _____

[9] **PLACE** Handswitch 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT, [2-M-9], to P AUTO. _____

[10] **PLACE** Handswitch 2-HS-30-90A, CRDM CLR C-A LWR CNTMT SUCT, [2-M-9], to CLOSE. _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[11] **VERIFY** the following:

A. Cooler 2-CLR-30-88, CRDM COOLER 2C-A, [Lwr Cntmt/703 AZ 205°], is OFF. _____

B. Damper 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, [Lwr Cntmt/703 AZ 195°], is CLOSED. _____

C. 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR _____

[12] **PLACE** Handswitch 2-HS-30-88A, CRDM CLR C-A, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-88A:

- Green Light OFF _____
- Red Light ON _____
- White Light OFF _____

B. On Handswitch 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT:

- Green Light OFF _____
- Red Light ON _____

C. On 2-XX-55-6E, Train A CISP, Window 117, CRDM CLR C FAN-30-88, [2-M-6]:

- Green Light OFF _____
- Red Light ON _____

D. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, remains CLEAR. (after approximately 30 seconds) _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

E. On Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2, [480V SHUTDOWN BOARD 2A2-A, Compartment 5A]:

- Green Light OFF _____
- Red Light ON _____

F. At Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88):

- Green Light OFF _____
- Red Light ON _____

G. Locally:

- Cooler 2-CLR-30-88, CRDM COOLER 2C-A, is ON. _____
- Damper 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, is OPEN. **(Acc Crit)** _____
- Valve 2-TCV-67-93, CRD VENT CLR 2C-A OUT TEMP CNTL, [Lwr Cntmt/716 AZ 188° (N Fan Rm)], modulates OPEN. **(Acc Crit)** _____

[13] **VERIFY** that the CRDM Cooler 2C-A intake and exhaust air temperature ICS Point Qualities are GOOD (Green). **(Acc Crit)**

- T1104A, CRDM COOL UNIT C-A B-B INTAKE _____
- T1102A, CRDM COOL UNIT C-A EXHAUST _____

[14] **RECORD** CRDM Cooler 2C-A intake and exhaust air temperatures as indicated by the ICS log points:

T1104A,
CRDM COOL UNIT C-A B-B INTAKE: _____ °F

T1102A,
CRDM COOL UNIT C-A EXHAUST: _____ °F _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[15] **PLACE** Handswitch 2-HS-30-88A, CRDM CLR C-A, to STOP,
AND

VERIFY the following:

A. On Handswitch 2-HS-30-88A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On Handswitch 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

C. On 2-XX-55-6E, Train A CISP, Window 117 CRDM CLR C FAN-30-88:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. At Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88):

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

F. Locally:

- Cooler 2-CLR-30-88, CRDM COOLER 2C-A, is OFF. _____
- Damper 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-93, CRD VENT CLR 2C-A OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[16] **ENSURE** 2-XA-55-6F-149B, 480 SD BD 2A1-A/2A2-A/CA VT BD 2A1-A, is CLEAR _____

[17] **PLACE** the following Transfer Switches to AUX:

A. 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2 _____

B. 2-XS-30-89, CRDM CLR C-A SHROUD SUCTION, [2-L-11A] _____

C. 2-XS-67-93, CRDM CLR C-A ERCW OUTLET TCV, [2-L-11A] _____

[18] **ENSURE** the following Handswitches on 2-L-10 are in P AUTO:

A. 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION _____

B. 2-HS-67-93C, CRDM CLR C-A ERCW OUTLET TCV _____

[19] **VERIFY** the following:

A. On Handswitch 2-HS-30-88A, CRDM CLR C-A:

- Green Light OFF _____
- Red Light OFF _____
- White Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

B. On 2-XX-55-6E, Train A CISP, Window 117 CRDM CLR C FAN-30-88:

- Green Light OFF _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6F-149B, 480 SD BD 2A1-A/2A2-A/CA VT BD 2A1-A, is in ALARM _____
- Unit 2 Alarm Events Display Screen indicates 149-B 480 SD BD 2A1-A/2A2-A XS IN AUX, is in ALARM (Red). _____

D. On Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. On Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

F. At Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88):

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[20] **PLACE** Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-88C:

- Green Light OFF _____
- Red Light ON _____

B. On Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION:

- Green Light OFF _____
- Red Light ON _____

C. At Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88):

- Green Light OFF _____
- Red Light ON _____

D. Locally:

- Cooler 2-CLR-30-88, CRDM COOLER 2C-A, is ON. _____
- Damper 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, is OPEN **(Acc Crit)** _____
- Valve 2-TCV-67-93, CRD VENT CLR 2C-A OUT TEMP CNTL, modulates OPEN. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[21] **PLACE** Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2, to TRIP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-88C:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-89C, CRDM CLR C-A SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

C. At Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88):

- Green Light ON _____
- Red Light OFF _____

D. Locally:

- Cooler 2-CLR-30-88, CRDM COOLER 2C-A, is OFF. _____
- Damper 2-TCO-30-89, CRDM COOLER 2C-A SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-93, CRD VENT CLR 2C-A OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[22] **PLACE** Transfer Switch 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2, to NORMAL. _____

[23] **PLACE** the following Transfer Switches on 2-L-11A to NOR:

A. 2-XS-30-89, CRDM CLR C-A SHROUD SUCTION _____

B. 2-XS-67-93, CRDM CLR C-A ERCW OUTLET TCV _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[24] **PLACE** Handswitch 2-HS-30-89A, CRDM CLR C-A SHROUD SUCT, to CLOSE. _____

[25] **VERIFY** the following:

A. On Handswitch 2-HS-30-88A, CRDM CLR C-A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On 2-XX-55-6E, Train A CISP, Window 117 CRDM CLR C FAN-30-88:

- Green Light ON _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Motor Tripout Buzzer, [2-M-2], is OFF. _____
- 2-XA-55-6F-149B, 480 SD BD 2A1-A/2A2-A/CA VT BD 2A1-A, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 149-B 480 SD BD 2A1-A/2A2-A XS IN AUX, is NORMAL (Green). _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[26] **RACK** Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88), to the REMOVED position. _____

[27] **REMOVE** front cover of Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88). _____ 1st _____ CV

[28] **PLACE** Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88), Overload Trip Switch (OTS) mechanical lever (DTA plunger) to the TRIP position. _____

[29] **INSTALL** front cover of Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88). _____ 1st _____ CV

[30] **RACK** Breaker 2-BKR-30-88, CRDM CLR 2C-A (2-CLR-30-88), to the CONNECTED position. _____

[31] **VERIFY** the following:

A. On Handswitch 2-HS-30-88A, CRDM CLR C-A:

- Green Light ON _____
- Red Light OFF _____
- White Light ON _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is in ALARM. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is in ALARM (Red). _____
- Motor Tripout Buzzer is ON. _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

NOTES

1) The following step will electrically reset the Overload Trip Switch (OTS) for Breaker 2-BKR-30-88. Refer to Precaution 3.0H for further details.
2) If the following step does not reset the OTS, then the OTS may be reset manually by pressing the OTS Reset button on the front of the Breaker, and a Test Deficiency Notice shall be initiated.

[32] **RESET** the OTS by

PLACING Handswitch 2-HS-30-88A, CRDM CLR C-A to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-88A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green). _____
- Motor Tripout Buzzer is OFF. _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[33] **RECORD** the As-Found position of the following Handswitches on 2-M-9, **AND**

IF any of the following Handswitches are found in STOP PULL TO LOCK, **THEN**

PLACE that Handswitch in A AUTO.

A. 2-HS-30-38A, AIR RETURN FAN A-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

B. 2-HS-30-74A, LWR CNTMT CLR A-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

C. 2-HS-30-77A, LWR CNTMT CLR C-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

D. 2-HS-30-83A, CRDM CLR A-A

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

[34] **VERIFY** ICS Point HD2030, VENT SYS HS-38A, 88A, 74A, 77A, 83A, displays NOT P-L. _____

[35] **PLACE** Handswitch 2-HS-30-88A, CRDM CLR C-A to STOP PULL TO LOCK, **AND**

VERIFY ICS Point HD2030, VENT SYS HS-38A, 88A, 74A, 77A, 83A, displays PULLT-L. _____

[36] **PLACE** Handswitch 2-HS-30-90A, CRDM CLR C-A LWR CNTMT SUCT, to OPEN. _____

Data Package: Page ____ of ____ **Date _____**

6.2.3 CRDM Cooler 2C-A Logic (continued)

[37] **ENSURE** the following Handswitches are returned to their As-Found position recorded in Step 6.2.3[33].
(The As-Left position recorded in this step should match the As-Found position recorded in Step 6.2.3[33].)

A. 2-HS-30-38A, AIR RETURN FAN A-A

As-Left: _____ _____

B. 2-HS-30-74A, LWR CNTMT CLR A-A

As-Left: _____ _____

C. 2-HS-30-77A, LWR CNTMT CLR C-A

As-Left: _____ _____

D. 2-HS-30-83A, CRDM CLR A-A

As-Left: _____ _____

[38] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-93, CRD VENT CLR 2C TEMP CNTL, is returned to its As-Found positions recorded in Step 4.3[6]C.

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____
1st

_____
CV

[39] **VERIFY** successful completion of this Subsection 6.2.3.
(Acc Crit) _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic

NOTE

Subsection 6.2.4 will be starting a stopping CRDM Cooler 2D-B. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.2 and Subsection 6.2.4 have been completed. _____

[2] **ENSURE** Subsections 6.1.7 and 6.1.8 have been completed. _____

[3] **RACK** Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80), [480V SHUTDOWN BOARD 2B2-B, Compartment 7B], to the TEST position. _____

[4] **VERIFY** 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

[5] **PRESS** the CRDM CLR FAN 2D-B MTR 1 BKR TEST CLOSE switch at 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-80:

- Green Light OFF _____
- Red Light ON _____
- Red Flag at Breaker Panel _____

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is in ALARM (after approximately 30 seconds). _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER D-B AIR FLOW LO, is in ALARM (Red). _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[6] **PRESS** the CRDM CLR FAN 2D-B MTR 1 BKR TEST TRIP switch at 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80), **AND**

VERIFY the following:

A. At Breaker 2-BKR-30-80:

- Green Light ON _____
- Red Light OFF _____
- Green Flag at Breaker Panel _____

B. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, is CLEAR. _____

C. Unit 2 Alarm Events Display Screen indicates 102-A CRDM COOLER D-B AIR FLOW LO, is NORMAL (Green). _____

[7] **ENSURE** Transfer Switch 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2, [480V SHUTDOWN BOARD 2B2-B, Compartment 5A], is in NORMAL. _____

[8] **RACK** Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80), to the CONNECTED position. _____

[9] **PLACE** Handswitch 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT, [2-M-9], to P AUTO. _____

[10] **PLACE** Handswitch 2-HS-30-82A, CRDM CLR D-B LWR CNTMT SUCT, [2-M-9], to CLOSE. _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[11] **VERIFY** the following:

A. Cooler 2-CLR-30-80, CRDM COOLER 2D-B, [Lwr Cntmt/703 AZ 335°], is OFF. _____

B. Damper 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, [Lwr Cntmt/703 AZ 345°], is CLOSED. _____

C. 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR _____

[12] **PLACE** Handswitch 2-HS-30-80A, CRDM CLR D-B, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-80A:

- Green Light OFF _____
- Red Light ON _____
- White Light OFF _____

B. On Handswitch 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT:

- Green Light OFF _____
- Red Light ON _____

C. On 2-XX-55-6F, Train B CISP, Window 105, CRDM CLR D FAN-30-80, [2-M-6]:

- Green Light OFF _____
- Red Light ON _____

D. 2-XA-55-5C-102A, CRDM COOLER FLOW LO, remains CLEAR. (after approximately 30 seconds) _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

E. On Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2, [480V SHUTDOWN BOARD 2B2-B, Compartment 5A]:

- Green Light OFF _____
- Red Light ON _____

F. At Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80):

- Green Light OFF _____
- Red Light ON _____

G. Locally:

- Cooler 2-CLR-30-80, CRDM COOLER 2D-B, is ON. _____
- Damper 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, is OPEN. **(Acc Crit)** _____
- Valve 2-TCV-67-109, CRD VENT CLR 2D-B OUT TEMP CNTL, [Lwr Cntmt/716 AZ 352° (S Fan Rm)], modulates OPEN. **(Acc Crit)** _____

[13] **VERIFY** that the CRDM Cooler 2D-B intake and exhaust air temperature ICS Point Qualities are GOOD (Green). **(Acc Crit)**

- T1105A, CRDM COOL UNIT A-A D-B INTAKE _____
- T1103A, CRDM COOL UNIT D-B EXHAUST _____

[14] **RECORD** CRDM Cooler 2D-B intake and exhaust air temperatures as indicated by the ICS log points:

T1105A,
CRDM COOL UNIT A-A D-B INTAKE: _____ °F

T1103A,
CRDM COOL UNIT D-B EXHAUST: _____ °F _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[15] **PLACE** Handswitch 2-HS-30-80A, CRDM CLR D-B, to STOP,
AND

VERIFY the following:

A. On Handswitch 2-HS-30-80A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On Handswitch 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT:

- Green Light ON _____
- Red Light OFF _____

C. On 2-XX-55-6F, Train B CISP, Window 105 CRDM CLR D FAN-30-80:

- Green Light ON _____
- Red Light OFF _____

D. On Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. At Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80):

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

F. Locally:

- Cooler 2-CLR-30-80, CRDM COOLER 2D-B, is OFF. _____
- Damper 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-109, CRD VENT CLR 2D-B OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[16] **ENSURE** 2-XA-55-6F-150B, 480 SD BD 2B1-B/2B2-B/CA VT BD 2B1-B, is CLEAR _____

[17] **PLACE** the following Transfer Switches to AUX:

A. 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2 _____

B. 2-XS-30-81, CRDM CLR D-B SHROUD SUCTION, [2-L-11B] _____

C. 2-XS-67-109, CRDM CLR D-B ERCW OUTLET TCV, [2-L-11B] _____

[18] **ENSURE** the following Handswitches on 2-L-10 are in P AUTO:

A. 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION _____

B. 2-HS-67-109C, CRDM CLR D-B ERCW OUTLET TCV _____

[19] **VERIFY** the following:

A. On Handswitch 2-HS-30-80A, CRDM CLR D-B:

- Green Light OFF _____
- Red Light OFF _____
- White Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

B. On 2-XX-55-6F, Train B CISP, Window 105 CRDM CLR D FAN-30-80:

- Green Light OFF _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6F-150B, 480 SD BD 2B1-B/2B2-B/CA VT BD 2B1-B, is in ALARM _____
- Unit 2 Alarm Events Display Screen indicates 150-B 480 SD BD 2B1-B/2B2-B XS IN AUX, is in ALARM (Red). _____

D. On Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

E. On Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

F. At Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80):

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[20] **PLACE** Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2, to CLOSE, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-80C:

- Green Light OFF _____
- Red Light ON _____

B. On Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION:

- Green Light OFF _____
- Red Light ON _____

C. At Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80):

- Green Light OFF _____
- Red Light ON _____

D. Locally:

- Cooler 2-CLR-30-80, CRDM COOLER 2D-B, is ON. _____
- Damper 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, is OPEN **(Acc Crit)** _____
- Valve 2-TCV-67-109, CRD VENT CLR 2D-B OUT TEMP CNTL, modulates OPEN. **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[21] **PLACE** Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2, to TRIP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-80C:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-81C, CRDM CLR D-B SHROUD SUCTION:

- Green Light ON _____
- Red Light OFF _____

C. At Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80):

- Green Light ON _____
- Red Light OFF _____

D. Locally:

- Cooler 2-CLR-30-80, CRDM COOLER 2D-B, is OFF. _____
- Damper 2-TCO-30-81, CRDM COOLER 2D-B SHROUD SUCTION, is CLOSED. **(Acc Crit)** _____
- Valve 2-TCV-67-109, CRD VENT CLR 2D-B OUT TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[22] **PLACE** Transfer Switch 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2, to NORMAL. _____

[23] **PLACE** the following Transfer Switches on 2-L-11B to NOR:

A. 2-XS-30-81, CRDM CLR D-B SHROUD SUCTION _____

B. 2-XS-67-109, CRDM CLR D-B ERCW OUTLET TCV _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[24] **PLACE** Handswitch 2-HS-30-81A, CRDM CLR D-B SHROUD SUCT, to CLOSE. _____

[25] **VERIFY** the following:

A. On Handswitch 2-HS-30-80A, CRDM CLR D-B:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. On 2-XX-55-6F, Train B CISP, Window 105 CRDM CLR D FAN-30-80:

- Green Light ON _____
- Red Light OFF _____

C. Annunciation & Alarms:

- 2-XA-55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Motor Tripout Buzzer, [2-M-2], is OFF. _____
- 2-XA-55-6F-150B, 480 SD BD 2B1-B/2B2-B/CA VT BD 2B1-B, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 150-B 480 SD BD 2B1-B/2B2-B XS IN AUX, is NORMAL (Green). _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[26] **RACK** Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80), to the REMOVED position. _____

[27] **REMOVE** front cover Plate of Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80). _____ 1st _____ CV

[28] **PLACE** Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80), Overload Trip Switch (OTS) mechanical lever (DTA plunger) to the TRIP position. _____

[29] **INSTALL** front cover Plate of Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80). _____ 1st _____ CV

[30] **RACK** Breaker 2-BKR-30-80, CRDM CLR 2D-B (2-CLR-30-80), to the CONNECTED position. _____

[31] **VERIFY** the following:

A. On Handswitch 2-HS-30-80A, CRDM CLR D-B:

- Green Light ON _____
- Red Light OFF _____
- White Light ON _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is in ALARM. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is in ALARM (Red). _____
- Motor Tripout Buzzer is ON. _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

NOTES

1) The following step will electrically reset the Overload Trip Switch (OTS) for Breaker 2-BKR-30-80. Refer to Precaution 3.0H for further details.
2) If the following step does not reset the OTS, then the OTS may be reset manually by pressing the OTS Reset button on the front of the Breaker, and a Test Deficiency Notice shall be initiated.

[32] **RESET** the OTS by

PLACING Handswitch 2-HS-30-80A, CRDM CLR D-B to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-80A:

- Green Light ON _____
- Red Light OFF _____
- White Light OFF _____

B. Annunciation & Alarms:

- 2-XA 55-6E-138E, PANEL M-9 MOTOR TRIPOUT, is CLEAR. _____
- Unit 2 Alarm Events Display Screen indicates 138-E PANEL M-9 MOTOR TRIPOUT, is NORMAL (Green). _____
- Motor Tripout Buzzer is OFF. _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[33] **RECORD** the As-Found position of the following Handswitches on 2-M-9, **AND**

IF any of the following Handswitches are found in STOP PULL TO LOCK, **THEN**

PLACE that Handswitch in A AUTO.

A. 2-HS-30-39A, AIR RETURN FAN B-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

B. 2-HS-30-75A, LWR CNTMT CLR B-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

C. 2-HS-30-78A, LWR CNTMT CLR D-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

D. 2-HS-30-92A, CRDM CLR B-B

As-Found: _____

Place in A AUTO? ☐ Yes ☐ No _____

[34] **VERIFY** ICS Point HD2064, VENT SYS HS-39A, 78A, 75A, 92A, 80A, displays NOT P-L. _____

[35] **PLACE** Handswitch 2-HS-30-80A, CRDM CLR D-B to STOP PULL TO LOCK, **AND**

VERIFY ICS Point HD2064, VENT SYS HS-39A, 78A, 75A, 92A, 80A, displays PULLT-L. _____

[36] **PLACE** Handswitch 2-HS-30-82A, CRDM CLR D-B LWR CNTMT SUCT, to OPEN. _____

Data Package: Page ____ of ____ **Date _____**

6.2.4 CRDM Cooler 2D-B Logic (continued)

[37] **ENSURE** the following Handswitches are returned to their As-Found position recorded in Step 6.2.4[33].
(The As-Left position recorded in this step should match the As-Found position recorded in Step 6.2.4[33].)

A. 2-HS-30-39A, AIR RETURN FAN B-B

As-Left: _____ _____

B. 2-HS-30-75A, LWR CNTMT CLR B-B

As-Left: _____ _____

C. 2-HS-30-78A, LWR CNTMT CLR D-B

As-Left: _____ _____

D. 2-HS-30-92A, CRDM CLR B-B

As-Left: _____ _____

[38] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-109, CRD VENT CLR 2D TEMP CNTL, is returned to its As-Found positions recorded in Step 4.3[6]D.

Auto/Manual Status: _____

Indicated Controller Setpoint: _____

Indicated Controller Output: _____

_____
1st

_____
CV

[39] **VERIFY** successful completion of this Subsection 6.2.4.
(Acc Crit) _____

Data Package: Page ____ of ____ **Date _____**

6.3 CRDM Coolers Response to Phase B Containment Isolation Signal

NOTE

Subsections 6.3.1 and 6.3.2 may be performed in any order, provided their applicable predecessor Subsections are completed. Unless otherwise noted, the steps within each Subsection shall be performed in the order written. The diagram at the beginning of Section 6.0 may be used as a placekeeping tool throughout the performance of this Section.

6.3.1 Train A CRDM Coolers (2A-A and 2C-A)

NOTE

Subsection 6.3.1 will be starting a stopping CRDM Cooler 2A-A and 2C-A. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.3 have been completed. _____

[2] **ENSURE** Subsections 6.2.1 and 6.2.3 have been completed. _____

[3] **PLACE** Handswitch 2-HS-30-83A, CRDM CLR A-A, to START, **AND**

VERIFY on Handswitch 2-HS-30-83A:

- Green Light OFF _____
- Red Light ON _____

[4] **PLACE** Handswitch 2-HS-30-88A, CRDM CLR C-A, to START, **AND**

VERIFY on Handswitch 2-HS-30-88A:

- Green Light OFF _____
- Red Light ON _____

Data Package: Page ____ of ____ **Date _____**

6.3.1 Train A CRDM Coolers (2A-A and 2C-A) (continued)

[5] **ENSURE** the following Lower Compartment Coolers are OFF:

- 2-CCU-30-74, CNTMT LOWER COMPARTMENT COOLER 2A-A _____
- 2-CCU-30-77, CNTMT LOWER COMPARTMENT COOLER 2C-A _____

NOTE

The following steps will simulate a Train A Phase B Containment Isolation Signal and Phase B signal reset by closing and opening a test switch (TS-1, installed in Step 4.3[13.1]) in SSPS Train A Output Cabinet 2-R-48.

[6] **PLACE** Test Switch TS-1 in the CLOSED (ON) position. _____

[7] **VERIFY** the following:

A. On Handswitch 2-HS-30-83A, CRDM CLR A-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

B. On Handswitch 2-HS-30-88A, CRDM CLR C-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[8] **PLACE** Test Switch TS-1 in the OPEN (OFF) position. _____

[9] **VERIFY** the following:

A. On Handswitch 2-HS-30-83A, CRDM CLR A-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

B. On Handswitch 2-HS-30-88A, CRDM CLR C-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.3.1 Train A CRDM Coolers (2A-A and 2C-A) (continued)

[10] **PLACE** the following Transfer Switches in AUX:

A. 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2 _____

B. 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2 _____

[11] **PLACE** Test Switch TS-1 in the CLOSED (ON) position. _____

[12] **VERIFY** the following:

A. On Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

[13] **PLACE** Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2, to CLOSE, **AND**

VERIFY the following on Handswitch 2-HS-30-83C:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[14] **PLACE** Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2, to TRIP, **AND**

VERIFY the following on Handswitch 2-HS-30-83C:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.3.1 Train A CRDM Coolers (2A-A and 2C-A) (continued)

[15] **PLACE** Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2, to CLOSE, **AND**

VERIFY the following on Handswitch 2-HS-30-88C:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[16] **PLACE** Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2, to TRIP, **AND**

VERIFY on Handswitch 2-HS-30-88C:

- Green Light ON _____
- Red Light OFF _____

[17] **PLACE** Test Switch TS-1 in the OPEN (OFF) position. _____

[18] **VERIFY** the following:

A. On Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.3.1 Train A CRDM Coolers (2A-A and 2C-A) (continued)

[19] **PLACE** the following Transfer Switches in NORMAL:

A. 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2 _____

B. 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2 _____

[20] **PLACE** the following Handswitches in STOP PULL TO LOCK:

A. 2-HS-30-83A, CRDM CLR A-A _____

B. 2-HS-30-88A, CRDM CLR C-A _____

Data Package: Page ____ of ____ **Date _____**

6.3.2 Train B CRDM Coolers (2B-B and 2D-B)

NOTE

Subsection 6.3.2 will be starting a stopping CRDM Cooler 2B-B and 2D-B. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.3 have been completed. _____

[2] **ENSURE** Subsections 6.2.2 and 6.2.4 have been completed. _____

[3] **PLACE** Handswitch 2-HS-30-92A, CRDM CLR B-B, to START, **AND**

VERIFY on Handswitch 2-HS-30-92A:

- Green Light OFF _____
- Red Light ON _____

[4] **PLACE** Handswitch 2-HS-30-80A, CRDM CLR D-B, to START, **AND**

VERIFY on Handswitch 2-HS-30-80A:

- Green Light OFF _____
- Red Light ON _____

[5] **ENSURE** the following Lower Compartment Coolers are OFF:

- 2-CCU-30-75, CNTMT LOWER COMPARTMENT COOLER 2B-B _____
- 2-CCU-30-78, CNTMT LOWER COMPARTMENT COOLER 2D-B _____

Data Package: Page ____ of ____ **Date _____**

6.3.2 Train B CRDM Coolers (2B-B and 2D-B) (continued)

NOTE

The following steps will simulate a Train B Phase B Containment Isolation Signal and Phase B signal reset by closing and opening a test switch (TS-2, installed in Step 4.3[13.2]) in SSPS Train B Output Cabinet 2-R-51.

[6] **PLACE** Test Switch TS-2 in the CLOSED (ON) position. _____

[7] **VERIFY** the following:

A. On Handswitch 2-HS-30-92A, CRDM CLR B-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

B. On Handswitch 2-HS-30-80A, CRDM CLR D-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[8] **PLACE** Test Switch TS-2 in the OPEN (OFF) position. _____

[9] **VERIFY** the following:

A. On Handswitch 2-HS-30-92A, CRDM CLR B-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

B. On Handswitch 2-HS-30-80A, CRDM CLR D-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[10] **PLACE** the following Transfer Switches in AUX:

A. 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2 _____

B. 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2 _____

Data Package: Page ____ of ____ **Date _____**

6.3.2 Train B CRDM Coolers (2B-B and 2D-B) (continued)

[11] **PLACE** Test Switch TS-2 in the CLOSED (ON) position. _____

[12] **VERIFY** the following:

A. On Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

[13] **PLACE** Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2, to CLOSE, **AND**

VERIFY the following on Handswitch 2-HS-30-92C:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[14] **PLACE** Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2, to TRIP, **AND**

VERIFY the following on Handswitch 2-HS-30-92C:

- Green Light ON _____
- Red Light OFF _____

[15] **PLACE** Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2, to CLOSE, **AND**

VERIFY the following on Handswitch 2-HS-30-80C:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.3.2 Train B CRDM Coolers (2B-B and 2D-B) (continued)

[16] **PLACE** Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2, to TRIP, **AND**

VERIFY on Handswitch 2-HS-30-80C:

- Green Light ON _____
- Red Light OFF _____

[17] **PLACE** Test Switch TS-2 in the OPEN (OFF) position. _____

[18] **VERIFY** the following:

A. On Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

B. On Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2:

- Green Light ON _____
- Red Light OFF _____

[19] **PLACE** the following Transfer Switches in NORMAL:

A. 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2 _____

B. 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2 _____

[20] **PLACE** the following Handswitches in STOP PULL TO LOCK:

A. 2-HS-30-92A, CRDM CLR B-B _____

B. 2-HS-30-80A, CRDM CLR D-B _____

Data Package: Page ____ of ____ **Date _____**

6.4 CRDM Coolers Response To Bus Undervoltage

NOTE

Subsections 6.4.1 through 6.4.4 may be performed in any order, provided their applicable predecessor Subsection is completed. Unless otherwise noted, the steps within each Subsection shall be performed in the order written. The diagram at the beginning of Section 6.0 may be used as a placekeeping tool throughout the performance of this Section.

6.4.1 CRDM Cooler 2A-A

NOTE

Subsection 6.4.1 will be starting a stopping CRDM Cooler 2A-A. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.4 have been completed. _____

[2] **ENSURE** Subsection 6.2.1 has been completed _____

[3] **ENSURE** Handswitch 2-HS-30-74A, LWR CNTMT CLR A-A, is in STOP PULL TO LOCK. _____

[4] **PLACE** Handswitch 2-HS-30-83A, CRDM CLR A-A, to START, **AND**

VERIFY on Handswitch 2-HS-30-83A:

- Green Light OFF _____
- Red Light ON _____

Data Package: Page ____ of ____ **Date _____**

6.4.1 CRDM Cooler 2A-A (continued)

NOTE

The following step will simulate a Loss of Offsite Power.

[5] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire A17BTP) and Point 8 (wire A17BT1) of Relay 2A1X1, [480V SHUTDOWN BOARD 2A1-A, Compartment 6A]. (Drawing 618F938 AC)

_____ 1st

_____ CV

[6] **VERIFY** on Handswitch 2-HS-30-83A, CRDM CLR A-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

NOTE

The following step will simulate a restoration of bus voltage.

[7] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2A1X1. (Drawing 618F938 AC)

_____ 1st

_____ CV

[8] **VERIFY** that CRDM Cooler 2A-A remains OFF after approximately 1 minute, as indicated on Handswitch 2-HS-30-83A, CRDM CLR A-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[9] **PLACE** Transfer Switch 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2, in AUX. _____

Data Package: Page ____ of ____ **Date _____**

6.4.1 CRDM Cooler 2A-A (continued)

[10] **PLACE** Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2, to CLOSE, **AND**

VERIFY on Handswitch 2-HS-30-83C:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following step will simulate a Loss of Offsite Power.

[11] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire A17BTP) and Point 8 (wire A17BT1) of Relay 2A1X1. (Drawing 618F938 AC)

_____ 1st

_____ CV

[12] **VERIFY** on Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

NOTE

The following step will simulate a restoration of bus voltage.

[13] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2A1X1. (Drawing 618F938 AC)

_____ 1st

_____ CV

Data Package: Page ____ of ____ **Date _____**

6.4.1 CRDM Cooler 2A-A (continued)

[14] **VERIFY** that CRDM Cooler 2A-A STARTS after approximately 1 minute, as indicated on Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[15] **PLACE** Transfer Switch 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2, in NORMAL. _____

[16] **PLACE** Handswitch 2-HS-30-83, CRDM CLR A-A, in STOP PULL TO LOCK. _____

Data Package: Page ____ of ____ **Date _____**

6.4.2 CRDM Cooler 2B-B

NOTE

Subsection 6.4.2 will be starting a stopping CRDM Cooler 2B-B. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.4 have been completed. _____

[2] **ENSURE** Subsection 6.2.2 has been completed _____

[3] **ENSURE** Handswitch 2-HS-30-75A, LWR CNTMT CLR B-B, is in STOP PULL TO LOCK. _____

[4] **PLACE** Handswitch 2-HS-30-92A, CRDM CLR B-B, to START, **AND**

VERIFY on Handswitch 2-HS-30-92A:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following step will simulate a Loss of Offsite Power.

[5] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire B17CTP) and Point 8 (wire B17CT1) of Relay 2B1X1, [480V SHUTDOWN BOARD 2B1-B, Compartment 6A]. (Drawing 618F941 AC)

_____ 1st

_____ CV

[6] **VERIFY** on Handswitch 2-HS-30-92A, CRDM CLR B-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.4.2 CRDM Cooler 2B-B (continued)

NOTE

The following step will simulate a restoration of bus voltage.

[7] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2B1X1. (Drawing 618F941 AC)

_____ 1st

_____ CV

[8] **VERIFY** that CRDM Cooler 2B-B remains OFF after approximately 1 minute, as indicated on Handswitch 2-HS-30-92A, CRDM CLR B-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[9] **PLACE** Transfer Switch 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2, in AUX. _____

[10] **PLACE** Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2, to CLOSE, **AND**

VERIFY on Handswitch 2-HS-30-92C:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following step will simulate a Loss of Offsite Power.

[11] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire B17CTP) and Point 8 (wire B17CT1) of Relay 2B1X1. (Drawing 618F941 AC)

_____ 1st

_____ CV

Data Package: Page ____ of ____ **Date _____**

6.4.2 CRDM Cooler 2B-B (continued)

[12] **VERIFY** on Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

NOTE

The following step will simulate a restoration of bus voltage.

[13] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2B1X1. (Drawing 618F941 AC)

_____ 1st

_____ CV

[14] **VERIFY** that CRDM Cooler 2B-B STARTS after approximately 1 minute, as indicated on Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[15] **PLACE** Transfer Switch 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2, in NORMAL. _____

[16] **PLACE** Handswitch 2-HS-30-92, CRDM CLR B-B, in STOP PULL TO LOCK. _____

Data Package: Page ____ of ____ **Date _____**

6.4.3 CRDM Cooler 2C-A

NOTE

Subsection 6.4.3 will be starting a stopping CRDM Cooler 2C-A. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.4 have been completed. _____

[2] **ENSURE** Subsection 6.2.3 has been completed _____

[3] **ENSURE** Handswitch 2-HS-30-77A, LWR CNTMT CLR C-A, is in STOP PULL TO LOCK. _____

[4] **PLACE** Handswitch 2-HS-30-88A, CRDM CLR C-A, to START, **AND**

VERIFY on Handswitch 2-HS-30-88A:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following step will simulate a Loss of Offsite Power.

[5] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire A27ATP) and Point 8 (wire A27AT1) of Relay 2A2X1, [480V SHUTDOWN BOARD 2A2-A, Compartment 6A]. (Drawing 6947D67 AC)

_____ 1st

_____ CV

[6] **VERIFY** on Handswitch 2-HS-30-88A, CRDM CLR C-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.4.3 CRDM Cooler 2C-A (continued)

NOTE

The following step will simulate a restoration of bus voltage.

[7] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2A2X1. (Drawing 6947D67 AC)

_____ 1st

_____ CV

[8] **VERIFY** that CRDM Cooler 2C-A remains OFF after approximately 1 minute, as indicated on Handswitch 2-HS-30-88A, CRDM CLR C-A:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[9] **PLACE** Transfer Switch 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2, in AUX. _____

[10] **PLACE** Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2, to CLOSE, **AND**

VERIFY on Handswitch 2-HS-30-88C:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following step will simulate a Loss of Offsite Power.

[11] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire A27ATP) and Point 8 (wire A27AT1) of Relay 2A2X1. (Drawing 6947D67 AC)

_____ 1st

_____ CV

Data Package: Page ____ of ____ **Date _____**

6.4.3 CRDM Cooler 2C-A (continued)

[12] **VERIFY** on Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

NOTE

The following step will simulate a restoration of bus voltage.

[13] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2A2X1. (Drawing 6947D67 AC)

_____ 1st

_____ CV

[14] **VERIFY** that CRDM Cooler 2C-A STARTS after approximately 1 minute, as indicated on Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[15] **PLACE** Transfer Switch 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2, in NORMAL. _____

[16] **PLACE** Handswitch 2-HS-30-88, CRDM CLR C-A, in STOP PULL TO LOCK. _____

Data Package: Page ____ of ____ **Date _____**

6.4.4 CRDM Cooler 2D-B

NOTE

Subsection 6.4.4 will be starting a stopping CRDM Cooler 2D-B. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.4 have been completed. _____

[2] **ENSURE** Subsection 6.2.4 has been completed _____

[3] **ENSURE** Handswitch 2-HS-30-78A, LWR CNTMT CLR D-B, is in STOP PULL TO LOCK. _____

[4] **PLACE** Handswitch 2-HS-30-80A, CRDM CLR D-B, to START, **AND**

VERIFY on Handswitch 2-HS-30-80A:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following step will simulate a Loss of Offsite Power.

[5] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire B27BTP) and Point 8 (wire B27BT1) of Relay 2B2X1, [480V SHUTDOWN BOARD 2B2-B, Compartment 6A]. (Drawing 6947D85 AC)

_____ 1st

_____ CV

[6] **VERIFY** on Handswitch 2-HS-30-80A, CRDM CLR D-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

Data Package: Page ____ of ____ **Date _____**

6.4.4 CRDM Cooler 2D-B (continued)

NOTE

The following step will simulate a restoration of bus voltage.

[7] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2B2X1. (Drawing 6947D85 AC)

_____ 1st

_____ CV

[8] **VERIFY** that CRDM Cooler 2D-B remains OFF after approximately 1 minute, as indicated on Handswitch 2-HS-30-80A, CRDM CLR D-B:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[9] **PLACE** Transfer Switch 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2, in AUX. _____

[10] **PLACE** Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2, to CLOSE, **AND**

VERIFY on Handswitch 2-HS-30-80C:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following step will simulate a Loss of Offsite Power.

[11] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 7 (wire B27BTP) and Point 8 (wire B27BT1) of Relay 2B2X1. (Drawing 6947D85 AC)

_____ 1st

_____ CV

Data Package: Page ____ of ____ **Date _____**

6.4.4 CRDM Cooler 2D-B (continued)

[12] **VERIFY** on Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

NOTE

The following step will simulate a restoration of bus voltage.

[13] **MOMENTARILY PLACE** a handheld jumper between Terminal Point 3 (wire DCE4) and Point 4 (wire DCE5) of Relay 2B2X1. (Drawing 6947D85 AC)

_____ 1st

_____ CV

[14] **VERIFY** that CRDM Cooler 2D-B STARTS after approximately 1 minute, as indicated on Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[15] **PLACE** Transfer Switch 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2, in NORMAL. _____

[16] **PLACE** Handswitch 2-HS-30-80, CRDM CLR D-B, in STOP PULL TO LOCK. _____

Data Package: Page ____ of ____ **Date _____**

6.5 CRDM Coolers Auto-Start on Low Air Flow

NOTE

Subsections 6.5.1 and 6.5.2 may be performed in any order, provided their applicable predecessor Subsections are completed. Unless otherwise noted, the steps within each Subsection shall be performed in the order written. The diagram at the beginning of Section 6.0 may be used as a placekeeping tool throughout the performance of this Section.

6.5.1 CRDM Coolers 2A-A and 2D-B

NOTE

Subsection 6.5.1 will be starting a stopping CRDM Cooler 2A-A and 2D-B. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.5 have been completed. _____

[2] **ENSURE** Subsections 6.3.1, 6.3.2, 6.4.1, and 6.4.4 have been completed. _____

Data Package: Page ____ of ____ **Date _____**

6.5.1 CRDM Coolers 2A-A and 2D-B (continued)

NOTE

The following step will enable the CRDM Cooler A-A and D-B Auto-start on Low Flow function.

[3] **LAND** the following wires that were lifted in Steps 4.3[14]A and 4.3[14]D:

A. Wire A17BC3: Point 1 on Terminal Block TA in 2-JB-293-494 [Lwr Cntmt/703 AZ 50°] (Drawing 45W2748-1)

_____ 1st

_____ CV

B. Wire B27BC3: Point 2 on Terminal Block TA in 2-JB-293-521 [Lwr Cntmt/703 AZ 315°] (Drawing 45W2748-4)

_____ 1st

_____ CV

[4] **PLACE** Handswitch 2-HS-30-80A, CRDM CLR D-B, to START, **AND**

VERIFY on Handswitch 2-HS-30-80A:

- Green Light OFF _____
- Red Light ON _____

[5] **PLACE** Handswitch 2-HS-30-83A, CRDM CLR A-A, to A AUTO, **AND**

VERIFY on Handswitch 2-HS-30-83A:

- Green Light ON _____
- Red Light OFF _____

Data Package: Page ____ of ____ **Date _____**

6.5.1 CRDM Coolers 2A-A and 2D-B (continued)

[6] **PLACE** the following Transfer Switches in AUX:

A. 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2 _____

B. 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2 _____

[7] **PLACE** and **HOLD** Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2, to TRIP, **AND**

VERIFY on Handswitch 2-HS-30-80C:

- Green Light ON _____
- Red Light OFF _____

[8] **VERIFY** that CRDM Cooler 2A-A STARTS as indicated on Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[9] **RELEASE** Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2. _____

[10] **PLACE** and **HOLD** Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2, to TRIP, **AND**

VERIFY on Handswitch 2-HS-30-83C:

- Green Light ON _____
- Red Light OFF _____

[11] **VERIFY** that CRDM Cooler 2D-B STARTS as indicated on Handswitch 2-HS-30-80C, CRDM CLR 2D-B FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[12] **RELEASE** Handswitch 2-HS-30-83C, CRDM CLR 2A-A FAN 1 & 2. _____

Data Package: Page ____ of ____ **Date _____**

6.5.1 CRDM Coolers 2A-A and 2D-B (continued)

[13] **PLACE** the following Transfer Switches in NORMAL:

A. 2-XS-30-83, CRDM CLR 2A-A FAN 1 & 2 _____

B. 2-XS-30-80, CRDM CLR 2D-B FAN 1 & 2 _____

[14] **PLACE** the following Handswitches in STOP PULL TO LOCK:

A. 2-HS-30-83A, CRDM CLR A-A _____

B. 2-HS-30-80A, CRDM CLR D-B _____

Data Package: Page ____ of ____ **Date _____**

6.5.2 CRDM Coolers 2B-B and 2C-A

NOTE

Subsection 6.5.2 will be starting a stopping CRDM Cooler 2B-B and 2C-A. Ensure personnel and loose equipment are clear of fan discharge and that personnel in the area are cognizant of expected fan start prior to starting a CRDM Cooler.

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.5 have been completed. _____

[2] **ENSURE** Subsections 6.3.1, 6.3.2, 6.4.2, and 6.4.3 have been completed. _____

NOTE

The following step will enable the CRDM Cooler B-B and C-A Auto-start on Low Flow function.

[3] **LAND** the following wires that were lifted in Steps 4.3[14]B and 4.3[14]C:

A. Wire B17CC3: Point 2 on Terminal Block TA in 2-JB-293-517 [Lwr Cntmt/703 AZ 135°] (Drawing 45W2748-3)

_____ 1st

_____ CV

B. Wire A27AC3: Point 2 on Terminal Block TA in 2-JB-293-519 [Lwr Cntmt/703 AZ 221°] (Drawing 45W2748-2)

_____ 1st

_____ CV

[4] **PLACE** Handswitch 2-HS-30-88A, CRDM CLR C-A, to START, **AND**

VERIFY on Handswitch 2-HS-30-88A:

- Green Light OFF _____
- Red Light ON _____

Data Package: Page ____ of ____ **Date _____**

6.5.2 CRDM Coolers 2B-B and 2C-A (continued)

[5] **PLACE** Handswitch 2-HS-30-92A, CRDM CLR B-B, to A AUTO, **AND**

VERIFY on Handswitch 2-HS-30-92A:

- Green Light ON _____
- Red Light OFF _____

[6] **PLACE** the following Transfer Switches in AUX:

A. 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2 _____

B. 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2 _____

[7] **PLACE** and **HOLD** Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2, to TRIP, **AND**

VERIFY on Handswitch 2-HS-30-88C:

- Green Light ON _____
- Red Light OFF _____

[8] **VERIFY** that CRDM Cooler 2B-B STARTS as indicated on Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[9] **RELEASE** Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2. _____

Data Package: Page ____ of ____ **Date _____**

6.5.2 CRDM Coolers 2B-B and 2C-A (continued)

[10] **PLACE** and **HOLD** Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2, to TRIP, **AND**

VERIFY on Handswitch 2-HS-30-92C:

- Green Light ON _____
- Red Light OFF _____

[11] **VERIFY** that CRDM Cooler 2C-A STARTS as indicated on Handswitch 2-HS-30-88C, CRDM CLR 2C-A FAN 1 & 2:

- Green Light OFF **(Acc Crit)** _____
- Red Light ON **(Acc Crit)** _____

[12] **RELEASE** Handswitch 2-HS-30-92C, CRDM CLR 2B-B FAN 1 & 2. _____

[13] **PLACE** the following Transfer Switches in NORMAL:

A. 2-XS-30-92, CRDM CLR 2B-B FAN 1 & 2 _____

B. 2-XS-30-88, CRDM CLR 2C-A FAN 1 & 2 _____

[14] **PLACE** the following Handswitches in STOP PULL TO LOCK:

A. 2-HS-30-92A, CRDM CLR B-B _____

B. 2-HS-30-88A, CRDM CLR C-A _____

Data Package: Page ____ of ____ **Date _____**

6.6 CRDM Coolers Air Flow

[1] **ENSURE** all prerequisites listed in Section 4.0 for Section 6.6 have been completed _____

[2] **ENSURE** air flow measurements for the CRDM Coolers have been performed using GTM-05, HVAC Air Balance:

A. 2-CLR-30-83, CRDM COOLER 2A-A _____

B. 2-CLR-30-92, CRDM COOLER 2B-B _____

C. 2-CLR-30-88, CRDM COOLER 2C-A _____

D. 2-CLR-30-80, CRDM COOLER 2D-B _____

[3] **ENSURE** completed GTM-05 data sheets are attached to this instruction. _____

Data Package: Page ____ of ____ **Date _____**

6.6 CRDM Coolers Air Flow (continued)

NOTE

The remaining steps in Section 6.6 record and verify data from the completed GTM-05, HVAC Air Balance Package for system 30I and may be completed in any order unless otherwise specified.

[4] **RECORD** the air flow measurement for Cooler 2-CLR-30-83, CRDM COOLER 2A-A, aligned to Shroud Suction below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM
Acc Crit: 21,500 CFM minimum

_____

[5] **RECORD** the air flow measurement for Cooler 2-CLR-30-92, CRDM COOLER 2B-B, aligned to Shroud Suction below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM
Acc Crit: 21,500 CFM minimum

_____

[6] **RECORD** the air flow measurement for Cooler 2-CLR-30-88, CRDM COOLER 2C-A, aligned to Shroud Suction below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM
Acc Crit: 21,500 CFM minimum

_____

[7] **RECORD** the air flow measurement for Cooler 2-CLR-30-80, CRDM COOLER 2D-B, aligned to Shroud Suction below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM
Acc Crit: 21,500 CFM minimum

_____

Data Package: Page ____ of ____ **Date _____**

7.0 POST PERFORMANCE ACTIVITY

[1] **ENSURE** Sections 6.1 through 6.6 have been completed. _____

[2] **REMOVE** the switched jumpers installed in step 4.3[13] from the following locations:

[2.1] Labeled TS-1:
In SSPS Train-A Output Cabinet 2-R-48, at TB615, between Pt. 11 (Wire 2340VL) and Pt. 12 (Wire CNA1). (Drawing 45N2676-4)

_____ 1st

_____ CV

[2.2] Labeled TS-2:
In SSPS Train-B Output Cabinet 2-R-51, at TB615, between Pt. 11 (Wire 2435VL) and Pt. 12 (Wire CNB1). (Drawing 45N2677-4)

_____ 1st

_____ CV

[3] **ENSURE** any temporary conditions recorded in Appendix B, Temporary Condition Log, are addressed for necessary restoration as applicable (N/A if no conditions recorded). _____

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

[5] **NOTIFY** the Unit 1 US/SRO/SM of the test completion and system alignment. _____

8.0 RECORDS

A. QA Records

Completed Test Package.

B. Non-QA Records

None

Appendix A
(Page 1 of 1)

TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

Data Package: Page ____ of ____ **Date _____**

NOTES

1) Additional copies of this table may be made as necessary.
2) Initial and date indicates review has been completed for impact.

PROCEDURE/ INSTRUCTION	REVISION/CHANGES	IMPACT Yes/No	INITIAL AND DATE. (N/A for no change)
GTM-05			
FSAR Section 9.2.1 Section 9.4.7 Table 14.2-1, Sh 4 & 5 Table 14.2-1, Sh 38 & 39			
WBN2-30RB-4002			
G-37			
2-TSD-30I-1			
2-PTI-030L-01			
2-PTI-067-02-A			
2-PTI-067-02-B			
2-PTI-067-03			
MI-57.002			
SSD-2-LPT-67-85			
SSD-2-LPT-67-101			
SSD-2-LPT-67-93			
SSD-2-LPT-67-109			
VM-F180-3066			

Appendix B
(Page 1 of 1)

TEMPORARY CONDITION LOG

Data Package: Page ____ of ____ **Date ________**

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

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

Appendix C
(Page 1 of 2)

PERMANENT PLANT INSTRUMENTATION LOG

Data Package: Page ____ of ____ **Date _____**

INSTRUMENT OR INSTRUMENT LOOP #	CAL DUE DATE	FILLED AND VENTED[1]	PLACED IN SERVICE[1]	USED FOR QUANTITATIVE ACC CRIT		POST-TEST CAL DATE[2]	POST-TEST CALIBRATION ACCEPTABLE[2] INITIAL/DATE
		INIT/DATE	INIT/DATE	YES	NO		
2-TE-30-211A		N/A			NO	N/A	N/A
2-TE-30-211B		N/A			NO	N/A	N/A
2-TE-30-211C		N/A			NO	N/A	N/A
2-TE-30-211D		N/A			NO	N/A	N/A
2-TE-30-211E		N/A			NO	N/A	N/A
2-TE-30-211F		N/A			NO	N/A	N/A
2-FS-30-80A/B		N/A			NO	N/A	N/A
2-FS-30-83A/B		N/A			NO	N/A	N/A
2-FS-30-88A/B		N/A			NO	N/A	N/A
2-FS-30-92A/B		N/A			NO	N/A	N/A

Appendix C
(Page 2 of 2)

PERMANENT PLANT INSTRUMENTATION LOG

Data Package: Page ____ of ____ **Date _____**

INSTRUMENT OR INSTRUMENT LOOP #	CAL DUE DATE	FILLED AND VENTED[1]	PLACED IN SERVICE[1]	USED FOR QUANTITATIVE ACC CRIT		POST-TEST CAL DATE[2]	POST-TEST CALIBRATION ACCEPTABLE[2] INITIAL/DATE
		INIT/DATE	INIT/DATE	YES	NO		
2-LPT-67-85		N/A			NO	N/A	N/A
2-LPT-67-93		N/A			NO	N/A	N/A
2-LPT-67-101		N/A			NO	N/A	N/A
2-LPT-67-109		N/A			NO	N/A	N/A

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

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

Appendix D
(Page 1 of 3)
SWITCH LINEUP

Data Package: Page ____ of ____ **Date _____**

IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY: INITIAL
Main Control Room				
2-HS-30-83A	2-M-9	CRDM CLR A-A	STOP PULL TO LOCK	
2-HS-30-92A	2-M-9	CRDM CLR B-B	STOP PULL TO LOCK	
2-HS-30-88A	2-M-9	CRDM CLR C-A	STOP PULL TO LOCK	
2-HS-30-80A	2-M-9	CRDM CLR D-B	STOP PULL TO LOCK	
2-HS-67-85A	0-M-27A	CRDM CLR A OUTLET TCV	P AUTO	
2-HS-67-93A	0-M-27A	CRDM CLR C OUTLET TCV	P AUTO	
2-HS-67-101A	0-M-27A	CRDM CLR B OUTLET TCV	P AUTO	
2-HS-67-109A	0-M-27A	CRDM CLR D OUTLET TCV	P AUTO	
Auxiliary Control Room				
2-HS-30-84C	2-L-10	CRDM CLR A-A SHROUD SUCTION	CLOSE	
2-HS-30-85C	2-L-10	CRDM CLR A-A LWR CNTMT SUCT	OPEN	
2-HS-30-93C	2-L-10	CRDM CLR B-B SHROUD SUCTION	CLOSE	
2-HS-30-94C	2-L-10	CRDM CLR B-B LWR CNTMT SUCT	OPEN	
2-HS-30-89C	2-L-10	CRDM CLR C-A SHROUD SUCTION	CLOSE	
2-HS-30-90C	2-L-10	CRDM CLR C-A LWR CNTMT SUCT	OPEN	
2-HS-30-81C	2-L-10	CRDM CLR D-B SHROUD SUCTION	CLOSE	
2-HS-30-82C	2-L-10	CRDM CLR B-B LWR CNTMT SUCT	OPEN	
2-HS-67-85C	2-L-10	CRDM COOLER A-A ERCW OUTLET TCV	P AUTO	
2-HS-67-93C	2-L-10	CRDM COOLER C-A ERCW OUTLET TCV	P AUTO	
2-HS-67-101C	2-L-10	CRDM COOLER B-B ERCW OUTLET TCV	P AUTO	
2-HS-67-109C	2-L-10	CRDM COOLER D-B ERCW OUTLET TCV	P AUTO	

Appendix D
(Page 2 of 3)
SWITCH LINEUP

Data Package: Page ____ of ____ **Date _____**

2-L-11A				
2-XS-30-90	2-L-11A	CRDM COOLER C-A LWR CNTMT SUCT DMPR	NOR	
2-XS-30-84	2-L-11A	CRDM COOLER A-A SHROUD SUCT DMPR	NOR	
2-XS-30-85	2-L-11A	CRDM COOLER A-A LWR CNTMT SUCT DMPR	NOR	
2-XS-30-89	2-L-11A	CRDM COOLER C-A SHROUD SUCT DMPR	NOR	
2-XS-67-85	2-L-11A	CRDM CLR A-A ERCW OUTLET TCV	NOR	
2-XS-67-93	2-L-11A	CRDM CLR C-A OUTLET TCV	NOR	
2-L-11B				
2-XS-30-81	2-L-11B	CRDM CLR D-B SHROUD SUCT DMPR	NOR	
2-XS-30-82	2-L-11B	CRDM CLR D-B LWR CNTMT SUCT DMPR	NOR	
2-XS-30-93	2-L-11B	CRDM CLR B-B SHROUD SUCT DMPR	NOR	
2-XS-30-94	2-L-11B	CRDM CLR B-B LWR CNTMT SUCT DMPR	NOR	
2-XS-67-101	2-L-11B	CRDM CLR B-B ERCW OUTLET TCV	NOR	
2-XS-67-109	2-L-11B	CRDM CLR D-B ERCW OUTLET TCV	NOR	

Appendix D
(Page 3 of 3)
SWITCH LINEUP

Data Package: Page ____ of ____ **Date _____**

IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY: INITIAL
480V Shutdown Board Room 2A				
2-HS-30-83C	480V SHUTDOWN BOARD 2A1-A, Compartment 5A	CRDM CLR 2A-A FAN 1 & 2	AUTO	
2-XS-30-83	480V SHUTDOWN BOARD 2A1-A, Compartment 5A	CRDM CLR 2A-A FAN 1 & 2	NORMAL	
2-HS-30-88C	480V SHUTDOWN BOARD 2A2-A, Compartment 5A	CRDM CLR 2C-A FAN 1 & 2	AUTO	
2-XS-30-88	480V SHUTDOWN BOARD 2A2-A, Compartment 5A	CRDM CLR 2C-A FAN 1 & 2	NORMAL	
480V Shutdown Board Room 2B				
2-HS-30-92C	480V SHUTDOWN BOARD 2B1-B, Compartment 5A	CRDM CLR 2B-B FAN 1 & 2	AUTO	
2-XS-30-92	480V SHUTDOWN BOARD 2B1-B, Compartment 5A	CRDM CLR 2B-B FAN 1 & 2	NORMAL	
2-HS-30-80C	480V SHUTDOWN BOARD 2B2-B, Compartment 5A	CRDM CLR 2D-B FAN 1 & 2	AUTO	
2-XS-30-80	480V SHUTDOWN BOARD 2B2-B, Compartment 5A	CRDM CLR 2D-B FAN 1 & 2	NORMAL	

Appendix E
(Page 1 of 4)

POWER LINEUP

Data Package: Page ____ of ____ **Date _____**

IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY: INITIAL
480V Shutdown Board Room 2A				
2-BKR-30-83	480V SHUTDOWN BOARD 2A1-A, Compartment 7B	CRDM CLR 2A-A (2-CLR-30-83)	DISCONNECTED	
2-BKR-30-88	480V SHUTDOWN BOARD 2A2-A, Compartment 7A	CRDM CLR 2C-A (2-CLR-30-88)	DISCONNECTED	
480V Shutdown Board Room 2B				
2-BKR-30-92	480V SHUTDOWN BOARD 2B1-B, Compartment 7C	CRDM CLR 2B-B (2-CLR-30-92)	DISCONNECTED	
2-BKR-30-80	480V SHUTDOWN BOARD 2B2-B, Compartment 7B	CRDM CLR 2D-B (2-CLR-30-80)	DISCONNECTED	

Appendix E
(Page 2 of 4)

POWER LINEUP

Data Package: Page ____ of ____ **Date _____**

IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY: INITIAL
Vital Battery Board Room I				
2-BKR-235-1/7	120V AC VITAL INSTR POWR BOARD 2-I BKR 7	AUX RELAY RACK 2-R-76 BUS A	ON	
2-BKR-235-1/8	120V AC VITAL INSTR POWR BOARD 2-I BKR 8	AUX RELAY RACK C BUS TO PNL 2-R-76	ON	
2-BKR-235-1/11	120V AC VITAL INSTR POWR BOARD 2-I BKR 11	AUX RELAY RACK A BUS TO PNL 2-R-75	ON	
Vital Battery Board Room III				
0-FU-236-3/A42	125V DC BATT BD III CKT A42	CRD COOLING UNIT 2A-A SUCTION DMP	INSTALLED*	
0-FU-236-3/A43	125V DC BATT BD III CKT A43	CRD COOLING UNIT 2A-A RM DIVERSION DMP	INSTALLED*	
0-FU-236-3/A44	125V DC BATT BD III CKT A44	CRD COOLING UNIT 2C-A SUCTION DMP	INSTALLED*	
0-FU-236-3/A45	125V DC BATT BD III CKT A45	CRD COOLING UNIT 2C-A RM DIVERSION DMP	INSTALLED*	
0-FU-236-3/B42	125V DC BATT BD III CKT B42	CRD COOLING UNIT 2A-A SUCTION DMP	INSTALLED*	
0-FU-236-3/B43	125V DC BATT BD III CKT B43	CRD COOLING UNIT 2A-A RM DIVERSION DMP	INSTALLED*	
0-FU-236-3/B44	125V DC BATT BD III CKT B44	CRD COOLING UNIT 2C-A SUCTION DMP	INSTALLED*	
0-FU-236-3/B45	125V DC BATT BD III CKT B45	CRD COOLING UNIT 2C-A RM DIVERSION DMP	INSTALLED*	
0-FU-236-3/A22	125V DC BATT BD III CKT A22	CONTROL ROD DRIVE VENT CLR A SUPPLY VALVE	INSTALLED*	
0-FU-236-3/A24	125V DC BATT BD III CKT A24	CONTROL ROD DRIVE VENT CLR C SUPPLY VALVE	INSTALLED*	
2-BKR-235-3/26	120V AC VITAL INSTR POWR BOARD 2-III BKR 26	BOP INST RACK 1-R-141 1-R-144/146/147 BUS C	ON	
2-BKR-235-3/40	120V AC VITAL INSTR POWR BOARD 2-III BKR 40	AUX RELAY RACK SSPS AUX RELAYS	ON	

Appendix E
(Page 3 of 4)

POWER LINEUP

Data Package: Page ____ of ____ **Date _____**

IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY: INITIAL
Vital Battery Board Room II				
2-BKR-235-2/6	120V AC VITAL INSTR POWR BOARD 2-II BKR 6	AUX RELAY RACK 2-R-76 BUS B	ON	
2-BKR-235-2/9	120V AC VITAL INSTR POWR BOARD 2-II BKR 9	AUX RELAY RACK B BUS TO PNL 2-R-75	ON	
Vital Battery Board Room IV				
0-FU-236-4/A13	125V DC BATT BD IV CKT A13	CRD COOLING UNIT 2D-B SUCTION DMP	INSTALLED*	
0-FU-236-4/A14	125V DC BATT BD IV CKT A14	CRD COOLING UNIT 2D-B RM DIVERSION DMP	INSTALLED*	
0-FU-236-4/A15	125V DC BATT BD IV CKT A15	CRD COOLING UNIT 2B-B SUCTION DMP	INSTALLED*	
0-FU-236-4/A16	125V DC BATT BD IV CKT A16	CRD COOLING UNIT 2B-B RM DIVERSION DMP	INSTALLED*	
0-FU-236-4/B13	125V DC BATT BD IV CKT B13	CRD COOLING UNIT 2D-B SUCTION DMP	INSTALLED*	
0-FU-236-4/B14	125V DC BATT BD IV CKT B14	CRD COOLING UNIT 2D-B RM DIVERSION DMP	INSTALLED*	
0-FU-236-4/B15	125V DC BATT BD IV CKT B15	CRD COOLING UNIT 2B-B SUCTION DMP	INSTALLED*	
0-FU-236-4/B16	125V DC BATT BD IV CKT B16	CRD COOLING UNIT 2B-B RM DIVERSION DMP	INSTALLED*	
0-FU-236-4/A10	125V DC BATT BD IV CKT A10	CONTROL ROD DRIVE VENT CLR B SUPPLY VALVE	INSTALLED*	
0-FU-236-4/A12	125V DC BATT BD IV CKT A12	CONTROL ROD DRIVE VENT CLR D SUPPLY VALVE	INSTALLED*	
2-BKR-235-4/26	120V AC VITAL INSTR POWR BOARD 2-IV BKR 26	AUX BLD INSTR BUS B TO PNL 2-L-26	ON	
2-BKR-235-4/35	120V AC VITAL INSTR POWR BOARD 2-IV BKR 35	AUX RELAY RACK SSPS AUX RELAYS	ON	

Appendix E
(Page 4 of 4)
POWER LINEUP

Data Package: Page ____ of ____ **Date _____**

IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY: INITIAL
Unit 2 Auxiliary Instrument Room				
2-FU-275-R75/K1 2-FU-275-R75/K2	2-R-75 Row K, Fuse 1 & 2	CRDM CLR UNIT 2B-B ANN SEP RELAY	INSTALLED*	
2-FU-275-R75/K19 2-FU-275-R75/K20	2-R-75 Row K, Fuse 19 & 20	CRDM CLR UNIT 2A-A ANN SEP RELAY	INSTALLED*	
2-FU-275-R75/K21 2-FU-275-R75/K22	2-R-75 Row K, Fuse 21 & 22	CRDM CLR UNIT 2C-A ANN SEP RELAY	INSTALLED*	
2-FU-275-R75/L3 2-FU-275-R75/L4	2-R-75 Row L, Fuse 3 & 4	CRDM CLR UNIT 2C-A ANN SEP RELAY	INSTALLED*	
2-FU-275-R75/L5 2-FU-275-R75/L6	2-R-75 Row L, Fuse 5 & 6	CRDM CLR UNIT 2A-A ANN SEP RELAY	INSTALLED*	
2-FU-275-R75/L11 2-FU-275-R75/L12	2-R-75 Row L, Fuse 11 & 12	CRDM CLR UNIT 2D-B ANN SEP RELAY	INSTALLED*	
2-FU-275-R75/L15 2-FU-275-R75/L16	2-R-75 Row L, Fuse 15 & 16	CRDM CLR UNIT 2B-B ANN SEP RELAY	INSTALLED*	
2-FU-275-R75/L17 2-FU-275-R75/L18	2-R-75 Row L, Fuse 17 & 18	CRDM CLR UNIT 2D-B ANN SEP RELAY	INSTALLED*	
2-FU-275-R76/I9 2-FU-275-R76/I10	2-R-76 Row I, Fuse 9 & 10	PANEL 2-M-9 MOTOR TRIPOUT ANNUNCIATION SEPARATION RELAY	INSTALLED*	
2-FU-275-R76/I13 2-FU-275-R76/I14	2-R-76 Row I, Fuse 13 & 14	PANEL 2-M-9 MOTOR TRIPOUT ANNUNCIATION SEPARATION RELAY	INSTALLED*	
2-FU-275-R76/N1 2-FU-275-R76/N2	2-R-76 Row N, Fuse 1 & 2	MOTOR TRIPOUT BUZZER FOR PANELS M-1 THROUGH M-6 AND M-9	INSTALLED*	

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