WBN2Public Resource

From: Boyd, Desiree L [dlboyd@tva.gov]
Sent: Tuesday, January 18, 2011 2:36 PM
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_01-18-11_ 2-PTI-030G-01 transmittal to NRC
Attachments: 01-18-11_ 2-PTI-030G-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
~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~

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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

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January 18, 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 2 Pre-op Test Instruction (PTI) is enclosed:

PTI NUMBER	Rev.	TITLE
2-PTI-030G-01	0	Upper Compartment Coolers

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

Sincerely,

M. Bajestani

Masoud Bajestani
Watts Bar Unit 2 Vice President

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: Upper Compartment Coolers

Instruction No: 2-PTI-030G-01

Revision No: 0000

PREPARED BY: Keith Jones Keith Jones DATE: 10-29-10
PRINT NAME / SIGNATURE

REVIEWED BY: Bethany Merriman Bethany Merriman DATE: 10-29-10
PRINT NAME / SIGNATURE

INSTRUCTION APPROVAL

JTG MEETING No: 2-10-015

JTG CHAIRMAN: [signature] DATE: 1/13/11

APPROVED BY : [signature] DATE: 1/13/11
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	1/13/11	ALL	This procedure is written using the Unit 1 PTI-030J-02 Rev 1 as a guide. Handswitches are not allowed to be placed in PULL A-P AUTO. The auto start features enabled by this switch position are disabled and are not tested in this PTI.

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1.0 INTRODUCTION

1.1 Test Objectives

A. Demonstrate the proper operation of the Reactor Containment Building Upper Compartment Cooling Units.

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

1.2 Scope

NOTES

1) 2-PTI-030L-01, HFT Containment Temperature Survey, will demonstrate the Upper Compartment Coolers' ability to maintain design temperatures.
2) ERCW flowrates are verified during performance of 2-PTI-067-02, ERCW System Flow Balance.
3) System vibration testing will be performed during performance of GTM-05, HVAC Air Balance, for this system.

A. This test demonstrates the operability of the Unit 2 Upper Compartment Coolers (UCCs) to ensure the following:

1. Each UCC unit stops on a simulated Phase B Containment Isolation Signal and remains off when the signal is reset.

2. The air inlet and outlet temperatures for each UCC can be monitored on the Plant Computer System

3. Each UCC unit maintains desired air flows.

4. Each ERCW control valve opens and closes upon start/stop of its associated UCC.

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 (Draft)

C. 0-SOI-67.01, Essential Raw Cooling Water System (Draft)

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

2.2 Developmental References

A. Final Safety Analysis Report, Amendment 101

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 Diagram

a. 2-47W866-1, Rev 2, HEATING AND VENTILATION AIR FLOW

b. 2-47W845-3, Rev 1, ESSENTIAL RAW COOLING WATER

2. Electrical

a. 2-45W760-30-15, Rev 0, VENTILATION SYSTEM SCHEMATIC DIAGRAMS

b. 2-45W600-57-10, Rev 0, SEPARATION & MISC AUX RELAYS SCHEMATIC DIAGRAMS

c. 2-45W755-1, Rev 1, 480V REACTOR VENT BD 2A-A SINGLE LINE

d. 2-45W755-3, Rev 0, 480V REACTOR VENT BD 2B-B SINGLE LINE

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2.2 Developmental References (continued)

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

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

g. 45N2691-3, Rev 8, SEPARATION AUX RELAY PANEL 2-R-76 CONNECTION DIAGRAM

3. Logic/Control

a. 2-47W610-30-2, Rev 1, CONTROL DIAGRAM VENTILATION SYSTEM

b. 2-47W611-30-3, Rev 0, LOGIC DIAGRAM VENTILATION SYSTEM

4. Other

a. 2-47W600-159, Rev 0, ELECTRICAL INSTRUMENTS AND CONTROLS
DRA 54643-02, Rev 1
DRA 54643-14, 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. 47B601-55-25 (AC), Rev D, ELECTRICAL INSTRUMENT TABULATION

e. 2-45B655-5C, Rev 0, MAIN CONTROL ROOM ANNUNCIATOR INPUTS WINDOW BOX XA-55-5C

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

g. 2-47A615-0, Rev 1, INTEGRATED COMPUTER SYSTEM TERMINATIONS AND I/O LIST. (Page 19 of 30)

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2.2 Developmental References (continued)

C. Vendor Manuals

1. VTD-F180-5340, (located in EDCR 53643, Rev A)

D. 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-30G-1, Rev 0, Containment Air Cooling System - Upper Compartment Coolers
5. 2-PTI-030L-01, HFT Containment Temperature Survey (Draft)
6. 2-PTI-067-02, ERCW System Flow Balance (Draft)

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3.0 PRECAUTIONS AND LIMITATIONS

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

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

C. Component tags and labels may differ slightly (abbreviations, punctuation, letter case, etc.) from the description given in this test. If this situation occurs, it shall not be considered a test deficiency or procedure deviation. It shall be documented in the CTL and reconciled by way of a plant labeling request or drawing discrepancy or single-line date typo change in the procedure as appropriate.

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

E. Problems identified during the test shall be annotated on the CTL from SMP-9.0 including a description of the problem, the procedure step when/where the problem was identified, corrective action steps taken to resolve the problem, and the number of the corrective action document, if one was required.

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

G. 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.

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

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

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

K. Test personnel will coordinate with Unit 1 Operations when manipulation Unit 1 equipment, if required.

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

3.0 PRECAUTIONS AND LIMITATIONS (continued)

L. During performance of this procedure, visual observation of air handling units is required. This includes steady-state and transient operations (fan starts and stops) with visual confirmation that vibration is not excessive.

M. To verify that transient conditions are not causing excessive vibration, observe components (air handlers, etc) during the transient, as practical. If not practical to observe during the transient, verify after the transient that no damage has occurred.

N. If the vibration is determined to be excessive, the Test Engineer shall initiate a Test Deficiency Notice.

O. UCC control switches may NOT be placed in PULL A-P AUTO. Auto start features enabled by this switch position are disabled.

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 results. _____

[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. SubSection 6.1 _____

B. SubSection 6.2 _____

C. SubSection 6.3 _____

D. SubSection 6.4 _____

E. SubSection 6.5 _____

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

A. SubSection 6.1 _____

B. SubSection 6.2 _____

C. SubSection 6.3 _____

D. SubSection 6.4 _____

E. SubSection 6.5 _____

[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.

A. SubSection 6.1 _____

B. SubSection 6.2 _____

C. SubSection 6.3 _____

D. SubSection 6.4 _____

E. SubSection 6.5 _____

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

4.1 Preliminary Actions (continued)

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

JTG Meeting No: _____ _____

[10] **ATTACH** completed GTM-05 HVAC Air Balance package for system 30G 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 listed on Appendix C, Permanent Plant Instrumentation Log, are placed in service and are within their calibration interval.

A. SubSection 6.1 _____

B. SubSection 6.2 _____

C. SubSection 6.3 _____

D. SubSection 6.4 _____

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

VERIFY no conditions exist that will impact test performance.

A. SubSection 6.1 _____

B. SubSection 6.2 _____

C. SubSection 6.3 _____

D. SubSection 6.4 _____

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. SubSection 6.1 _____

B. SubSection 6.2 _____

C. SubSection 6.3 _____

D. SubSection 6.4 _____

[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

NONE

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 232, 480V Reactor Vent Boards _____

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

D. System 67, Essential Raw Cooling Water System _____

E. System 99, Reactor Protection System _____

F. System 261, Plant Process Computer System (ICS) _____

NOTES

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

[2] **ENSURE** system 55, Annunciator and Sequential Events Recording System, applicable TBK switches are ON, the applicable Master switches are ON, and window software input(s) are ENABLED for the following Annunciator windows:

- 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO _____

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

4.3 Field Preparations (continued)

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

A. T1118A (SubSection 6.1) _____

B. T1119A (SubSection 6.2) _____

C. T1120A (SubSection 6.3) _____

D. T1121A (SubSection 6.4) _____

E. T1122A (SubSection 6.1) _____

F. T1123A (SubSection 6.2) _____

G. T1124A (SubSection 6.3) _____

H. T1125A (SubSection 6.4) _____

[4] **ENSURE** the following system 67, ERCW Valves are available to support test activities.

A. 2-TCV-67-129, UPPER CNTMT VENT CLR 2A ERCW RET TEMP CNTL (SubSection 6.1) _____

B. 2-TCV-67-137, UPPER CNTMT VENT CLR 2B ERCW RET TEMP CNTL (SubSection 6.2) _____

C. 2-TCV-67-132, UPPER CNTMT VENT CLR 2C ERCW RET TEMP CNTL (SubSection 6.3) _____

D. 2-TCV-67-140, UPPER CNTMT VENT CLR 2D ERCW RET TEMP CNTL (SubSection 6.4) _____

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

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 Switches and Outputs on Panel 2-L-336, [A13U/713 (Pent Rm)]:

A. 2-TIC-67-129, UPPER CNTMT VENT CLR 2A ERCW RET TEMP CNTL, [2-L-336A] (SubSection 6.1)

Auto/Manual Switch Position: _____

Indicated Controller Output: _____

_____

B. 2-TIC-67-137, UPPER CNTMT VENT CLR 2B ERCW RET TEMP CNTL, [2-L-336B] (SubSection 6.2)

Auto/Manual Switch Position: _____

Indicated Controller Output: _____

_____

C. 2-TIC-67-132, UPPER CNTMT VENT CLR 2C ERCW RET TEMP CNTL, [2-L-336A] (SubSection 6.3)

Auto/Manual Switch Position: _____

Indicated Controller Output: _____

_____

D. 2-TIC-67-140, UPPER CNTMT VENT CLR 2D ERCW RET TEMP CNTL, [2-L-336B] (SubSection 6.4)

Auto/Manual Switch Position: _____

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-336, Auto/Manual Switches are in MAN and outputs are adjusted for maximum cooling (for Full Open status indication):

A. 2-TIC-67-129, UPPER CNTMT VENT CLR 2A ERCW RET TEMP CNTL, [2-L-336A] (SubSection 6.1) _____

B. 2-TIC-67-137, UPPER CNTMT VENT CLR 2B ERCW RET TEMP CNTL, [2-L-336B] (SubSection 6.2) _____

C. 2-TIC-67-132, UPPER CNTMT VENT CLR 2C ERCW RET TEMP CNTL, [2-L-336A] (SubSection 6.3) _____

D. 2-TIC-67-140, UPPER CNTMT VENT CLR 2D ERCW RET TEMP CNTL, [2-L-336B] (SubSection 6.4) _____

[8] **ENSURE** system switches are configured in accordance with Appendix D, Switch Lineup. _____

[9] **ENSURE** system breakers are configured in accordance with Appendix E, Electrical Lineup. _____

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.

_____ _____
U-2 US/SRO/SM Signature Date

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

5.0 ACCEPTANCE CRITERIA

	Upper Compartment Cooler 2A	Upper Compartment Cooler 2B	Upper Compartment Cooler 2C	Upper Compartment Cooler 2D
Controls, Annunciations, Alarms, and Indications operate correctly.	SubSection 6.1	SubSection 6.2	SubSection 6.3	SubSection 6.4
Stops on Phase B Containment Isolation Signal, and Remains stopped when signal is reset	6.1[16] 6.1[20]	6.2[16] 6.2[20]	6.3[16] 6.3[20]	6.4[16] 6.4[20]
Intake and Exhaust Air Temperatures output to the Plant Computer (ICS) properly	6.1[5]	6.2[5]	6.3[5]	6.4[5]
Associated ERCW control valve opens/closes when UCC Unit starts/stops.	(2-TCV-67-129) 6.1[4]F 6.1[7]E	(2-TCV-67-137) 6.2[4]F 6.2[7]E	(2-TCV-67-132) 6.3[4]F 6.3[7]E	(2-TCV-67-140) 6.4[4]F 6.4[7]E
Maintains design air flow of 16,000 CFM (14,400 CFM minimum)[1,2]	6.5[4]	6.5[8]	6.5[12]	6.5[16]
Motor Current and KVA are within the allowable motor nameplate values.[1,2]	6.5[6] 6.5[7]	6.5[10] 6.5[11]	6.5[14] 6.5[15]	6.5[18] 6.5[19]

[1] Air flow Acceptance Criteria has been adjusted to account for at least 90% of design/rated flow provided motor current and KVA are within limits for non-ducted, freestanding air coolers as delineated in G-37, section 4.4.4.4.

[2] This instruction does not perform any air flow, current, or voltage 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 Subsections of this test may be performed in any order, provided the steps within each Subsection are performed in the order written.
2) All verifications (fan starts, fan stops, valve position, etc) are to be done by local observation unless otherwise noted.
3) Upper Compartment Cooler (UCC) Handswitches in the Main Control Room spring return to A AUTO from START and STOP positions.
4) UCC Units are located on top of the Steam Generator (S/G) enclosures ("doghouses") in Upper Containment.
   - UCC 2A and 2D are located together on the south S/G enclosure (above S/G #1 and #4).
   - UCC 2B and 2C are located together on the north S/G enclosure (above S/G #2 and #3).
5) UCC fans require approximately two minutes to coast down.

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

6.1 Upper Compartment Cooler 2A Logic

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

[2] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is NORMAL (Green). _____

C. On Panel 2-M-6, Train A MASTER ISOL SIGNAL STATUS PNL, 2-XX-55-6C, Window 3, ∅B, is CLEAR. _____

[3] **PLACE** Handswitch 2-HS-30-95A, UPR CNTMT CLR A, [2-M-9], to A AUTO, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-95A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 4, TCV-67-129 UPPER CNTMT CLR 2A OPEN, is OFF. _____

C. Breaker 2-BKR-30-95, 480V REACTOR VENT BD 2A-A, Compartment 9B, Red Light is OFF. _____

D. Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A, [EL 802 AZ 37° (above S/G #1)], is OFF. _____

E. Valve 2-TCV-67-129, UPPER CNTMT VENT CLR 2A ERCW RET TEMP CNTL, [A13V/713 (Pent Rm)], is CLOSED. _____

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

6.1 Upper Compartment Cooler 2A Logic (continued)

[4] **PLACE** Handswitch 2-HS-30-95A, UPR CNTMT CLR A, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-95A:

- Green Light OFF _____
- Red Light ON _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 4, TCV-67-129 UPPER CNTMT CLR 2A OPEN, is ON. _____

C. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

D. Breaker 2-BKR-30-95, 480V REACTOR VENT BD 2A-A, Compartment 9B, Red Light is ON. _____

E. Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A, is ON. _____

F. Valve 2-TCV-67-129, UPPER CNTMT VENT CLR 2A ERCW RET TEMP CNTL, is OPEN. **(Acc Crit)** _____

[5] **VERIFY** that the UCC 2A intake and exhaust air temperature ICS Point Qualities are GOOD. **(Acc Crit)**

- Point T1118A,
  UPPER COMPT COOL UNIT A INTAKE _____
- ICS Point T1122A
  UPPER COMPT COOL UNIT A EXHAUST _____

[6] **RECORD** UCC 2A intake and exhaust air temperature as indicated by Plant Computer (ICS) log points:

ICS Point T1118A
UPPER COMPT COOL UNIT A INTAKE _____ °F

ICS Point T1122A
UPPER COMPT COOL UNIT A EXHAUST _____ °F

_____

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

6.1 Upper Compartment Cooler 2A Logic (continued)

[7] **PLACE** Handswitch 2-HS-30-95A, UPR CNTMT CLR A, [2-M-9], to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-95A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 4, TCV-67-129 UPPER CNTMT CLR 2A OPEN, is OFF. _____

C. Breaker 2-BKR-30-95, 480V REACTOR VENT BD 2A-A, Compartment 9B, Red Light is OFF. _____

D. Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A, is OFF. _____

E. Valve 2-TCV-67-129, UPPER CNTMT VENT CLR 2A ERCW RET TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[8] **PRESS** START Pushbutton, 2-HS-30-95B, CNTMT UPPER COMPARTMENT COOLER 2A, at 2-JB-293-333, [EL 803 AZ 30°], **AND**

VERIFY the following:

A. Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A, is ON. _____

B. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

C. On Handswitch 2-HS-30-95A UPR CNTMT CLR A, [2-M-9]:

- Green Light OFF _____
- Red Light ON _____

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

6.1 Upper Compartment Cooler 2A Logic (continued)

[9] **DISCONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-95, UPPER COMPT VENT UNIT A FLOW ALM, at UCC 2A inlet plenum to simulate a Low Air Flow condition for UCC 2A.

_____ 1st

_____ CV

[10] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, ALARMS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is in ALARM (Red). _____

[11] **RECONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-95, UPPER COMPT VENT UNIT A FLOW ALM, at UCC 2A inlet plenum.

_____ 1st

_____ CV

[12] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, CLEARS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO is NORMAL (Green). _____

[13] **PRESS** STOP Pushbutton, 2-HS-30-95B, CNTMT UPPER COMPARTMENT COOLER 2A, at 2-JB-293-333, **AND**

VERIFY the following:

A. Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A, is OFF. _____

B. On Handswitch 2-HS-30-95AUPR CNTMT CLR A, [2-M-9]:

- Green Light ON _____
- Red Light OFF _____

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

6.1 Upper Compartment Cooler 2A Logic (continued)

[14] **PLACE** Handswitch 2-HS-30-95A, UPR CNTMT CLR A, [2-M-9], to START, **AND**

VERIFY the following on Handswitch 2-HS-30-95A:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following steps will simulate a Train A Phase B Containment Isolation Signal and Phase B signal reset by lifting and landing a wire in SSPS Train-A Output Cabinet 2-R-48.

[15] **LIFT** wire 9B5 from TB615, point 7 in Panel 2-R-48 (45N2676-4). _____ 1st _____ CV

[16] **VERIFY** the following on Handswitch 2-HS-30-95A, UPR CNTMT CLR A, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[17] **PRESS** and **HOLD** START Pushbutton, 2-HS-30-95B, CNTMT UPPER COMPARTMENT COOLER 2A, at 2-JB-293-333, **AND**

VERIFY Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A, is ON. _____

[18] **RELEASE** START Pushbutton, 2-HS-30-95B, CNTMT UPPER COMPARTMENT COOLER 2A, **AND**

VERIFY Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A, is OFF. _____

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

6.1 Upper Compartment Cooler 2A Logic (continued)

[19] **LAND** wire 9B5 on TB615, point 7 in Panel 2-R-48. (45N2676-4)

_____ 1st

_____ CV

[20] **VERIFY** the following on Handswitch 2-HS-30-95A, UPR CNTMT CLR A, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[21] **PLACE** Handswitch 2-HS-30-95A, UPR CNTMT CLR A, [2-M-9], to STOP PULL TO LOCK. _____

[22] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-129, UPPER CNTMT VENT CLR 2A ERCW RET TEMP CNTL, is returned to its As-Found positions recorded in Step 4.3[6]A.

Auto/Manual Switch Position: _____

Indicated Controller Output: _____

_____ 1st

_____ CV

[23] **VERIFY** successful completion of this SubSection 6.1. **(Acc Crit)**_____

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

6.2 Upper Compartment Cooler 2B Logic

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

[2] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is NORMAL (Green). _____

C. On Panel 2-M-6, Train B MASTER ISOL SIGNAL STATUS PNL, 2-XX-55-6D, Window 3, ∅B, is CLEAR. _____

[3] **PLACE** Handswitch 2-HS-30-97A, UPR CNTMT CLR B, [2-M-9], to A AUTO, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-97A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 6, TCV-67-137 UPPER CNTMT CLR 2B OPEN, is OFF. _____

C. Breaker 2-BKR-30-97, 480V REACTOR VENT BD 2B-B, Compartment 9B, Red Light is OFF. _____

D. Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B, [EL 802 AZ 149° (above S/G #2)], is OFF _____

E. Valve 2-TCV-67-137, UPPER CNTMT VENT CLR 2B ERCW RET TEMP CNTL, [A13V/713 (Pent Rm)], is CLOSED. _____

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

6.2 Upper Compartment Cooler 2B Logic (continued)

[4] **PLACE** Handswitch 2-HS-30-97A, UPR CNTMT CLR B, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-97A:

- Green Light OFF _____
- Red Light ON _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 6, TCV-67-137 UPPER CNTMT CLR 2B OPEN, is ON. _____

C. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

D. Breaker 2-BKR-30-97, 480V REACTOR VENT BD 2B-B, Compartment 9B, Red Light is ON. _____

E. Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B, is ON. _____

F. Valve 2-TCV-67-137, UPPER CNTMT VENT CLR 2B ERCW RET TEMP CNTL, is OPEN. **(Acc Crit)** _____

[5] **VERIFY** that the UCC 2B intake and exhaust air temperature ICS Point Qualities are GOOD. **(Acc Crit)**

- ICS Point T1119A
  UPPER COMPT COOL UNIT B INTAKE _____
- ICS Point T1123A
  UPPER COMPT COOL UNIT B EXHAUST _____

[6] **RECORD** UCC 2B intake and exhaust air temperature as indicated by Plant Computer (ICS) log points:

ICS Point T1119A
UPPER COMPT COOL UNIT B INTAKE _____ °F

ICS Point T1123A
UPPER COMPT COOL UNIT B EXHAUST _____ °F

_____

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

6.2 Upper Compartment Cooler 2B Logic (continued)

[7] **PLACE** Handswitch 2-HS-30-97A, UPR CNTMT CLR B, [2-M-9], to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-97A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 6, TCV-67-137 UPPER CNTMT CLR 2B OPEN, is OFF. _____

C. Breaker 2-BKR-30-97, 480V REACTOR VENT BD 2B-B, Compartment 9B, Red Light is OFF. _____

D. Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B, is OFF. _____

E. Valve 2-TCV-67-137, UPPER CNTMT VENT CLR 2B ERCW RET TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[8] **PRESS** START Pushbutton, 2-HS-30-97B, CNTMT UPPER COMPARTMENT COOLER 2B, at 2-JB-293-317, [EL 803 AZ 143°], **AND**

VERIFY the following:

A. Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B, is ON. _____

B. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

C. On Handswitch 2-HS-30-97A UPR CNTMT CLR B, [2-M-9]:

- Green Light OFF _____
- Red Light ON _____

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

6.2 Upper Compartment Cooler 2B Logic (continued)

[9] **DISCONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-97, UPPER COMPT VENT UNIT B FLOW ALM, at UCC 2B inlet plenum to simulate a Low Air Flow condition for UCC 2B.

_____ 1st

_____ CV

[10] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, ALARMS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is in ALARM (Red). _____

[11] **RECONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-97, UPPER COMPT VENT UNIT B FLOW ALM, at UCC 2B inlet plenum.

_____ 1st

_____ CV

[12] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, CLEARS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO is NORMAL (Green). _____

[13] **PRESS** STOP Pushbutton, 2-HS-30-97B, CNTMT UPPER COMPARTMENT COOLER 2B at 2-JB-293-317, **AND**

VERIFY the following:

A. Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B, is OFF. _____

B. On Handswitch 2-HS-30-97A UPR CNTMT CLR B, [2-M-9]:

- Green Light ON _____
- Red Light OFF _____

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

6.2 Upper Compartment Cooler 2B Logic (continued)

[14] **PLACE** Handswitch 2-HS-30-97A, UPR CNTMT CLR B, [2-M-9], to START, **AND**

VERIFY the following on Handswitch 2-HS-30-97A:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following steps will simulate a Train B Phase B Containment Isolation Signal and Phase B signal reset by lifting and landing a wire in SSPS Train-B Output Cabinet 2-R-51.

[15] **LIFT** wire 9B5 from TB615, point 7 in Panel 2-R-51 (45N2677-4). _____ 1st _____ CV

[16] **VERIFY** the following on Handswitch 2-HS-30-97A, UPR CNTMT CLR B, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[17] **PRESS** and **HOLD** START Pushbutton, 2-HS-30-97B, CNTMT UPPER COMPARTMENT COOLER 2B, at 2-JB-293-317, **AND**

VERIFY Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B, is ON. _____

[18] **RELEASE** START Pushbutton, 2-HS-30-97B, CNTMT UPPER COMPARTMENT COOLER 2B, **AND**

VERIFY Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B, is OFF. _____

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

6.2 Upper Compartment Cooler 2B Logic (continued)

[19] **LAND** wire 9B5 on TB615, point 7 in Panel 2-R-51. (45N2677-4)

_____ 1st

_____ CV

[20] **VERIFY** the following on Handswitch 2-HS-30-97A, UPR CNTMT CLR B, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[21] **PLACE** Handswitch 2-HS-30-97A, UPR CNTMT CLR B, [2-M-9], to STOP PULL TO LOCK. _____

[22] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-137, UPPER CNTMT VENT CLR 2B ERCW RET TEMP CNTL, is returned to its As-Found position recorded in Step 4.3[6]B.

Auto/Manual Switch Position: _____

Indicated Controller Output: _____

_____ 1st

_____ CV

[23] **VERIFY** successful completion of this SubSection 6.2. **(Acc Crit)**_____

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

6.3 Upper Compartment Cooler 2C Logic

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

[2] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is NORMAL (Green). _____

C. On Panel 2-M-6, Train A MASTER ISOL SIGNAL STATUS PNL, 2-XX-55-6C, Window 3, ∅B, is CLEAR. _____

[3] **PLACE** Handswitch 2-HS-30-99A, UPR CNTMT CLR C, [2-M-9], to A AUTO, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-99A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 5, TCV-67-132 UPPER CNTMT CLR 2C OPEN, is OFF. _____

C. Breaker 2-BKR-30-99, 480V REACTOR VENT BD 2A-A, Compartment 10B, Red Light is OFF. _____

D. Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C, [EL 802 AZ 215° (above S/G #3)], is OFF. _____

E. Valve 2-TCV-67-132, UPPER CNTMT VENT CLR 2C ERCW RET TEMP CNTL, [A13V/713 (Pent Rm)], is CLOSED. _____

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

6.3 Upper Compartment Cooler 2C Logic (continued)

[4] **PLACE** Handswitch 2-HS-30-99A, UPR CNTMT CLR C, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-99A:

- Green Light OFF _____
- Red Light ON _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 5, TCV-67-132 UPPER CNTMT CLR 2C OPEN, is ON. _____

C. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

D. Breaker 2-BKR-30-99, 480V REACTOR VENT BD 2A-A, Compartment 10B, Red Light is ON. _____

E. Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C, is ON. _____

F. Valve 2-TCV-67-132, UPPER CNTMT VENT CLR 2C ERCW RET TEMP CNTL, is OPEN. **(Acc Crit)** _____

[5] **VERIFY** that the UCC 2C intake and exhaust air temperature ICS Point Qualities are GOOD. **(Acc Crit)** _____

- ICS Point T1120A
  UPPER COMPT COOL UNIT C INTAKE _____
- ICS Point T1124A
  UPPER COMPT COOL UNIT C EXHAUST _____

[6] **RECORD** UCC 2C intake and exhaust air temperature as indicated by Plant Computer (ICS) log points:

ICS Point T1120A
UPPER COMPT COOL UNIT C INTAKE _____ °F

ICS Point T1124A
UPPER COMPT COOL UNIT C EXHAUST _____ °F

_____

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

6.3 Upper Compartment Cooler 2C Logic (continued)

[7] **PLACE** Handswitch 2-HS-30-99A, UPR CNTMT CLR C, [2-M-9], to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-99A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 5, TCV-67-132 UPPER CNTMT CLR 2C OPEN, is OFF. _____

C. Breaker 2-BKR-30-99, 480V REACTOR VENT BD 2A-A, Compartment 10B, Red Light is OFF. _____

D. Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C, is OFF. _____

E. Valve 2-TCV-67-132, UPPER CNTMT VENT CLR 2C ERCW RET TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[8] **PRESS** START Pushbutton, 2-HS-30-99B, CNTMT UPPER COMPARTMENT COOLER 2C, at 2-JB-293-316, [EL 803 AZ 207°], **AND**

VERIFY the following:

A. Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C, is ON. _____

B. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

C. On Handswitch 2-HS-30-99A UPR CNTMT CLR C, [2-M-9]:

- Green Light OFF _____
- Red Light ON _____

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

6.3 Upper Compartment Cooler 2C Logic (continued)

[9] **DISCONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-99, UPPER COMPT VENT UNIT C FLOW ALM, at UCC 2C inlet plenum to simulate a Low Air Flow condition for UCC 2C.

_____ 1st

_____ CV

[10] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, ALARMS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is in ALARM (Red). _____

[11] **RECONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-99, UPPER COMPT VENT UNIT C FLOW ALM, at UCC 2C inlet plenum.

_____ 1st

_____ CV

[12] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, CLEARS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO is NORMAL (Green). _____

[13] **PRESS** STOP Pushbutton, 2-HS-30-99B, CNTMT UPPER COMPARTMENT COOLER 2C, at 2-JB-293-316, **AND**

VERIFY the following:

A. Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C, is OFF. _____

B. On Handswitch 2-HS-30-99A UPR CNTMT CLR C, [2-M-9]:

- Green Light ON _____
- Red Light OFF _____

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

6.3 Upper Compartment Cooler 2C Logic (continued)

[14] **PLACE** Handswitch 2-HS-30-99A, UPR CNTMT CLR C, [2-M-9], to START, **AND**

VERIFY the following on Handswitch 2-HS-30-99A:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following steps will simulate a Train A Phase B Containment Isolation Signal and Phase B signal reset by lifting and landing a wire in SSPS Train-A Output Cabinet 2-R-48.

[15] **LIFT** wire 10B5 from TB615, point 9 in Panel 2-R-48 (45N2676-4). _____ 1st _____ CV

[16] **VERIFY** the following on Handswitch 2-HS-30-99A, UPR CNTMT CLR C, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[17] **PRESS** and **HOLD** START Pushbutton, 2-HS-30-99B, CNTMT UPPER COMPARTMENT COOLER 2C, at 2-JB-293-316, **AND**

VERIFY Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C, is ON. _____

[18] **RELEASE** START Pushbutton, 2-HS-30-99B, CNTMT UPPER COMPARTMENT COOLER 2C, **AND**

VERIFY Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C, is OFF. _____

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

6.3 Upper Compartment Cooler 2C Logic (continued)

[19] **LAND** wire 10B5 on TB615, point 9 in Panel 2-R-48. (45N2676-4)

_____ 1st

_____ CV

[20] **VERIFY** the following on Handswitch 2-HS-30-99A, UPR CNTMT CLR C, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[21] **PLACE** Handswitch 2-HS-30-99A, UPR CNTMT CLR C, [2-M-9], to STOP PULL TO LOCK. _____

[22] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-132, UPPER CNTMT VENT CLR 2C ERCW RET TEMP CNTL, is returned to its As-Found position recorded in Step 4.3[6]C.

Auto/Manual Switch Position: _____

Indicated Controller Output: _____

_____ 1st

_____ CV

[23] **VERIFY** successful completion of this SubSection 6.3. **(Acc Crit)**_____

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

6.4 Upper Compartment Cooler 2D Logic

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

[2] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, is CLEAR. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is NORMAL (Green). _____

C. On Panel 2-M-6, Train B MASTER ISOL SIGNAL STATUS PNL, 2-XX-55-6D, Window 3, ∅B, is CLEAR. _____

[3] **PLACE** Handswitch 2-HS-30-100A, UPR CNTMT CLR D, [2-M-9], to A AUTO, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-100A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 7, TCV-67-140 UPPER CNTMT CLR 2D OPEN, is OFF. _____

C. Breaker 2-BKR-30-100, 480V REACTOR VENT BD 2B-B, Compartment 10B, Red Light is OFF. _____

D. Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D, [EL 802 AZ 325° (above S/G #4)], is OFF. _____

E. Valve 2-TCV-67-140, UPPER CNTMT VENT CLR 2D ERCW RET TEMP CNTL, [A13V/713 (Pent Rm)], is CLOSED. _____

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

6.4 Upper Compartment Cooler 2D Logic (continued)

[4] **PLACE** Handswitch 2-HS-30-100A, UPR CNTMT CLR D, [2-M-9], to START, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-100A:

- Green Light OFF _____
- Red Light ON _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 7, TCV-67-140 UPPER CNTMT CLR 2D OPEN, is ON. _____

C. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

D. Breaker 2-BKR-30-100, 480V REACTOR VENT BD 2B-B, Compartment 10B, Red Light is ON. _____

E. Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D, is ON. _____

F. Valve 2-TCV-67-140, UPPER CNTMT VENT CLR 2D ERCW RET TEMP CNTL, is OPEN. **(Acc Crit)** _____

[5] **VERIFY** that the UCC 2D intake and exhaust air temperature ICS Point Qualities are GOOD. **(Acc Crit)** _____

- ICS Point T1121A
  UPPER COMPT COOL UNIT D INTAKE _____
- ICS Point T1125A
  UPPER COMPT COOL UNIT D EXHAUST _____

[6] **RECORD** UCC 2D intake and exhaust air temperature as indicated by Plant Computer (ICS) log points:

ICS Point T1121A
UPPER COMPT COOL UNIT D INTAKE _____ °F

ICS Point T1125A
UPPER COMPT COOL UNIT D EXHAUST _____ °F

_____

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

6.4 Upper Compartment Cooler 2D Logic (continued)

[7] **PLACE** Handswitch 2-HS-30-100A, UPR CNTMT CLR D, [2-M-9], to STOP, **AND**

VERIFY the following:

A. On Handswitch 2-HS-30-100A:

- Green Light ON _____
- Red Light OFF _____

B. On Panel 0-M-27A, CLRS ERCW SUP, 0-XX-55-27B, Window 7, TCV-67-140 UPPER CNTMT CLR 2D OPEN, is OFF. _____

C. Breaker 2-BKR-30-100, 480V REACTOR VENT BD 2B-B, Compartment 10B, Red Light is OFF. _____

D. Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D, is OFF. _____

E. Valve 2-TCV-67-140, UPPER CNTMT VENT CLR 2D ERCW RET TEMP CNTL, is CLOSED. **(Acc Crit)** _____

[8] **PRESS** START Pushbutton, 2-HS-30-100B, CNTMT UPPER COMPARTMENT COOLER 2D, at 2-JB-293-336, [EL 803 AZ 332°], **AND**

VERIFY the following:

A. Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D, is ON. _____

B. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, remains CLEAR (after approximately 45 seconds). _____

C. On Handswitch 2-HS-30-100A UPR CNTMT CLR D, [2-M-9]:

- Green Light OFF _____
- Red Light ON _____

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

6.4 Upper Compartment Cooler 2D Logic (continued)

[9] **DISCONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-100, UPPER COMPT VENT UNIT D FLOW ALM, at UCC 2D inlet plenum to simulate a Low Air Flow condition for UCC 2D.

_____ 1st

_____ CV

[10] **VERIFY** the following:

A. 2-XA-55-5C-103A, UPR CNTMT CLR FLOW LO, ALARMS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO, is in ALARM (Red). _____

[11] **RECONNECT** the "Low Side" tubing of Flow Switch 2-FS-30-100, UPPER COMPT VENT UNIT B FLOW ALM, at UCC 2D inlet plenum.

_____ 1st

_____ CV

[12] **VERIFY** the following:

A. 2-XA-55-5C–103A, UPR CNTMT CLR FLOW LO, CLEARS. _____

B. Unit 2 Alarm Events Display Screen indicates 103-A UPR CNTMT CLR FLOW LO is NORMAL (Green). _____

[13] **PRESS** STOP Pushbutton, 2-HS-30-100B, CNTMT UPPER COMPARTMENT COOLER 2D, at 2-JB-293-336, **AND**

VERIFY the following:

A. Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D, is OFF. _____

B. On Handswitch 2-HS-30-100A UPR CNTMT CLR D, [2-M-9]:

- Green Light ON _____
- Red Light OFF _____

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

6.4 Upper Compartment Cooler 2D Logic (continued)

[14] **PLACE** Handswitch 2-HS-30-100A, UPR CNTMT CLR D, [2-M-9], to START, **AND**

VERIFY the following on Handswitch 2-HS-30-100A:

- Green Light OFF _____
- Red Light ON _____

NOTE

The following steps will simulate a Train B Phase B Containment Isolation Signal and Phase B signal reset by lifting and landing a wire in SSPS Train-B Output Cabinet 2-R-51.

[15] **LIFT** wire 10B5 from TB615, point 9 in Panel 2-R-51 (45N2677-4). _____ 1st _____ CV

[16] **VERIFY** the following on Handswitch 2-HS-30-100A, UPR CNTMT CLR D, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[17] **PRESS** and **HOLD** START Pushbutton, 2-HS-30-100B, CNTMT UPPER COMPARTMENT COOLER 2D, at 2-JB-293-336, **AND**

VERIFY Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D is ON. _____

[18] **RELEASE** START Pushbutton, 2-HS-30-100B, CNTMT UPPER COMPARTMENT COOLER 2D, **AND**

VERIFY Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D, is OFF. _____

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

6.4 Upper Compartment Cooler 2D Logic (continued)

[19] **LAND** wire 10B5 on TB615, point 9 in Panel 2-R-51. (45N2677-4)

_____ 1st

_____ CV

[20] **VERIFY** the following on Handswitch 2-HS-30-100A, UPR CNTMT CLR D, [2-M-9]:

- Green Light ON **(Acc Crit)** _____
- Red Light OFF **(Acc Crit)** _____

[21] **PLACE** Handswitch 2-HS-30-100A, UPR CNTMT CLR D, [2-M-9], to STOP PULL TO LOCK. _____

[22] **ENSURE** ERCW Temperature Indicating Controller 2-TIC-67-140, UPPER CNTMT VENT CLR 2D ERCW RET TEMP CNTL, is returned to its As-Found position recorded in Step 4.3[6]D.

Auto/Manual Switch Position: _____

Indicated Controller Output: _____

_____ 1st

_____ CV

[23] **VERIFY** successful completion of this SubSection 6.4. **(Acc Crit)**_____

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

6.5 Upper Compartment Cooler Air Flows

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

[2] **ENSURE** motor operating data and air flow measurement for the following have been performed using GTM-05, HVAC Air Balance:

A. Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A _____

B. Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B _____

C. Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C _____

D. Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D _____

[3] **ENSURE** completed GTM-05 data sheets are attached to this instruction. _____

NOTE

The remaining steps in Section 6.5 record and verify data from the completed GTM-05, HVAC Air Balance Package for system 30G and may be completed in any order unless otherwise specified.

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

6.5 Upper Compartment Cooler Air Flows (continued)

[4] **RECORD** the air flow measurement for Cooler 2-CCU-30-95, CNTMT UPPER COMPARTMENT COOLER 2A below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM

Acc Crit: 14,400 CFM minimum _____

[5] **RECORD** the following for Motor 2-MTR-30-95, UPPER COMPARTMENT COOLING UNIT 2A:

A. Corrected maximum motor current:

_____ AMPS _____

B. Maximum nameplate KVA:

_____ KVA _____

[6] **RECORD** average motor current reading for Motor 2-MTR-30-95, UPPER COMPARTMENT COOLING UNIT 2A, below, **AND**

VERIFY it is less than or equal to the corrected maximum motor current recorded in step 6.5[5]A. **(Acc Crit)**

_____ AMPS _____

[7] **RECORD** actual KVA for Motor 2-MTR-30-95, UPPER COMPARTMENT COOLING UNIT 2A, below, **AND**

VERIFY it is less than or equal to the corrected maximum nameplate KVA recorded in step 6.5[5]B. **(Acc Crit)**

_____ KVA _____

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

6.5 Upper Compartment Cooler Air Flows (continued)

[8] **RECORD** the air flow measurement for Cooler 2-CCU-30-97, CNTMT UPPER COMPARTMENT COOLER 2B below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM

Acc Crit: 14,400 CFM minimum _____

[9] **RECORD** the following for Motor 2-MTR-30-97, UPPER COMPARTMENT COOLING UNIT 2B:

A. Corrected maximum motor current:

_____ AMPS _____

B. Maximum nameplate KVA:

_____ KVA _____

[10] **RECORD** average motor current reading for Motor 2-MTR-30-97, UPPER COMPARTMENT COOLING UNIT 2B, below, **AND**

VERIFY it is less than or equal to the corrected maximum motor current recorded in step 6.5[9]A. **(Acc Crit)**

_____ AMPS _____

[11] **RECORD** actual KVA for Motor 2-MTR-30-97, UPPER COMPARTMENT COOLING UNIT 2B, below, **AND**

VERIFY it is less than or equal to the corrected maximum nameplate KVA recorded in step 6.5[9]B. **(Acc Crit)**

_____ KVA _____

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

6.5 Upper Compartment Cooler Air Flows (continued)

[12] **RECORD** the air flow measurement for Cooler 2-CCU-30-99, CNTMT UPPER COMPARTMENT COOLER 2C below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM

Acc Crit: 14,400 CFM minimum _____

[13] **RECORD** the following for Motor 2-MTR-30-99, UPPER COMPARTMENT COOLING UNIT 2C:

A. Corrected maximum motor current:

_____ AMPS _____

B. Maximum nameplate KVA:

_____ KVA _____

[14] **RECORD** average motor current reading for Motor 2-MTR-30-99, UPPER COMPARTMENT COOLING UNIT 2C, below, **AND**

VERIFY it is less than or equal to the corrected maximum motor current recorded in step 6.5[13]A. **(Acc Crit)**

_____ AMPS _____

[15] **RECORD** actual KVA for Motor 2-MTR-30-99, UPPER COMPARTMENT COOLING UNIT 2C, below, **AND**

VERIFY it is less than or equal to the corrected maximum nameplate KVA recorded in step 6.5[13]B. **(Acc Crit)**

_____ KVA _____

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

6.5 Upper Compartment Cooler Air Flows (continued)

[16] **RECORD** the air flow measurement for Cooler 2-CCU-30-100, CNTMT UPPER COMPARTMENT COOLER 2D below, **AND**

VERIFY it meets acceptance criteria.

_____ CFM

Acc Crit: 14,400 CFM minimum _____

[17] **RECORD** the following for Motor 2-MTR-30-100, UPPER COMPARTMENT COOLING UNIT 2D:

A. Corrected maximum motor current:

_____ AMPS _____

B. Maximum nameplate KVA:

_____ KVA _____

[18] **RECORD** average motor current reading for Motor 2-MTR-30-100, UPPER COMPARTMENT COOLING UNIT 2D, below, **AND**

VERIFY it is less than or equal to the corrected maximum motor current recorded in step 6.5[17]A. **(Acc Crit)**

_____ AMPS _____

[19] **RECORD** actual KVA for Motor 2-MTR-30-100, UPPER COMPARTMENT COOLING UNIT 2D, below, **AND**

VERIFY it is less than or equal to the corrected maximum nameplate KVA recorded in step 6.5[17]B. **(Acc Crit)**

_____ KVA _____

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

7.0 POST PERFORMANCE ACTIVITY

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

8.0 RECORDS

A. QA Records

Completed Test Package.

B. Non-QA Records

None

Appendix A
(Page 1 of 1)

TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

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

NOTES

1) Additional copies of this table may be made as necessary.
2) Initial and date indicates review has been completed for impact.

PROCEDURE/ INSTRUCTION	REVISION/ CHANGES	IMPACT Yes/No	INITIAL AND DATE. (N/A for no change)
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-30G-1			
2-PTI-030L-01			
2-PTI-067-02			

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-30-211O		N/A	N/A		NO	N/A	N/A
2-TE-30-211P		N/A	N/A		NO	N/A	N/A
2-TE-30-211Q		N/A	N/A		NO	N/A	N/A
2-TE-30-211R		N/A	N/A		NO	N/A	N/A
2-TE-30-211S		N/A	N/A		NO	N/A	N/A
2-TE-30-211T		N/A	N/A		NO	N/A	N/A
2-TE-30-211U		N/A	N/A		NO	N/A	N/A
2-TE-30-211V		N/A	N/A		NO	N/A	N/A
2-FS-30-95		N/A	N/A		NO	N/A	N/A
2-FS-30-97		N/A	N/A		NO	N/A	N/A
2-FS-30-99		N/A	N/A		NO	N/A	N/A
2-FS-30-100		N/A	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-67-129		N/A	N/A		NO	N/A	N/A
2-LPT-67-137		N/A	N/A		NO	N/A	N/A
2-LPT-67-132		N/A	N/A		NO	N/A	N/A
2-LPT-67-140		N/A	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 1)
SWITCH LINEUP

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

SWITCH NUMBER	SWITCH LOCATION	NOMENCLATURE	POSITION	VERIFIED BY INITIAL
2-HS-30-95A	2-M-9	UPR CNTMT CLR A	STOP-PULL TO LOCK	
2-HS-30-97A	2-M-9	UPR CNTMT CLR B	STOP-PULL TO LOCK	
2-HS-30-99A	2-M-9	UPR CNTMT CLR C	STOP-PULL TO LOCK	
2-HS-30-100A	2-M-9	UPR CNTMT CLR D	STOP-PULL TO LOCK	

Appendix E
(Page 1 of 1)

ELECTRICAL LINEUP

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

IDENTIFICATION	LOCATION	NOMENCLATURE	POSITION	VERIFIED BY INITIAL
2-BKR-30-95	480V RX VT BD 2A-A, COMPT 9B	CNTMT UPPER COMPARTMENT CLR 2A (2-CCU-30-95)	ON	
2-BKR-30-97	480V RX VT BD 2B-B, COMPT 9B	CNTMT UPPER COMPARTMENT CLR 2B (2-CCU-30-97)	ON	
2-BKR-30-99	480V RX VT BD 2A-A, COMPT 10B	CNTMT UPPER COMPARTMENT CLR 2C (2-CCU-30-99)	ON	
2-BKR-30-100	480V RX VT BD 2B-B, COMPT 10B	CNTMT UPPER COMPARTMENT CLR 2D (2-CCU-30-100)	ON	