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

February 16 2011

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

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

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

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

PTI NUMBER	Rev.	TITLE
2-PTI-063-05-A	0	System 063 - Safety Injection System Pump/Valve Logic Test - Train A
2-PTI-063-05-B	0	System 063 - Safety Injection System Pump/Valve Logic Test - Train B

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

Respectfully,

Marie Gillman
Acting Watts Bar Unit 2 Vice President

D030
NRR

cc (Enclosures):

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

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

WATTS BAR NUCLEAR PLANT

UNIT 2 STARTUP

TITLE: System 063 - Safety Injection System Pump/Valve Logic Test - Train A

RCE
2-11-11

Instruction No: 2-PTI-063-05-A

Revision No: 0

PREPARED BY: Curt Evans _____ DATE 2-10-11
PRINT NAME/ SIGNATURE

REVIEWED BY: Joe Mayo _____ DATE 2-10-11
PRINT NAME/ SIGNATURE

INSTRUCTION APPROVAL

JTG MEETING NO: 2-11-004

JTG CHAIRMAN: _____ DATE 2/10/11

APPROVED BY: _____ DATE 2/10/11
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	2/10/11	ALL	Initial Issue based off of 1-PTI-063-05.

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1.0 INTRODUCTION

1.1 Test Objectives

This test is being performed to ensure the valves, pumps, RWST immersion heaters and annunciators perform their design function.

1.2 Scope

Verify Safety Injection System (Sys 063) components function according to design requirements and required safety functions. This procedure deals mostly, but not exclusively, with the A Train components. Remaining SIS components will be tested during the performance of 2-PTI-063-05-B.

A. Ensure proper operation of Safety Injection System motor operated valves under static conditions.

B. Ensure proper operation of Safety Injection System motor operated valves interlocks.

C. Ensure proper operation of the Safety Injection Pump 6.9kV breaker.

D. Ensure proper operation of Safety Injection System air operated valves under static conditions.

E. Ensure proper operation of Refueling Water Storage Tank immersion heaters.

F. Ensure proper operation of Transfer Switch alarms.

G. Ensure proper operation of Safety Injection System component status alarms.

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2.0 REFERENCES

2.1 Performance References

A. SMP-7.0, Control of Cleanness, Layup and Flushing

B. SMP-9.0, Conduct of Test

C. NPG-SPP-10.2, Clearance Procedure to Safely Control Energy

2.2 Developmental References

A. Test Scoping Documents

1. 2-TSD-63-5, "Safety Injection System Integrated Test: Pump/Valve Logic Test"

2. 2-TSD-030A-01, "Select Auxiliary Building ESF Coolers and HELB Detection"

B. Final Safety Analysis Report

1. FSAR–Amendment 100

a. Section 6.3

b. Section 14.2

C. Drawings

1. Mechanical Flow Diagrams

a. 2-47W809-1 R3, "Flow Diagram Chemical & Volume Control System"

b. 2-47W810-1 R2, "Flow Diagram Residual Heat Removal System"

c. 2-47W811-1 R4, "Flow Diagram Safety Injection System"

d. 2-47W812-1 R3, "Flow Diagram Containment Spray System"

e. 2-47W830-6 R2, "Flow Diagram Waste Disposal System"

f. 2-47W848-5 R1, "Mechanical Flow Diagram Control Air"

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2.2 Developmental References (continued)

g. 2-47W848-9 R1, "Mechanical Flow Diagram Control Air"

h. 2-47W859-4 R2, "Mechanical Flow Diagram Component Cooling System"

2. Electrical Control Diagrams

a. 2-47W610-63-1 R3, "Electrical Control Diagram Safety Injection System"

b. 2-47W610-63-1A R2, "Electrical Control Diagram Safety Injection System"

c. 2-47W610-63-2 R2, "Electrical Control Diagram Safety Injection System"

d. 2-47W610-63-2B R2, "Electrical Control Diagram Safety Injection System"

3. Electrical Logic Diagrams

a. 2-47W611-63-1 R1, "Electrical Logic Diagram Safety Injection System"

b. 2-47W611-63-2 R1, "Electrical Logic Diagram Safety Injection System"

c. 2-47W611-63-3 R1, "Electrical Logic Diagram Safety Injection System"

d. 2-47W611-63-4 R1, "Electrical Logic Diagram Safety Injection System"

e. 2-47W611-63-5 R1, "Electrical Logic Diagram Safety Injection System"

f. 2-47W611-63-6 R1, "Electrical Logic Diagram Safety Injection System"

g. 2-47W611-63-7 R1, "Electrical Logic Diagram Safety Injection System"

h. 2-47W611-63-8 R1, "Electrical Logic Diagram Safety Injection System"

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2.2 Developmental References (continued)

4. Wiring Diagrams

   a. 45W799-1 R1, "Wiring Diagram 480V Chem & Vol Control BD B Connection Diagram"

   b. 45W799-2B R3, "Wiring Diagram 480V Chem & Vol Control BD B Conn Diag - Compt 2B"

      (1) 53291-007 R3

   c. 45W799-3B R3, "Wiring Diagram 480V Chem & Vol Control BD B Conn Diag - Compt 3B"

      (1) 53291-008 R3

   d. 45N2645-5 R10, "Wiring Diagrams Unit Control Board - Panel 2-M-6 Connection Diagrams - Sheet 5"

   e. 45W2657-1 R5, "Wiring Diagrams PNL 2-M-22 & 2-M-23 Connection Diagram Sheet 1"

   f. 45N2676-4 R12, "Wiring Diagrams Solid State Protection Sys Train A Connection Diagram Sh-4"

   g. 45N2676-5 R12, "Wiring Diagrams Solid State Protection Sys Train A Connection Diagram Sh-5"

   h. 45B2770-8A R4, "Wiring Diagrams 480V C&A BLDG VT BD 2A1-A Conn Diag - Compt 8A"

      (1) 53290-008 R1

   i. 45W2724-1 R4, "Wiring Diagrams 6900V Shtdn BD 2A-A & 2B-B Connection Diagram"

   j. 45B2766-4F R7, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 4F"

   k. 45B2766-5 R13, "Wiring Diagrams 480V Reac Mov BD 2A1-A Connection Diagram"

      (1) 52639-05 R0

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2.2 Developmental References (continued)

l. 45B2766-7D R3, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 7D"

(1) 53287-017 R0

m. 45B2766-8D R3, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 8D" Conn Diag - Compt 4F

(1) 53287-020 R0

n. 45B2766-9B, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 9B"

(1) 53287-022 R0

o. 45B2766-10A R6, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 10A"

(1) 53287-025 R0

p. 45B2766-10B R8, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 10B"

(1) 53287-026 R0

q. 45B2766-11A R7, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 11A"

(1) 53287-029 R0

r. 45B2766-11B R6, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 11B"

(1) 53287-030 R0

s. 45B2766-11D R7, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 11D"

(1) 53287-031 R0

t. 45B2766-12A R6, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 12A"

(1) 53287-033 R0

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2.2 Developmental References (continued)

u. 45B2766-12B R10, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 12B"

(1) 53287-034 R0

v. 45B2766-12D R4, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 12D"

(1) 53287-035 R0

w. 45B2766-12E R6, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 12E"

(1) 53287-036 R0

x. 45B2766-13A R8, "Wiring Diagrams 480V Reac Mov BD 2A1-A Conn Diag - Compt 13A"

(1) 53287-038 R0

y. 45N1645-4 R11, "Wiring Diagrams Unit Control Board - Panel 2-M-6 Connection Diagrams - Sheet 4"

z. 1-45W703-7 R12, "Wiring Diagrams 125V Vital Btry Board III PNL 4 Connection Diagram Sheet 7"

aa. 1-45W703-7A R11, "Wiring Diagrams 125V Vital Btry Board III PNL 4 Connection Diagram Sheet 7A"

bb. 1-45W703-8 R13, "Wiring Diagrams 125V Vital Btry Board IV PNL 4 Connection Diagram Sheet 8"

cc. 1-45W703-8A R14, "Wiring Diagrams 125V Vital Btry Board IV PNL 4 Connection Diagram Sheet 8A"

dd. 1-45W760-211-12 R16, "Wiring Diagrams 6900V Shutdown Power 2A-A Schematic Diagrams"

ee. 2-45B655-6D R1, "Main Control Room Annunciator Inputs Window Box XA-55-6D"

ff. 2-45B655-6F R0, "Main Control Room Annunciator Inputs Window Box XA-55-6F"

(1) 52630-092 R0

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2.2 Developmental References (continued)

gg. 2-45W600-57-4 R0, "Wiring Diagram Separation & Misc Aux Relays Schematic Diagram"

hh. 2-45W600-63-1 R0, "Wiring Diagram Safety Injection System Schematic Diagram"

ii. 2-45W600-63-2 R0, "Wiring Diagram Safety Injection System Schematic Diagram"

jj. 2-45W724-3 R0, "Wiring Diagrams 6900V Shutdown Board 2A-A Single Line"

kk. 2-45W746-2 R0, "Wiring Diagram 480V Chem & Vol Cont Bd B Single Line"

ll. 2-45W751-2 R0, "Wiring Diagrams 480V Reac Mov Bd 2A1-A Single Line Sh-2"

mm. 2-45W751-13 R0, "Wiring Diagrams 480V Reac Mov Bd 2A1-A Single Line Sh-4"

nn. 2-45W756-1 R0, "Wiring Diagrams 480V Cont & Aux Bldg Vt Bd 2A1-A"

oo. 2-45W760-30-17 R0, "Wiring Diagrams Ventilating System Schematic Diagrams"

(1) 53290-048 R1

pp. 2-45W760-63-1 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

qq. 2-45W760-63-2 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

rr. 2-45W760-63-3 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

ss. 2-45W760-63-4 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

tt. 2-45W760-63-5 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

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2.2 Developmental References (continued)

uu. 2-45W760-63-6 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

vv. 2-45W760-63-7 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

ww. 2-45W760-63-8 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

xx. 2-45W760-63-9 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

yy. 2-45W760-270-2 R0, "Wiring Diagram Miscellaneous System Schematic Diagram"

zz. 2-45W2770-6 ANT, "Wiring Diagrams 480V Cont & Aux Bldg Vent Bd 2A1-A Connection Diagrams"

(1) 52639-063 R0

aaa. 2-47B601-55-79 ANT, "Electrical Instrument Tabulations Panel 2-M-6"

(1) 52363-89 R0

bbb. E-3619E R1, "Wiring Diagram Panel 1 6900V Shutdown Board Logic Relay Pnl"

5. Vendor Drawings

a. 0126D4455 R907,"Switchgear Interconnection Diagram", Contract No. 74C2-84376

b. 0126D4462-5 R906,"Switchgear Interconnection Diagram", Contract No. 36717

c. 0126D4499-5 R907,"Switchgear Interconnection Diagram", Contract No. 74C2-84376

d. 7246D11-17 R9, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

e. 7246D11-19 R8, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

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2.2 Developmental References (continued)

f. 7246D11-20 R13, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

g. 7246D11-22 R12, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

h. 7246D11-56 R6, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

D. Other Documents

1. 2-47A615-0, “Integrated Computer System Terminations and I/O List”

2. Annunciator Response Instruction

a. ARI-8-14, “Aux Power” R8

b. ARI-131-137, “Miscellaneous” R20

c. ARI-145-150, “Fuses & Aux Switches” R4

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3.0 PRECAUTIONS AND LIMITATIONS

A. Operating the following valves can flood containment without the proper precaution:

1. 2-FCV-63-1
2. 2-FCV-63-5
3. 2-FCV-74-1
4. 2-FCV-74-2
5. 2-FCV-74-8
6. 2-FCV-74-9
7. 2-LCV-62-135
8. 2-LCV-62-136

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

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

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

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

F. All open problems are to be tracked by a corrective action document and entered on the appropriate system punch list.

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

3.0 PRECAUTIONS AND LIMITATIONS (continued)

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

H. Observe all Radiation Protection (RP) requirements when working in or near contaminated areas.

I. The containment sump valve 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A, will be cycled during the performance of this test. Take precautions to prevent flooding containment through the sump lines.

J. Confined Space Permits and Safety Observers are required for entrance of the valve vault.

K. The RWST heaters must NOT be energized without sufficient water (10ft) in the RWST to prevent heater burnout.

L. All demin water must be drained from the RWST before the addition of borated water.

M. Portions of this test will isolate the Safety Injection Pumps Suction and miniflow paths. Take precautions to preclude the pumps from starting during the performance of this test.

N. For timed sequences, a countdown will be communicated and utilized.

O. For breaker manipulations, the verbiage will change depending on the breaker positions. Close position and ON are the same. Open position and OFF are the same.

P. Local valve position will be confirmed by valve stem position.

Q. Throughout this instruction, the Control Room operator should verify, acknowledge, clear and otherwise respond to annunciators in the normal fashion.

R. Whenever a wire is lifted and left unattended, there must be a nonconductive tag attached to them identifying the work instruction and an entry made to the Configuration Control Log for Wire Lifts, Appendix E.

S. Ensure there are no adverse effects to the operations of unit 1 structures, systems, or components.

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

3.0 PRECAUTIONS AND LIMITATIONS (continued)

T. During the performance of this procedure, visual observation of piping and components is required. This includes steady state and transient operations with visual confirmation that vibration is not excessive.

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

V. Performance of this PTI results will have no adverse impact to the operation of Unit 1 components.

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

4.0 PREREQUISITE ACTIONS

NOTE
Preliminary action steps may be performed in any order with Test Directors approval.

4.1 Preliminary Actions

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

[2] **VERIFY** the latest revision of this PTI is in BSL. _____

[3] **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. _____

[4] **ENSURE** changes to the references listed on Appendix A, Test Procedure/Instruction Reference Review, have been reviewed, and determined NOT to adversely affect the test performance. _____

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

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

_____

[6] **EVALUATE** open items on Open 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 _____

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

4.1 Preliminary Actions (continued)

C. Subsection 6.3 _____

D. Subsection 6.4 _____

E. Subsection 6.5 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

K. Subsection 6.11 _____

L. Subsection 6.12 _____

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

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

4.1 Preliminary Actions (continued)

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

[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 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

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

4.1 Preliminary Actions (continued)

K. Subsection 6.11 _____

L. Subsection 6.12 _____

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

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

4.1 Preliminary Actions (continued)

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

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

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

[9] **ENSURE** a review of outstanding Clearances has been coordinated with U2 Operations for impact to the test performance, **AND**

RECORD in Appendix B, Temporary Condition Log if required.

A. Subsection 6.1 _____

B. Subsection 6.2 _____

C. Subsection 6.3 _____

D. Subsection 6.4 _____

E. Subsection 6.5 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

K. Subsection 6.11 _____

L. Subsection 6.12 _____

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

4.1 Preliminary Actions (continued)

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

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

4.1 Preliminary Actions (continued)

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

[10] **VERIFY** System cleanness as required for the performance of this test has been completed in accordance with SMP-7.0. _____

[11] **VERIFY** Measuring and Test Equipment (M&TE) required for test performance has been (as required) filled, vented, place in service and recorded on Measuring and Test Equipment Log.

A. Subsection 6.1 _____

B. Subsection 6.2 _____

C. Subsection 6.3 _____

D. Subsection 6.4 _____

E. Subsection 6.5 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

K. Subsection 6.11 _____

L. Subsection 6.12 _____

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

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

4.1 Preliminary Actions (continued)

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

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

[13] **ENSURE** all piping supports required for testing are installed and adjusted as needed. _____

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4.1 Preliminary Actions (continued)

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

[15] **REVIEW** preventative maintenance for system/components covered by this test, **AND**

VERIFY no conditions exist that will impact test performance. _____

[16] **PERFORM** a pretest briefing with test and operations personnel in accordance with SMP-9.0. _____

[17] **VERIFY** the following support system(s) are in service to the extent necessary to perform Section 6.1:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. 480V REACTOR MOV BOARD 2B1-B is energized. _____

C. 120V AC Vital Bd 2-I is energized. _____

D. 120V AC Vital Bd 2-II is energized. _____

E. 120V AC Vital Bd 2-III is energized. _____

F. 120V AC Vital Bd 2-IV is energized. _____

G. Annunciator System 055 is energized. _____

[18] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.2:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. Annunciator System 055 is energized. _____

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

4.1 Preliminary Actions (continued)

[19] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.3:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. 120V AC Vital Bd 2-III is energized. _____

C. Annunciator System 055 is energized. _____

[20] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.4:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. 120V AC Vital Bd 2-III is energized. _____

C. Annunciator System 055 is energized. _____

[21] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.5:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. Annunciator System 055 is energized. _____

[22] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.6:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. Annunciator System 055 is energized. _____

[23] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.7:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. Annunciator System 055 is energized. _____

[24] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.8:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. Annunciator System 055 is energized. _____

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

4.1 Preliminary Actions (continued)

[25] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.9:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. Annunciator System 055 is energized. _____

[26] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.10:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. Annunciator System 055 is energized. _____

[27] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.11:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. 480V C&A VT BD 2A1-A is energized. _____

C. Annunciator System 055 is energized. _____

[28] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.12:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. 480V REACTOR MOV BOARD 2B1-B is energized. _____

C. 120V AC Vital Bd 2-I is energized. _____

D. 120V AC Vital Bd 2-II is energized. _____

E. 120V AC Vital Bd 2-III is energized. _____

F. 120V AC Vital Bd 2-IV is energized. _____

G. Annunciator System 055 is energized. _____

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

4.1 Preliminary Actions (continued)

[29] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.13:

A. 480V REACTOR MOV BOARD 2A1-A is energized. _____

B. 120V AC Vital Bd 2-III is energized. _____

C. Annunciator System 055 is energized. _____

[30] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.14:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

B. Annunciator System 055 is energized. _____

[31] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.15:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[32] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.16:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[33] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.17:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

[34] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.18:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

[35] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.19:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

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4.1 Preliminary Actions (continued)

[36] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.20:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

[37] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.21:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

[38] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.22:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

[39] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.23:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

[40] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.24:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

[41] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.25:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

[42] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.26:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

[43] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.27:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

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4.1 Preliminary Actions (continued)

[44] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.28:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[45] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.29:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

B. Annunciator System 055 is energized. _____

[46] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.30:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

B. Annunciator System 055 is energized. _____

[47] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.31:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

B. Annunciator System 055 is energized. _____

[48] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.32:

A. 125V DC VITAL BATTERY BOARD III is energized. _____

B. Annunciator System 055 is energized. _____

[49] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.33:

A. 125V DC VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

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

4.1 Preliminary Actions (continued)

[50] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.34:

A. 480V CHEMICAL & VOLUME CONTROL BOARD B is energized. _____

[51] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.35:

A. 480V CHEMICAL & VOLUME CONTROL BOARD B is energized. _____

[52] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.36:

A. 6900 SHUTDOWN BOARD 2A-A is energized. _____

B. 480V C&A Vent Board 2A1-A is energized. _____

C. 120V AC Vital Bd 2-I is energized. _____

D. Annunciator System 055 is energized. _____

[53] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.37:

A. 120V AC Vital Bd 2-I is energized. _____

B. 120V AC Vital Bd 2-II is energized. _____

C. Annunciator System 055 is energized. _____

NOTE

Prerequisite 4.1[54], Valve Lineup, is an initial lineup only to establish control of System 63 for testing. The required valve positions to perform each individual section are identified within the section.

[54] **PERFORM** the valve lineup listed in Appendix C. _____

[55] **PERFORM** a pretest walk down on equipment to be tested to ensure no conditions exist that will impact the test performance and that needed valves are accessible. _____

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

4.1 Preliminary Actions (continued)

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

[57] **ESTABLISH** communications in areas where testing is to be conducted. _____

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

[1] **ENSURE** the following equipment is available. _____

A. Jumpers, (Grabber Type with Insulated Boots)

B. Jumpers, (Momentary hand-held contact)

[2] **ENSURE** the following M&TE or equivalent is available and within their calibration due dates, **AND**

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

A. Digital Stopwatch (2), accuracy ± 0.1 sec (Recommend Micronta)

B. Digital Thermocouple/Millivolt Calibrator, capable of reading 50-80°F, ± 0.5°F (Recommend Biddle)

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

4.3 Field Preparations

[1] **PERFORM** the following prior to starting Section 6.3:

A. **LOCATE** and **VERIFY** terminals TB602-11 and TB602-12 in Panel 2-R-48.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB602-11 and TB602-12 in Panel 2-R-48 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

C. **LOCATE** and **VERIFY** terminals TB704-9 and TB704-10 in Panel 2-M-22.

_____ 1st

_____ CV

D. **INSTALL** a jumper across terminals TB704-9 and TB704-10 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____

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

4.3 Field Preparations (continued)

[2] **PERFORM** the following prior to starting Section 6.4:

A. **LOCATE** and **VERIFY** terminals TB620-11 and TB620-12 in Panel 2-R-48.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB620-11 and TB620-12 in Panel 2-R-48 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

C. **LOCATE** and **VERIFY** terminals TB704-9 and TB704-10 in Panel 2-M-22.

_____ 1st

_____ CV

D. **INSTALL** a jumper across terminals TB704-9 and TB704-10 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____

[3] **VERIFY** the responsible system engineer (RSE) has been consulted prior to performing Section 6.11:

A. System 74

_____ Sys Engr

[4] **PERFORM** the following prior to starting Section 6.13:

A. **LOCATE** and **VERIFY** terminals TB704-9 and TB704-10 in Panel 2-M-22.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB704-9 and TB704-10 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____

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

4.3 Field Preparations (continued)

[5] **PERFORM** the following prior to starting Section 6.14:

A. **LOCATE** and **VERIFY** terminals TB612-1 and TB612-2 in Panel 2-R-48.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB612-1 and TB612-2 in Panel 2-R-48 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____

[6] **PERFORM** the following prior to starting Section 6.15:

A. **LOCATE** and **VERIFY** terminals TB630-5 and TB630-6 in Panel 2-R-51.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB630-5 and TB630-6 in Panel 2-R-51 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____

[7] **PERFORM** the following prior to starting Section 6.16:

A. **LOCATE** and **VERIFY** terminals TB611-9 and TB611-10 in Panel 2-R-51.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB611-9 and TB611-10 in Panel 2-R-51 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____

[8] **VERIFY** greater than 10 feet of water in the RWST to prevent heater burnout prior to performing Sections 6.34. _____

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4.3 Field Preparations (continued)

[9] **VERIFY** greater than 10 feet of water in the RWST to prevent heater burnout prior to performing Sections 6.35. _____

[10] **VERIFY** the responsible System Engineer (RSE) has been consulted prior to performing Section 6.36:

A. System 30 _____ Sys Engr

[11] **VERIFY** the responsible System Engineer (RSE) has been consulted prior to performing Section 6.37.

A. System 55 _____ Sys Engr

B. System 62 _____ Sys Engr

C. System 70 _____ Sys Engr

D. System 72 _____ Sys Engr

E. System 74 _____ Sys Engr

[12] **VERIFY** that the four Safety Injection Accumulators are empty of liquid and vented. _____

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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.

_____ _____

U2 US/SRO/SM Signature — Date

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

5.0 ACCEPTANCE CRITERIA

A. The following System 063 Motor Operated Valves will operate with the thermal overload protective device bypass in effect and will NOT operate with the overload protective device bypass reset:

Valve Number	Operate Step	NOT Operate Step
2-FCV-63-3	6.1[44]	6.1[41]
2-FCV-63-26	6.2[44]	6.2[41]
2-FCV-63-118	6.3[106]	6.3[103]
2-FCV-63-80	6.4[106]	6.4[103]
2-FCV-63-7	6.5[44]	6.5[41]
2-FCV-63-47	6.6[44]	6.6[41]
2-FCV-63-152	6.7[44]	6.7[41]
2-FCV-63-93	6.8[52]	6.8[49]
2-FCV-63-156	6.9[44]	6.9[41]
2-FCV-63-177	6.10[39]	6.10[36]
2-FCV-63-72	6.11[44]	6.11[41]
2-FCV-63-8	6.12[45]	6.12[42]
2-FCV-63-1	6.13[55]	6.13[52]

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5.0 ACCEPTANCE CRITERIA (continued)

B. Each of the following valves meet their required stroke times as defined below:

Valve No.	Open Time, sec	Step No.	Close Time, sec	Step No.
2-FCV-63-3	≤10	6.1[25]	≤10	6.1[31]
2-FCV-63-26	≤12	6.2[26]	≤12	6.2[31]
2-FCV-63-7	≤10	6.5[26]	≤10	6.5[32]
2-FCV-63-47	≤15	6.6[26]	≤15	6.6[32]
2-FCV-63-152	≤12	6.7[26]	≤12	6.7[32]
2-FCV-63-93	≤40	6.8[26]	≤40	6.8[32]
2-FCV-63-156	≤17	6.9[26]	≤17	6.9[32]
2-FCV-63-177	≤120	6.10[22]	≤120	6.10[28]
2-FCV-63-72	≤60	6.11[26]	≤60	6.11[32]
2-FCV-63-8	≤28	6.12[27]	≤28	6.12[33]
2-FCV-63-1	≤60	6.13[28]	≤60	6.13[35]
2-FCV-63-71	N/A	N/A	>1 - ≤10	6.14[31]
2-FCV-63-23	N/A	N/A	>1 - ≤10	6.15[14]
2-FCV-63-84	N/A	N/A	>1 - ≤10	6.16[14]
2-FCV-63-158	N/A	N/A	>5 - ≤10	6.17[13]
2-FCV-63-165	N/A	N/A	>5 - ≤10	6.18[13]
2-FCV-63-78	N/A	N/A	>5 - ≤10	6.19[13]
2-FCV-63-79	N/A	N/A	>5 - ≤10	6.20[13]
2-FCV-63-116	N/A	N/A	>5 - ≤10	6.21[13]
2-FCV-63-117	N/A	N/A	>1 - ≤10	6.22[13]
2-FCV-63-21	N/A	N/A	>5 - ≤10	6.23[13]
2-FCV-63-164	N/A	N/A	>5 - ≤10	6.24[13]
2-FCV-63-174	N/A	N/A	>5 - ≤10	6.25[13]
2-FCV-63-111	N/A	N/A	>5 - ≤10	6.26[13]
2-FCV-63-77	N/A	N/A	>5 - ≤10	6.30[28]
2-FCV-63-115	N/A	N/A	>5 - ≤10	6.31[28]
2-FCV-63-130	N/A	N/A	>1 - ≤10	6.32[28]
2-FCV-63-24	N/A	N/A	>5 - ≤10	6.33[28]

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5.0 ACCEPTANCE CRITERIA (continued)

C. Annunciator window 2–XA–55–6F–149-C "480 RX MOV BD 2A1-A/2A2-A XS IN AUX" (2-M-6) alarms when the Transfer Switches are placed in the AUX position for the following valves:

Valve No.	Step No.
2-FCV-63-156	6.9[21]
2-FCV-63-152	6.7[21]
2-FCV-63-93	6.8[21]
2-FCV-63-72	6.11[21]
2-FCV-63-47	6.6[21]
2-FCV-63-26	6.2[21]
2-FCV-63-8	6.12[22]
2-FCV-63-7	6.5[21]
2-FCV-63-3	6.1[20]
2-FCV-63-1	6.13[23]
2-FCV-63-177	6.10[17]
2-FCV-63-118	6.3[74]
2-FCV-63-80	6.4[74]

D. Annunciator window 2–XA–55–6F–148-B "ACR PNL 2-L-11A XS IN AUX" (2-M-6) alarms when the Transfer Switches are placed in the AUX position for the following valves:

Valve No.	Step No.
2-FCV-63-77	6.30[17]
2-FCV-63-115	6.31[17]
2-FCV-63-127	6.29[17]
2-FCV-63-71	6.14[18]
2-FCV-63-130	6.32[17]

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5.0 ACCEPTANCE CRITERIA (continued)

E. Annunciator window 2–XA–55–6F–148-C "ACR PNL 2-L-11B XS IN AUX" (2-M-6) alarms when the Transfer Switches are placed in the AUX position for the following valves:

Valve No.	Step No.
2-FCV-63-87	6.27[17]
2-FCV-63-90	6.28[17]
2-FCV-63-24	6.33[17]

F. Valve 2-FCV-63-26 has the following Auto Responses:

1. Opens upon SI signal receipt and remains open when the SI signal is reset (Steps 6.2[56], 6.2[59]).

2. SI signal is NOT enabled when Transfer Switch is in the "AUX" position (Step 6.2[53]).

G. With valves 2-FCV-63-8 and 2-FCV-63-11 fully closed, the following valve may be opened:

1. 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, (Step 6.1[64])

H. With 2-FCV-63-72 full open and 2-FCV-63-3 full closed 2-FCV-63-8 may be opened (Step 6.12[73]) or with 2-FCV-63-72 full open and 2-FCV-63-4 full closed and 2-FCV-63-175 full closed 2-FCV-63-8 may be opened (Step 6.12[63]).

I. With Safety Injection Signal present 2-FCV-63-72 may be opened (Step 6.11[82]) or if 2-FCV-74-3 is fully closed 2-FCV-63-72 may be opened (Step 6.11[13]).

J. Valve 2-FCV-63-72 opens when an "SI" signal and RWST level low/CTMT level high signal are present (Step 6.11[86]). The valve remains open when the "SI" signal and RWST level low/CTMT level high signal are removed (Step 6.11[89]).

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

5.0 ACCEPTANCE CRITERIA (continued)

K. The following valves will close on receipt of Phase A Containment Isolation Signal and remain closed when the signal is reset:

VALVE NUMBER	STEP NUMBER
2-FCV-63-71	(Steps 6.14[51], 6.14[54])
2-FCV-63-23	(Steps 6.15[29], 6.15[32])
2-FCV-63-84	(Steps 6.16[29], 6.16[33])

L. With Transfer switch in NORMAL, Safety Injection Accumulator discharge valves open on receipt of a Safety Injection Signal and remain open when the signal is reset. The valves cannot be closed while a Safety Injection Signal is present.

VALVE NUMBER	STEP NUMBER
2-FCV-63-118	(Steps 6.3[126], 6.3[129], 6.3[133])
2-FCV-63-80	(Steps 6.4[126], 6.4[129], 6.4[133])

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

5.0 ACCEPTANCE CRITERIA (continued)

M. Annunciator Window 2–XA–55–6D–131-F "ESF Component NOT Normal" (2-M-6) alarms when any of the following components are NOT in the normal ESF alignment:

VALVE NUMBER	POSITION	STEP NUMBER
2-FCV-63-72	OPEN	6.37[8]
2-FCV-63-1	CLOSE	6.37[14]
2-FCV-63-3	CLOSE	6.37[20]
2-FCV-63-73	OPEN	6.37[26]
2-FCV-63-4	CLOSE	6.37[32]
2-FCV-63-175	CLOSE	6.37[38]
2-FCV-63-5	CLOSE	6.37[44]
2-FCV-63-8	OPEN	6.37[51]
2-FCV-63-11	OPEN	6.37[57]
2-FCV-63-26	OPEN	6.37[68]
2-FCV-63-25	OPEN	6.37[74]
SIP 2A-A	ON	6.37[81]
SIP 2B-B	ON	6.37[87]
2-FCV-63-47	CLOSE	6.37[95]
2-FCV-63-177	CLOSE	6.37[101]
2-FCV-63-7	OPEN	6.37[107]
2-FCV-63-48	CLOSE	6.37[113]
2-FCV-63-6	OPEN	6.37[119]
2-FCV-63-93	CLOSE	6.37[128]
2-FCV-63-152	CLOSE	6.37[134]
2-FCV-63-156	OPEN	6.37[140]
2-FCV-63-157	OPEN	6.37[146]
2-FCV-63-94	CLOSE	6.37[152]
2-FCV-63-153	CLOSE	6.37[158]
2-FCV-63-22	CLOSE	6.37[164]
2-FCV-63-172	OPEN	6.37[170]

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

5.0 ACCEPTANCE CRITERIA (continued)

N. Annunciator 2–XA–55–6D–131-C "CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN" (2-M-6) alarms when valve 2-FCV-63-118 or 2-FCV-63-80 is NOT fully open (Steps 6.3[63], 6.4[63]).

O. Annunciator 2–XA–55–6D–132-D "RWST TO RHR FCV-63-1 NOT OPEN" (2-M-6) alarms when valve 2-FCV-63-1 is NOT open (Step 6.13[20]).

P. The red light on 6900V Shutdown BD Logic Relay Panel illuminates when an SI Pump is operating (Step 6.36[58]).

Q. Annunciator 2–XA–55–1B–14-E "M-1 THRU M-6 MOTOR TRIPOUT" (2-M-1) alarms and an audible buzzer sounds when an SI pump trips on instantaneous over current (Steps 6.36[129], 6.36[142], 6.36[167], 6.36[183], 6.36[193]).

R. Annunciator 2–XA–55–1B–14-D "M-1 THRU M-6 MOTOR OVERLOAD" (2-M-1) alarms on a simulated overload of each SI pump (Step 6.36[159], 6.36[175]).

S. SI pumps will start on receipt of "SI" signal and remain running with "SI" signal reset (Steps 6.36[84], 6.36[86]).

T. Each Status Monitoring System input for SI pumps 2A-A indicates control power available, Hand Switch in "IN" position, and pump running when breaker is closed (Steps 6.36[32], 6.36[39], 6.36[49]).

U. Annunciator alarms when Transfer Switch for the SI pumps is in the AUX position (Steps 6.36[66]).

V. Refueling Water Storage Tank immersion heater C energizes on low temperature and shuts off on high temperature (Steps 6.34[15], 6.34[17]).

W. Refueling Water Storage Tank immersion heater D energizes on low temperature and shuts off on high temperature (Steps 6.35[15], 6.35[17]).

X. The following valves can only be opened from the Auxiliary Control Room if the Transfer Switch is in the AUX position:

VALVE NUMBER	STEP NUMBER	VALVE NUMBER	STEP NUMBER
2-FCV-63-24	6.33[8], 6.33[20]	2-FCV-63-90	6.28[8], 6.28[20]
2-FCV-63-71	6.14[9] 6.14[21]	2-FCV-63-115	6.31[8], 6.31[20]
2-FCV-63-77	6.30[8], 6.30[20]	2-FCV-63-127	6.29[8], 6.29[20]
2-FCV-63-87	6.27[8], 6.27[20]	2-FCV-63-130	6.32[8], 6.32[20]

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5.0 ACCEPTANCE CRITERIA (continued)

Y. The following valves can only be operated from the Motor Control Center if the Transfer Switch is in the AUX position:

VALVE NUMBER	STEP NUMBER
2-FCV-63-3	6.1[9], 6.1[15], 6.1[23], 6.1[29]
2-FCV-63-118	6.3[60], 6.3[67], 6.3[77], 6.3[83]
2-FCV-63-80	6.4[60], 6.4[67], 6.4[77], 6.4[83]
2-FCV-63-47	6.6[11], 6.6[16], 6.6[24], 6.6[30]
2-FCV-63-152	6.7[11], 6.7[16], 6.7[24], 6.7[30]
2-FCV-63-156	6.9[11], 6.9[16], 6.9[24], 6.9[30]

Z. The following valves fail closed on loss of power:

VALVE NUMBER	STEP NUMBER
2-FCV-63-71	6.14[37], 6.14[42]
2-FCV-63-23	6.15[18], 6.15[23]
2-FCV-63-84	6.16[18], 6.16[23]

AA. Appropriate windows on CISP illuminate, ("green" indicates closed) and remain illuminated when the CIS is RESET for the following valves:

VALVE NUMBER	STEP NUMBER
2-FCV-63-71	6.14[52], 6.14[55]
2-FCV-63-23	6.15[30], 6.15[33]
2-FCV-63-84	6.16[30], 6.16[34]

BB. The Safety Injection Pump can only be operated from the switchgear if the Transfer Switch is in the AUX position.

SI Pump	STEP NUMBER
2A-A	6.36[55], 6.36[60], 6.36[68], 6.36[73]

CC. Safety Injection Pump 2A-A Room Cooler Fan, 2-MTR-30-180, AUTO STARTS on start signal of Safety Injection Pump 2A-A (6.36[48]).

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

6.0 PERFORMANCE

NOTES

1) Sections 6.1 through 6.37 may be performed in any order provided the Prerequisites for the individual section are complete.
2) Valve stroke times will be determined at both the appropriate control switch and locally at the valve. At the control switch, the time will be from actuation of the control switch to the control switch light indication that the valve has completed its motion. At the valve, the stroke time will be measured by valve motion.
3) Valve stroke time will be measured remotely for acceptance criteria. Local stroke time measurement is for information only. A significant difference between remote and local valve stroke times will be evaluated for impact.
4) Throughout this instruction, the Control Room Operator should verify, acknowledge, clear and otherwise respond to annunciators in the normal fashion.
5) Reset stopwatches before performing the second timed stroke on valves.

6.1 Valve 2-FCV-63-3 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.1 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-3, [A11U/692] SIS PUMPS RECIRC TO RWST. _____

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-8, [A11W/713] RHR HEAT EXCHANGER A TO CVCS CHG PUMP, CLOSED _____

B. 2-FCV-63-72, [A12V/692] CONTAINMENT SUMP TO RHR PUMP A, OPEN _____

C. 2-FCV-63-11, [A11V/713] RHR HEAT EXCHANGER B TO SIS PUMP, CLOSED _____

D. 2-FCV-63-73, [A12V/692] CONTAINMENT SUMP TO RHR PUMP B, OPEN _____

E. 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, CLOSED _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2083 _____

B. FD2082 _____

[6] **ENSURE** Transfer Switch 2-XS-63-3, SIS PUMPS RECIRC TO RWST, is in NORMAL. _____

[7] **ENSURE** AUX CONTROL SWITCH 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, is in NORMAL. _____

[8] **PLACE** Hand Switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, to OPEN, **AND**

RETURN to NORMAL. _____

[9] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT open (**Acc Crit** 5.0Y).

[10] **VERIFY** ICS point FD2083 displays "NOT OPE". _____

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to OPEN and while the valve is opening,

PLACE Hand Switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to CLOSE, **AND**

RELEASE. _____

[12] **VERIFY** the following indications:

A. 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, red light ON. _____

B. 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, green light OFF. _____

C. Valve is OPEN (Local). _____

[13] **VERIFY** ICS point FD2083 displays "OPEN". _____

[14] **PLACE** Hand Switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, to CLOSE, **AND**

RELEASE. _____

[15] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT close (**Acc Crit** 5.0Y). _____

[16] **PLACE** Hand Switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to CLOSE and while the valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, is closing,

PLACE Hand Switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to OPEN, **AND**

RELEASE. _____

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

[17] **VERIFY** the following indications:

A. 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, red light OFF. _____

B. 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, green light ON. _____

C. Valve is CLOSED (Local). _____

[18] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[19] **PLACE** Transfer Switch 2-XS-63-3, SIS PUMPS RECIRC TO RWST, to AUX. _____

[20] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[21] **VERIFY** the following indications:

A. 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, red light OFF. _____

B. 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, green light OFF. _____

[22] **PLACE** Hand Switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to OPEN, **AND**

RELEASE. _____

[23] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT open (**Acc. Crit** 5.0Y). _____

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, stroke time will be done from control switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, and locally at the valve.

[24] **PLACE** Hand Switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, to OPEN, **AND**

RETURN to NORMAL, AND simultaneously time valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, stroke. _____

[25] **RECORD** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, open stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[26] **RECORD** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, open stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

[27] **VERIFY** the following indications:

A. 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, red light ON. _____

B. 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, green light OFF. _____

C. Valve is OPEN (Local). _____

[28] **PLACE** Hand Switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to CLOSE, **AND**

RELEASE. _____

[29] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT close (**Acc. Crit** 5.0Y). _____

NOTE

Stop watch timing of valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, stroke time will be done from control switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, and locally at the valve.

[30] **PLACE** Hand Switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, to CLOSE, **AND**

RETURN to NORMAL AND simultaneously time the valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, stroke. _____

[31] **RECORD** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, close stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

[32] **RECORD** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, close stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[33] **VERIFY** the following indications:

A. 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, red light OFF. _____

B. 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, green light ON. _____

C. Valve is CLOSED (Local). _____

[34] **VERIFY** ICS point FD2082 displays "PWR ON". _____

[35] **OPEN** breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A. _____

[36] **VERIFY** ICS point FD2082 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

[39] **CLOSE** breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A. _____

[40] **PLACE** Hand Switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** that valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT open (**Acc Crit** 5.0A). _____

[42] **DEPRESS, AND**

HOLD the armature of relay K2 in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K2 relay armature. _____

[46] **OPEN** breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 10B (2-BKR-63-3-A) at 480V RX MOV BD 2A1-A. _____

[50] **CLOSE** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, by placing Hand Switch 2-HS-63-3C, SIS PUMPS RECIRC TO RWST, to CLOSE, **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-3, SIS PUMPS RECIRC TO RWST, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

[53] **OPEN** valve 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP. _____

[54] **PLACE** control switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to OPEN, **AND**

RELEASE. _____

[55] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT open. _____

[56] **OPEN** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP. _____

[57] **PLACE** control switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to OPEN, **AND**

RELEASE. _____

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

6.1 Valve 2-FCV-63-3 Logic Test (continued)

[58] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT open. _____

[59] **CLOSE** valve 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP. _____

[60] **PLACE** control switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to OPEN, **AND**

RELEASE. _____

[61] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, did NOT open. _____

[62] **CLOSE** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP. _____

[63] **PLACE** control switch 2-HS-63-3A, SI PMPS RECIRC HDR TO RWST, to OPEN, **AND**

RELEASE. _____

[64] **VERIFY** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, OPENS (**Acc Crit** 5.0G). _____

[65] **CLOSE** the following valves:

A. 2-FCV-63-3, SIS PUMPS RECIRC TO RWST _____

B. 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A _____

C. 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B _____

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

6.2 Valve 2-FCV-63-26 Logic Test

CAUTION

Opening valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.2 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-26, [A11W/713] SIS BORON INJ TNK SHT OFF VLV. _____

[4] **ENSURE** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2086 _____

B. FD2087 _____

[6] **VERIFY** ICS point FD2087 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2086 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-26, SIS BORON INJ TANK SHUTOFF VLV TRF, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.2 Valve 2-FCV-63-26 Logic Test (continued)

[11] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, did NOT open. _____

[12] **PLACE** Hand Switch 2-HS-63-26A, BIT OUTLET, to OPEN and while valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, is opening,

PLACE Hand Switch 2-HS-63-26A, BIT OUTLET, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-26A, BIT OUTLET, red light ON. _____

B. 2-HS-63-26A, BIT OUTLET, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2087 displays "NOT CLS". _____

[15] **PLACE** Hand Switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-26A, BIT OUTLET, to CLOSE and while valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, is closing,

PLACE Hand Switch 2-HS-63-26A, BIT OUTLET, to OPEN, **AND**

RELEASE. _____

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

6.2 Valve 2-FCV-63-26 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-26A, BIT OUTLET, red light OFF. _____

B. 2-HS-63-26A, BIT OUTLET, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-26, SIS BORON INJ TANK SHUTOFF VLV TRF, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-26A, BIT OUTLET, red light OFF. _____

B. 2-HS-63-26A, BIT OUTLET, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-26A, BIT OUTLET, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, did NOT open. _____

NOTE

Stop watch timing of valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, stroke time will be done from control switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL, AND simultaneously time valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, stroke. _____

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

6.2 Valve 2-FCV-63-26 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, open stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, open stroke time.

Local

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, red light ON. _____

B. 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-26A, BIT OUTLET, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, did NOT close. _____

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

6.2 Valve 2-FCV-63-26 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, stroke time will be done from control switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL, AND simultaneously time valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, stroke. _____

[32] **RECORD** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, close stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, close stroke time.

Local

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

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

6.2 Valve 2-FCV-63-26 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, red light OFF. _____

B. 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 11D (2-BKR-63-26-A) at 480V RX MOV BD 2A1-A. _____

[36] **VERIFY** ICS point FD2086 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 11D (2-BKR-63-26-A) at 480V RX MOV BD 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 11D (2-BKR-63-26-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 11D (2-BKR-63-26-A) at 480V RX MOV BD 2A1-A. _____

[40] **PLACE** Hand Switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, did NOT open (**Acc Crit** 5.0A). _____

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

6.2 Valve 2-FCV-63-26 Logic Test (continued)

[42] **PRESS, AND**

HOLD the armature of K3 relay in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K3 relay armature. _____

[46] **OPEN** breaker 11D (2-BKR-63-26-A) at 480V MOV BD 2A1-A. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 11D (2-BKR-63-26-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 11D (2-BKR-63-26-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 11D (2-BKR-63-26-A) at 480V MOV BD 2A1-A. _____

[50] **CLOSE** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, by placing Hand Switch 2-HS-63-26C, SIS BORON INJ TANK SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.2 Valve 2-FCV-63-26 Logic Test (continued)

[51] **LOCATE** and **VERIFY** terminals TB602-1 and TB602-2 in the Panel to 2-R-48.

_____ 1st

_____ CV

[52] **INSTALL** a jumper across terminals TB602-1 and TB602-2 on the field side of the plastic isolators in the Panel to 2-R-48 (Simulate SI), **AND**

DOCUMENT on Appendix E. _____

[53] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, did NOT open (**Acc Crit** 5.0F.2). _____

[54] **PLACE** Transfer Switch 2-XS-63-26, SIS BORON INJ TANK SHUTOFF VLV TRF, to NORMAL. _____

[55] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

[56] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, opens (**Acc Crit** 5.0F.1). _____

[57] **LOCATE** and **VERIFY** terminals TB602-1 and TB602-2 in the Panel to 2-R-48.

_____ 1st

_____ CV

[58] **REMOVE** the jumper across the terminals TB-602-1 and TB602-2 in Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[59] **VERIFY** valve 2-FCV-63-26, SIS BORON INJ TNK SHT OFF VLV, remains **OPEN** (**Acc Crit** 5.0F.1). _____

[60] **PLACE** Hand Switch 2-HS-63-26A, BIT OUTLET, to CLOSE, **AND**

RELEASE. _____

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

6.3 Valve 2-FCV-63-118 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.3 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and valve 2-FCV-63-118, [IC/716 AZ40] SIS ACCUM TK 1 FLOW ISOLATION VLV. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, OPEN _____

B. 2-FCV-63-98, [IC/722 AZ142] SIS ACCUM TK 2 FLOW ISOLATION VLV, OPEN _____

C. 2-FCV-63-80, [IC/716 AZ215] SIS ACCUM TK 3 FLOW ISOLATION VLV, OPEN _____

D. 2-FCV-63-67, [IC/730 AZ320] SIS ACCUM TK 4 FLOW ISOLATION VLV, OPEN _____

[5] **ENSURE** that 2-HS-63-118A, CL ACCUM 1 OUTLET, is in A AUTO. _____

[6] **ENSURE** that 2-HS-63-118A, CL ACCUM 1 OUTLET, has indication. _____

[7] **ENSURE** that 2-XS-63-118,SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, is in AUX. _____

[8] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, ALARMS. _____

[9] **ENSURE** that breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A, is OPEN. _____

[10] **OPEN** compartment door for compartment 8D of 480V RX MOV BD 2A1-A. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.3[11] through 6.3[19].

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

[12] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[13] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs. _____

NOTE

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

[14] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV. _____ 1st _____ CV

[15] **REMOVE** the thermal overloads for 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[16] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs. _____ 1st _____ CV

[17] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged. _____

[18] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[19] **ENGAGE** the compartment locking devices at the top and bottom of the compartment. _____ 1st _____ CV

[20] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2A1-A. _____

[21] **CLOSE** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.3[22] through 6.3[24].

[22] **OPEN** compartment door for compartment 8D of 480V REACTOR MOV 2A1-A with the breaker closed by using the screw-driven defeater. _____

[23] **VERIFY** the red LED on the BFD is lit indicating the phase rotation for the BFD is correct. _____

[24] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2A1-A. _____

[25] **OPEN** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

[26] **OPEN** compartment door for compartment 8D of 480V REACTOR MOV 2A1-A. _____

[27] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-A18/32 in compartment 8D of 480V REACTOR MOV 2A1-A. _____ 1st _____ CV

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for step 6.3[28].

[28] **REMOVE** the A Phase penetration fuse of 2-FU-213-A18/32 in compartment 8D of 480V REACTOR MOV 2A1-A, **AND**

DOCUMENT on Appendix B. _____

[29] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2A1-A. _____

[30] **CLOSE** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

[31] **PLACE** 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[32] **ENSURE** that 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, is in NORMAL. _____

[33] **ENSURE** that 2-HS-63-118A, CL ACCUM 1 OUTLET, has no indication. _____

[34] **ENSURE** that 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, is in AUX. _____

[35] **PLACE** a handheld jumper across the terminal block points 4 (8DO1) to point 6 (8DO2) in the back of compartment 8D of 480V REACTOR MOV 2A1-A. _____

1st

_____

CV

[36] **PLACE** 2-HS-63-118C, SIS ACCUM TK 1FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[37] **VERIFY** that breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A trips OPEN. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[38] **OPEN** compartment door for compartment 8D of 480V REACTOR MOV 2A1-A. _____

[39] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-A18/32 in compartment 8D of 480V REACTOR MOV 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.3[40] through 6.3[43].

[40] **REINSTALL** the A Phase penetration fuse of 2-FU-213-A18/32 in compartment 8D of 480V REACTOR MOV 2A1-A, **AND**

DOCUMENT on Appendix B. _____

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

[42] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[43] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs. _____ 1st _____ CV

[44] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV. _____ 1st _____ CV

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

NOTE

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

[45] **REINSTALL** the thermal overloads for 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[46] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs.

_____ 1st

_____ CV

[47] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged.

_____ 1st

_____ CV

[48] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____

[49] **ENGAGE** the compartment locking devices at the top and bottom of the compartment.

_____ 1st

_____ CV

[50] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2A1-A. _____

[51] **CLOSE** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

[52] **PLACE** 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, in NORMAL. _____

[53] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is clear. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[54] **ENSURE** that 2-HS-63-118A, CL ACCUM 1 OUTLET, has indication. _____

[55] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2096 _____

B. FD2097 _____

[56] **VERIFY** ICS point FD2097 displays "OPEN". _____

[57] **VERIFY** ICS point FD2096 displays "PWR ON". _____

[58] **ENSURE** Transfer Switch 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, and AUX CONTROL SWITCH 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, are in NORMAL. _____

[59] **PLACE** Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[60] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT close (**Acc Crit**. 5.0Y). _____

[61] **PLACE** Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to CLOSE, AND while valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, is closing,

PLACE Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to OPEN, **AND**

RELEASE. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[62] **VERIFY** the following indications:

A. 2-HS-63-118A, CL ACCUM 1 OUTLET, red light OFF. _____

B. 2-HS-63-118A, CL ACCUM 1 OUTLET, green light ON. _____

C. Valve is CLOSED (Local). _____

[63] **VERIFY** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, alarms (**Acc Crit** 5.0N). _____

[64] **VERIFY** Unit 2 Alarm display, 131-C FCV-63-118 NOT OPEN ABOVE P-11 CLA 1, Alarm. _____

[65] **VERIFY** ICS point FD2097 displays "NOT OPE". _____

[66] **PLACE** Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[67] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT open (**Acc Crit**. 5.0Y). _____

[68] **PLACE** Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to OPEN, AND while valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, is opening,

PLACE Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to CLOSE, **AND**

RELEASE. _____

[69] **VERIFY** the following indications:

A. 2-HS-63-118A, CL ACCUM 1 OUTLET, red light ON. _____

B. 2-HS-63-118A, CL ACCUM 1 OUTLET, green light OFF. _____

C. Valve is OPEN (Local). _____

[70] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is clear. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[71] **VERIFY** Unit 2 Alarm display, 131-C FCV-63-118 NOT OPEN ABOVE P-11 CLA 1, NORMAL. _____

[72] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[73] **PLACE** Transfer Switch 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, to AUX. _____

[74] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[75] **VERIFY** the following indications:

A. 2-HS-63-118A, CL ACCUM 1 OUTLET, red light OFF. _____

B. 2-HS-63-118A, CL ACCUM 1 OUTLET, green light OFF. _____

[76] **PLACE** Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to CLOSE, **AND**

RELEASE. _____

[77] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT close (**Acc. Crit**. 5.0Y). _____

NOTE

Stop watch timing of valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, stroke time will be done from control switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, and locally at the valve.

[78] **PLACE** Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL AND simultaneously time valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, stroke. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[79] **RECORD** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, close stroke time.

Hand Switch

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[80] **RECORD** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW I SOLATION VLV, close stroke time.

Local

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[81] **VERIFY** the following indications:

A. 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[82] **PLACE** Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to OPEN, **AND**

RELEASE. _____

[83] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT open (**Acc. Crit**. 5.0Y). _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, stroke time will be done from control switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, and locally at the valve.

[84] **PLACE** Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL, AND simultaneously time valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, stroke. _____

[85] **RECORD** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, open stroke time.

Hand Switch

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[86] **RECORD** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, open stroke time.

Local

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[87] **VERIFY** the following indications:

A. 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[88] **PLACE** Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to normal. _____

[89] **PRESS, AND**

RELEASE 2-HS-63-118B OPEN pushbutton, and while the valve is opening,

PRESS, AND

RELEASE 2-HS-63-118B STOP pushbutton. _____

[90] **VERIFY** the following indications:

A. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

[91] **PRESS, AND**

RELEASE 2-HS-63-118B OPEN pushbutton. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[92] **VERIFY** the following indications:

A. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, green light OFF. _____

C. Valve OPEN (Local). _____

[93] **PRESS, AND**

RELEASE 2-HS-63-118B CLOSE pushbutton, and while the valve is closing

PRESS, AND

RELEASE 2-HS-63-118B STOP pushbutton. _____

[94] **VERIFY** the following indications:

A. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

[95] **PRESS, AND**

RELEASE 2-HS-63-118B CLOSE pushbutton. _____

[96] **VERIFY** the following indications:

A. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-118B, SIS ACCUM TK 1 FLOW ISOLATION VLV, green light ON. _____

C. Valve CLOSED (Local). _____

[97] **OPEN** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[98] **VERIFY** ICS point FD2096 displays "PWR OFF". _____

[99] **LOCATE** and **VERIFY** both wires (wire 2) off the common terminal on the overload relay from breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[100] **LIFT** both wires (wire 2) off the common terminal on the overload relay from breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[101] **CLOSE** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

[102] **PLACE** Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[103] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT open (**Acc Crit** 5.0A). _____

[104] **PRESS, AND**

HOLD the armature of relay K4 in the back of Panel 4F at 480V RX MOV BD 2A1-A to simulate an Overload Bypass Condition. _____

[105] **PLACE** Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[106] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, opens (**Acc Crit** 5.0A). _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[107] **RELEASE** K4 relay armature. _____

[108] **OPEN** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

[109] **LOCATE** and **VERIFY** both wires (wire 2) off the common terminal on the overload relay from breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[110] **RECONNECT** both wires (wire 2) on the common terminal on the overload relay of breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[111] **CLOSE** breaker 8D (2-BKR-63-118B-A) at 480V RX MOV BD 2A1-A. _____

[112] **CLOSE** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, by placing Hand Switch 2-HS-63-118C, SIS ACCUM TK 1 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[113] **PLACE** Transfer Switch 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, to NORMAL. _____

[114] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

[115] **LOCATE** and **VERIFY** terminals TB649-9 and TB649-10, Panel 2-R-48. _____

1st

_____

CV

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[116] **INSTALL** a jumper across terminals TB649-9 and TB649-10, Panel 2-R-48 on the field side of the plastic isolators (Open valve above P-11), **AND**

DOCUMENT on Appendix E. _____

[117] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, opens (Local). _____

[118] **LOCATE** and **VERIFY** terminals TB649-9 and TB649-10, Panel 2-R-48. _____ 1st _____ CV

[119] **REMOVE** the jumper across terminals TB649-9 and TB649-10, Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[120] **PLACE** Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to CLOSE, **AND**

RELEASE. _____

[121] **PLACE** Transfer Switch 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, to AUX. _____

[122] **LOCATE** and **VERIFY** terminals TB602-5 and TB602-6, Panel 2-R-48. _____ 1st _____ CV

[123] **INSTALL** a jumper across terminals TB602-5 and TB602-6, Panel 2-R-48 on the field side of the plastic isolators (SI signal), **AND**

DOCUMENT on Appendix E. _____

[124] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT open. _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[125] **PLACE** Transfer Switch 2-XS-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV TRF, to NORMAL. _____

[126] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, opens (**Acc Crit** 5.0L). _____

[127] **LOCATE** and **VERIFY** terminals TB602-5 and TB602-6, Panel 2-R-48.

_____ 1st

_____ CV

[128] **REMOVE** the jumper across terminals TB602-5 and TB602-6, Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[129] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, remains open (**Acc Crit** 5.0L). _____

[130] **LOCATE** and **VERIFY** terminals TB602-11 and TB602-12, Panel 2-R-48.

_____ 1st

_____ CV

[131] **REMOVE** the jumper across the terminals TB602-11 and TB602-12, Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[132] **PLACE** Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to CLOSE, **AND**

RELEASE. _____

[133] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT close (**Acc Crit** 5.0L). _____

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

6.3 Valve 2-FCV-63-118 Logic Test (continued)

[134] **LOCATE** and **VERIFY** terminals TB602-11 and TB602-12, Panel 2-R-48.

_____ 1st

_____ CV

[135] **REPLACE** jumper across the terminals TB602-11 and TB602-12, Panel 2-R-48 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

[136] **OPEN** 480V Reac. MOV BD 2A1-A breaker at Compt. 3F2 (2-BKR-63-118B-A). _____

[137] **PLACE** Hand Switch 2-HS-63-118A, CL ACCUM 1 OUTLET, to CLOSE, **AND**

RELEASE. _____

[138] **VERIFY** valve 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, did NOT close. _____

[139] **CLOSE** 480V Reac. MOV BD 2A1-A breaker at Compt. 3F2 (2-BKR-63-118B-A). _____

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

6.4 Valve 2-FCV-63-80 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.4 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, OPEN _____

B. 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, OPEN _____

C. 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV, OPEN _____

D. 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, OPEN _____

[5] **ENSURE** that 2-HS-63-80A, CL ACCUM 3 OUTLET, is in A AUTO. _____

[6] **ENSURE** that 2-HS-63-80A, CL ACCUM 3 OUTLET, has indication. _____

[7] **ENSURE** that 2-XS-63-80,SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, is in AUX. _____

[8] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, ALARMS. _____

[9] **ENSURE** that breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A, is OPEN. _____

[10] **OPEN** compartment door for compartment 7D of 480V RX MOV BD 2A1-A. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.4[11] through 6.4[19].

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

[12] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[13] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs. _____

[14] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV. _____ 1st _____ CV

NOTE

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

[15] **REMOVE** the thermal overloads for 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[16] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs. _____ 1st _____ CV

[17] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged. _____

[18] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[19] **ENGAGE** the compartment locking devices at the top and bottom of the compartment. _____ 1st _____ CV

[20] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2A1-A. _____

[21] **CLOSE** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.4[22] through 6.4[24].

[22] **OPEN** compartment door for compartment 7D of 480V REACTOR MOV 2A1-A with the breaker closed by using the screw-driven defeater. _____

[23] **VERIFY** the red LED on the BFD is lit indicating the phase rotation for the BFD is correct. _____

[24] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2A1-A. _____

[25] **OPEN** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

[26] **OPEN** compartment door for compartment 7D of 480V REACTOR MOV 2A1-A. _____

[27] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-A17/32 in compartment 7D of 480V REACTOR MOV 2A1-A. _____ 1st _____ CV

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for step 6.4[28].

[28] **REMOVE** the A Phase penetration fuse of 2-FU-213-A17/32 in compartment 7D of 480V REACTOR MOV 2A1-A, **AND**

DOCUMENT on Appendix B. _____

[29] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2A1-A. _____

[30] **CLOSE** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

[31] **PLACE** 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[32] **ENSURE** that 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, is in NORMAL. _____

[33] **ENSURE** that 2-HS-63-80A, CL ACCUM 3 OUTLET, has no indication. _____

[34] **ENSURE** that 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, is in AUX. _____

[35] **PLACE** a handheld jumper across the terminal block points 3 (7DC1) to point 7 (7DC2) in the back of compartment 7D of 480V REACTOR MOV 2A1-A. _____

1st

_____

CV

[36] **PLACE** 2-HS-63-80C, SIS ACCUM TK 3FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[37] **VERIFY** that breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A trips OPEN. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[38] **OPEN** compartment door for compartment 7D of 480V REACTOR MOV 2A1-A. _____

[39] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-A17/32 in compartment 7D of 480V REACTOR MOV 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.4[40] through 6.4[49].

[40] **REINSTALL** the A Phase penetration fuse of 2-FU-213-A187/32 in compartment 7D of 480V REACTOR MOV 2A1-A, **AND**

DOCUMENT on Appendix B. _____

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

[42] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[43] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs.

_____ 1st

_____ CV

[44] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV.

_____ 1st

_____ CV

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

NOTE

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

[45] **REINSTALL** the thermal overloads for 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[46] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs.

_____ 1st

_____ CV

[47] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged.

_____ 1st

_____ CV

[48] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____

[49] **ENGAGE** the compartment locking devices at the top and bottom of the compartment.

_____ 1st

_____ CV

[50] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2A1-A. _____

[51] **CLOSE** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

[52] **PLACE** 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, in NORMAL. _____

[53] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is CLEAR. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[54] **ENSURE** that 2-HS-63-80A, CL ACCUM 3 OUTLET, has indication. _____

[55] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2094 _____

B. FD2095 _____

[56] **VERIFY** ICS point FD2095 displays "OPEN". _____

[57] **VERIFY** ICS point FD2094 displays "PWR ON". _____

[58] **ENSURE** Transfer Switch 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, and AUX CONTROL SWITCH 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, are in NORMAL. _____

[59] **PLACE** Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[60] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT close (**Acc Crit**. 5.0Y). _____

[61] **PLACE** Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to CLOSE and while valve 2-FCV-63-80 is closing,

PLACE Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to OPEN, **AND**

RELEASE. _____

[62] **VERIFY** the following indications:

A. 2-HS-63-80A, CL ACCUM 3 OUTLET, red light OFF. _____

B. 2-HS-63-80A, CL ACCUM 3 OUTLET, green light ON. _____

C. Valve is CLOSED (Local). _____

[63] **VERIFY** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, ALARMS (**Acc Crit** 5.0N). _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[64] **VERIFY** Unit 2 Alarm display, 131-C FCV-63-80 NOT OPEN ABOVE P-11 CLA 3, Alarm. _____

[65] **VERIFY** ICS point FD2095 displays "NOT OPE". _____

[66] **PLACE** Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[67] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT open (**Acc Crit**. 5.0Y). _____

[68] **PLACE** Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to OPEN and while valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, is opening,

PLACE Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to CLOSE, **AND**

RELEASE. _____

[69] **VERIFY** the following indications:

A. 2-HS-63-80A, CL ACCUM 3 OUTLET, red light ON. _____

B. 2-HS-63-80A, CL ACCUM 3 OUTLET, green light OFF. _____

C. Valve is OPEN (Local). _____

[70] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is clear. _____

[71] **VERIFY** Unit 2 Alarm display, 131-C FCV-63-80 NOT OPEN ABOVE P-11 CLA 3, NORMAL. _____

[72] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[73] **PLACE** Transfer Switch 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, to AUX. _____

[74] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[75] **VERIFY** the following indications:

A. 2-HS-63-80A, CL ACCUM 3 OUTLET, red light OFF. _____

B. 2-HS-63-80A, CL ACCUM 3 OUTLET, green light OFF. _____

[76] **PLACE** Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to CLOSE, **AND**

RELEASE. _____

[77] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT close (**Acc. Crit**. 5.0Y). _____

NOTE

Stop watch timing of valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, stroke time will be done from control switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, and locally at the valve.

[78] **PLACE** Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, stroke. _____

[79] **RECORD** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, close stroke time.

Hand Switch

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[80] **RECORD** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, close stroke time.

Local

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[81] **VERIFY** the following indications:

A. 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[82] **PLACE** Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to OPEN **AND**

RELEASE. _____

[83] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT open (**Acc. Crit**. 5.0Y). _____

NOTE

Stop watch timing of valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, stroke time will be done from control switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, and locally at the valve.

[84] **PLACE** Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-80 stroke. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[85] **RECORD** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, open stroke time.

Hand Switch

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[86] **RECORD** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, open stroke time.

Local

_____ seconds (expected less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[87] **VERIFY** the following indications:

A. 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[88] **PLACE** Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to CLOSE, **AND**

RELEASE. _____

[89] **DEPRESS, AND**

RELEASE 2-HS-63-80B OPEN pushbutton, and while the valve is opening,

DEPRESS, AND

RELEASE 2-HS-63-80B STOP pushbutton. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[90] **VERIFY** the following indications:

A. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

[91] **DEPRESS, AND**

RELEASE 2-HS-63-80B OPEN pushbutton. _____

[92] **VERIFY** the following indications:

A. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, green light OFF. _____

C. Valve **OPEN** (Local). _____

[93] **DEPRESS, AND**

RELEASE 2-HS-63-80B CLOSE pushbutton, and while the valve is closing

DEPRESS, AND

RELEASE 2-HS-63-80B STOP pushbutton. _____

[94] **VERIFY** the following indications:

A. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[95] **DEPRESS, AND**

RELEASE 2-HS-63-80B CLOSE pushbutton. _____

[96] **VERIFY** the following indications:

A. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-80B, SIS ACCUM TK 3 FLOW ISOLATION VLV, green light ON. _____

C. Valve CLOSED (Local). _____

[97] **OPEN** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

[98] **VERIFY** ICS point FD2094 displays "PWR OFF". _____

[99] **LOCATE** and **VERIFY** both wires (wire 2) off the common terminal on the overload relay from breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[100] **LIFT** both wires (wire 2) off the common terminal on the overload relay from breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[101] **CLOSE** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

[102] **PLACE** Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[103] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT open (**Acc Crit** 5.0A). _____

[104] **PRESS, AND**

HOLD the armature of relay K6 in the back of Panel 4F at 480V RX MOV BD 2A1-A to simulate an Overload Bypass Condition. _____

[105] **PLACE** Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[106] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, opens (**Acc Crit** 5.0A). _____

[107] **RELEASE** K6 relay armature. _____

[108] **OPEN** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

[109] **LOCATE** and **VERIFY** both wires (wire 2) on the common terminal on the overload relay of breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[110] **RECONNECT** both wires (wire 2) on the common terminal on the overload relay of breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[111] **CLOSE** breaker 7D (2-BKR-63-80B-A) at 480V RX MOV BD 2A1-A. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[112] **CLOSE** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, by placing Hand Switch 2-HS-63-80C, SIS ACCUM TK 3 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[113] **PLACE** Transfer Switch 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, to NORMAL. _____

[114] **VERIFY** Annunciator Window, 2-XA-55-6F-149-C "480 RX MOV BD 2A1-A/2A2-A XS IN AUX" CLEARS. _____

[115] **LOCATE** and **VERIFY** terminals TB649-11 and TB649-12, Panel 2-R-48.

_____ 1st

_____ CV

[116] **INSTALL** a jumper across terminals TB649-11 and TB649-12, Panel 2-R-48 on the field side of the plastic isolators (Open valve above P-11), **AND**

DOCUMENT on Appendix E. _____

[117] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, opens (Local). _____

[118] **LOCATE** and **VERIFY** terminals TB649-11 and TB649-12, Panel 2-R-48.

_____ 1st

_____ CV

[119] **REMOVE** the jumper across terminals TB649-11 and TB649-12, Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[120] **PLACE** Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to CLOSE, **AND**

RELEASE. _____

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[121] **PLACE** Transfer Switch 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, to AUX. _____

[122] **LOCATE** and **VERIFY** terminals TB621-7 and TB621-8, Panel 2-R-48. _____ 1st _____ CV

[123] **INSTALL** a jumper across terminals TB621-7 and TB621-8, Panel 2-R-48 on the field side of the plastic isolators (SI signal), **AND**

DOCUMENT on Appendix E. _____

[124] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT open. _____

[125] **PLACE** Transfer Switch 2-XS-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV TRF, to NORMAL. _____

[126] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, opens (**Acc Crit** 5.0L). _____

[127] **LOCATE** and **VERIFY** terminals TB621-7 and TB621-8, Panel 2-R-48. _____ 1st _____ CV

[128] **REMOVE** the jumper across terminals TB621-7 and TB621-8, Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[129] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, remains open (**Acc Crit** 5.0L). _____

[130] **LOCATE** and **VERIFY** terminals TB620-11 and TB620-12, Panel 2-R-48. _____ 1st _____ CV

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

6.4 Valve 2-FCV-63-80 Logic Test (continued)

[131] **REMOVE** the jumper across the terminals TB620-11 and TB620-12, Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[132] **PLACE** Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to CLOSE, **AND**

RELEASE. _____

[133] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT close (**Acc Crit** 5.0L). _____

[134] **LOCATE** and **VERIFY** terminals TB620-11 and TB620-12, Panel 2-R-48. _____ 1st _____ CV

[135] **REPLACE** jumper across the terminals TB620-11 and TB620-12, Panel 2-R-48 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

[136] **OPEN** 480V Reac. MOV BD 2A1-A breaker at compt. 17F2 (2-BKR-63-80-A). _____

[137] **PLACE** Hand Switch 2-HS-63-80A, CL ACCUM 3 OUTLET, to CLOSE, **AND**

RELEASE. _____

[138] **VERIFY** valve 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOL VLV, did NOT close. _____

[139] **CLOSE** 480V Reac. MOV BD 2A1-A breaker at Compt. 17F2 (2-BKR-63-80-A). _____

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

6.5 Valve 2-FCV-63-7 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.5 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-7, [A11V/692] SIS PUMP INLET TO CVCS CHG PMP. _____

[4] **ENSURE** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2076 _____

B. FD2077 _____

[6] **VERIFY** ICS point FD2077 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2076 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-7, SIS PUMP INLET TO CVCS CHG PUMP TRF, is in NORMAL. _____

[9] **ENSURE** AUX Control Switch, 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, did NOT open. _____

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

6.5 Valve 2-FCV-63-7 Logic Test (continued)

[12] **PLACE** Hand Switch 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN and while valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, is opening,

PLACE Hand Switch 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, red light ON. _____

B. 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2077 displays "NOT CLS". _____

[15] **PLACE** Hand Switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE and while valve 2-FCV-63-7 is closing,

PLACE Hand Switch 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN **AND**

RELEASE. _____

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

6.5 Valve 2-FCV-63-7 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-7, SIS PUMP INLET TO CVCS CHG PUMP TRF, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, did NOT open. _____

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

6.5 Valve 2-FCV-63-7 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, stroke time will be done from control switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, stroke. _____

[26] **RECORD** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, open stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.5 Valve 2-FCV-63-7 Logic Test (continued)

[27] **RECORD** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, open stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, red light ON. _____

B. 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-7A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, did NOT close. _____

NOTE

Stop watch timing of valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, stroke time will be done from control switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE **AND**

RETURN to NORMAL, AND simultaneously time valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, stroke. _____

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

6.5 Valve 2-FCV-63-7 Logic Test (continued)

[32] **RECORD** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[33] **RECORD** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[34] **VERIFY** the following indications:

A. 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, red light OFF. _____

B. 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A. _____

[36] **VERIFY** ICS point FD2076 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

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

6.5 Valve 2-FCV-63-7 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A. _____

[40] **PLACE** Hand Switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, did NOT open (**Acc Crit** 5.0A). _____

[42] **PRESS, AND**

HOLD the armature of relay K6 in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K6 relay armature. _____

[46] **OPEN** breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A. _____

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

6.5 Valve 2-FCV-63-7 Logic Test (continued)

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 11A (2-BKR-63-7-A) at 480V RX MOV BD 2A1-A. _____

[50] **CLOSE** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PMP, by placing Hand Switch 2-HS-63-7C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-7, SIS PUMP INLET TO CVCS CHG PUMP TRF, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

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

6.6 Valve 2-FCV-63-47 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.6 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-47, [A10V/692] SIS PUMP A-A INLET VLV. _____

[4] **ENSURE** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2074 _____

B. FD2075 _____

[6] **VERIFY** ICS point FD2075 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2074 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-47, SIS PUMP A-A INLET VLV TRF, is in NORMAL. _____

[9] **ENSURE** AUX Control Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, did NOT open (**Acc Crit**. 5.0Y). _____

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

6.6 Valve 2-FCV-63-47 Logic Test (continued)

[12] **PLACE** Hand Switch 2-HS-63-47A, SI PMP A SUCTION, to OPEN and while valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, is opening,

PLACE Hand Switch 2-HS-63-47A, SI PMP A SUCTION, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-47A, SI PMP A SUCTION, red light ON. _____

B. 2-HS-63-47A, SI PMP A SUCTION, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2075 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, did NOT close (**Acc Crit**. 5.0Y). _____

[17] **PLACE** Hand Switch 2-HS-63-47A, SI PMP A SUCTION, to CLOSE and while valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, is closing,

PLACE Hand Switch 2-HS-63-47A, SI PMP A SUCTION, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-47A, SI PMP A SUCTION, red light OFF. _____

B. 2-HS-63-47A, SI PMP A SUCTION, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.6 Valve 2-FCV-63-47 Logic Test (continued)

[19] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-47, SIS PUMP A-A INLET VLV TRF, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-47A, SI PMP A SUCTION, red light OFF. _____

B. 2-HS-63-47A, SI PMP A SUCTION, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-47A, SI PMP A SUCTION, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, did NOT open (**Acc. Crit**. 5.0Y). _____

NOTE

Stop watch timing of valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, stroke time will be done from control switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, stroke. _____

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

6.6 Valve 2-FCV-63-47 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, OPEN stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (expected less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[27] **RECORD** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, OPEN stroke time.

Local

_____ seconds (expected less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-47C, SIS PUMP A-A INLET VLV, red light ON. _____

B. 2-HS-63-47C, SIS PUMP A-A INLET VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-47A, SI PMP A SUCTION, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, did NOT close (**Acc. Crit**. 5.0Y). _____

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

6.6 Valve 2-FCV-63-47 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, stroke time will be done from control switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, to CLOSE, **AND**

RELEASE and simultaneously time valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, stroke. _____

[32] **RECORD** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, CLOSE stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (expected less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, CLOSE stroke time.

Local

_____ seconds (expected less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____

[34] **VERIFY** the following indications:

A. 2-HS-63-47C, SIS PUMP A-A INLET VLV, red light OFF. _____

B. 2-HS-63-47C, SIS PUMP A-A INLET VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.6 Valve 2-FCV-63-47 Logic Test (continued)

[35] **OPEN** breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A. _____

[36] **VERIFY** ICS point FD2074 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A. _____

1st _____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A. _____

[40] **PLACE** Hand Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, did NOT open (**Acc Crit** 5.0A). _____

[42] **PRESS, AND**

HOLD the armature of relay K3 in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.6 Valve 2-FCV-63-47 Logic Test (continued)

[44] **VERIFY** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K3 relay armature. _____

[46] **OPEN** breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 12A (2-BKR-63-47-A) at 480V RX MOV BD 2A1-A. _____

[50] **CLOSE** valve 2-FCV-63-47, SIS PUMP A-A INLET VLV, by placing Hand Switch 2-HS-63-47C, SIS PUMP A-A INLET VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-47, SIS PUMP A-A INLET VLV TRF, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

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

6.7 Valve 2-FCV-63-152 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.7 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-152, [A11W/713] SIS PMP A-A OUT FLOW CNTL VLV. _____

[4] **ENSURE** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2078 _____

B. FD2079 _____

[6] **VERIFY** ICS point FD2079 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2078 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-152, SIS PMP A-A OUT FLOW CNTL VLV TRF, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-152C is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, did NOT open (**Acc Crit**. 5.0Y). _____

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

6.7 Valve 2-FCV-63-152 Logic Test (continued)

[12] **PLACE** Hand Switch 2-HS-63-152A, SI PMP TO CL 1-2-3-4, to OPEN and while valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, is opening,

PLACE Hand Switch 2-HS-63-152A, SI PMP TO CL 1-2-3-4, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-152A, SI PMP TO CL 1-2-3-4, red light ON. _____

B. 2-HS-63-152A, SI PMP TO CL 1-2-3-4, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2079 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, did NOT close (**Acc Crit.** 5.0Y). _____

[17] **PLACE** Hand Switch 2-HS-63-152A, SI PMP TO CL 1-2-3-4, to CLOSE and while valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, is closing,

PLACE Hand Switch 2-HS-63-152A, SI PMP TO CL 1-2-3-4, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-152A, SI PMP TO CL 1-2-3-4, red light OFF. _____

B. 2-HS-63-152A, SI PMP TO CL 1-2-3-4, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.7 Valve 2-FCV-63-152 Logic Test (continued)

[19] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-152, SIS PMP A-A OUT FLOW CNTL VLV TRF, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-152A, SI PMP TO CL 1-2-3-4, red light OFF. _____

B. 2-HS-63-152A, SI PMP TO CL 1-2-3-4, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-152A, SI PMP TO CL 1-2-3-4, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, did NOT open (**Acc. Crit**. 5.0Y.) _____

NOTE

Stop watch timing of valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, stroke time will be done from control switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, stroke. _____

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

6.7 Valve 2-FCV-63-152 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, OPEN stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (expected less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, OPEN stroke time.

Local

_____ seconds (expected less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, red light ON. _____

B. 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-152A, SI PMP TO CL 1-2-3-4, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, did NOT close (**Acc. Crit**. 5.0Y). _____

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

6.7 Valve 2-FCV-63-152 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, stroke time will be done from control switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, stroke. _____

[32] **RECORD** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, CLOSE stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, CLOSE stroke time.

Local

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

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

6.7 Valve 2-FCV-63-152 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, red light OFF. _____

B. 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 12E (2-BKR-63-152-A) at 480V RX MOV BD 2A1-A. _____

[36] **VERIFY** ICS point FD2078 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12E (2-BKR-63-152-A) at 480V RX MOV BD 2A1-A. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 12E (2-BKR-63-152-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 12E (2-BKR-63-152-A) at 480V RX MOV BD 2A1-A. _____

[40] **PLACE** Hand Switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, did NOT open (**Acc Crit** 5.0A). _____

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

6.7 Valve 2-FCV-63-152 Logic Test (continued)

[42] **PRESS, AND**

HOLD the armature of relay K4 in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K4 relay armature. _____

[46] **OPEN** breaker 12E at (2-BKR-63-152-A) 480V RX MOV BD 2A1-A. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12E (2-BKR-63-152-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 12E (2-BKR-63-152-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 12E (2-BKR-63-152-A) at 480V RX MOV BD 2A1-A. _____

[50] **CLOSE** valve 2-FCV-63-152, SIS PMP A-A OUT FLOW CNTL VLV, by placing Hand Switch 2-HS-63-152C, SIS PMP A-A OUT FLOW CNTL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.7 Valve 2-FCV-63-152 Logic Test (continued)

[51] **PLACE** Transfer Switch 2-XS-63-152, SIS PMP A-A OUT FLOW CNTL VLV TRF, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

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

6.8 Valve 2-FCV-63-93 Logic Test

CAUTION

Opening valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.8 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-93, [A11W/713] RHR TO RCS 2&3 FLOW CONTROL VLV. _____

[4] **ENSURE** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2092 _____

B. FD2093 _____

[6] **VERIFY** ICS point FD2093 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2092 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV TRF, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

[11] **VERIFY** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, did NOT open. _____

[12] **PLACE** Hand Switch 2-HS-63-93A, RHR TO CL 2 & 3, to OPEN and while valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, is opening,

PLACE Hand Switch 2-HS-63-93A, RHR TO CL 2 & 3, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-93A, RHR TO CL 2 & 3, red light ON. _____

B. 2-HS-63-93A, RHR TO CL 2 & 3, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2093 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-93A, RHR TO CL 2 & 3, to CLOSE and while valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, is closing,

PLACE Hand Switch 2-HS-63-93A, RHR TO CL 2 & 3, to OPEN, **AND**

RELEASE. _____

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-93A, RHR TO CL 2 & 3, red light OFF. _____

B. 2-HS-63-93A, RHR TO CL 2 & 3, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV TRF, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-93A, RHR TO CL 2 & 3, red light OFF. _____

B. 2-HS-63-93A, RHR TO CL 2 & 3, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-93A, RHR TO CL 2 & 3, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, did NOT open. _____

NOTE

Stop watch timing of valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, stroke time will be done from control switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, stroke. _____

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, OPEN stroke time.

Local

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-93A, RHR TO CL 2 & 3, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, did NOT close. _____

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, stroke time will be done from control switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, stroke. _____

[32] **RECORD** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, CLOSE stroke time.

Local

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, red light OFF. _____

B. 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **PRESS, AND**

RELEASE 2-HS-63-93B OPEN pushbutton, and while the valve is opening,

PRESS, AND

RELEASE 2-HS-63-93B STOP pushbutton. _____

[36] **VERIFY** the following indications:

A. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, green light ON. _____

C. Valve mid-position (Local). _____

[37] **PRESS, AND**

RELEASE 2-HS-63-93B OPEN pushbutton. _____

[38] **VERIFY** the following indications:

A. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, green light OFF. _____

C. Valve OPEN (Local). _____

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

[39] **PRESS, AND**

RELEASE 2-HS-63-93B CLOSE pushbutton, and while the valve is closing,

PRESS, AND

RELEASE 2-HS-63-93B STOP pushbutton. _____

[40] **VERIFY** the following indications:

A. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, green light ON. _____

C. Valve mid-position (Local). _____

[41] **PRESS, AND**

RELEASE 2-HS-63-93B CLOSE pushbutton. _____

[42] **VERIFY** the following indications:

A. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, red light OFF. _____

B. 2-HS-63-93B, RHR TO RCS 2&3 FLOW CONTROL VLV, green light ON. _____

C. Valve CLOSED (Local). _____

[43] **OPEN** breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A. _____

[44] **VERIFY** ICS point FD2092 displays "PWR OFF". _____

[45] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[46] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[47] **CLOSE** breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A. _____

[48] **PLACE** Hand Switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[49] **VERIFY** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, did NOT open (**Acc Crit** 5.0A). _____

[50] **PRESS, AND**

HOLD the armature of relay K4 in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[51] **PLACE** Hand Switch 2-HS-63-93C, RHR TO RCS 2&3 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[52] **VERIFY** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, OPENS (**Acc Crit** 5.0A). _____

[53] **RELEASE** K4 relay armature. _____

[54] **OPEN** breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A. _____

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

6.8 Valve 2-FCV-63-93 Logic Test (continued)

[55] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[56] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[57] **CLOSE** breaker 12D (2-BKR-63-93-A) at 480V RX MOV BD 2A1-A. _____

[58] **CLOSE** valve 2-FCV-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV, by placing Hand Switch 2-HS-63-93C to CLOSE, **AND**

RETURN to NORMAL. _____

[59] **PLACE** Transfer Switch 2-XS-63-93, RHR TO RCS 2&3 FLOW CONTROL VLV TRF, to NORMAL. _____

[60] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

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

6.9 Valve 2-FCV-63-156 Logic Test

CAUTION

Opening valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.9 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-156, [A11W/713] SIS PUMP OUT RCS LP 1&3 H L. _____

[4] **ENSURE** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2080 _____

B. FD2081 _____

[6] **VERIFY** ICS point FD2081 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2080 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-156, SIS PUMP OUT RCS LP 1&3 H L, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.9 Valve 2-FCV-63-156 Logic Test (continued)

[11] **VERIFY** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, did NOT open (**Acc Crit**. 5.0Y). _____

[12] **PLACE** Hand Switch 2-HS-63-156A, SI PMP A TO HL 1 & 3, to OPEN and while valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, is opening,

PLACE Hand Switch 2-HS-63-156A, SI PMP A TO HL 1 & 3, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-156A, SI PMP A TO HL 1 & 3, red light ON. _____

B. 2-HS-63-156A, SI PMP A TO HL 1 & 3, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2081 displays "NOT CLS". _____

[15] **PLACE** Hand Switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, did NOT close (**Acc Crit**. 5.0Y). _____

[17] **PLACE** Hand Switch 2-HS-63-156A, SI PMP A TO HL 1 & 3, to CLOSE and while valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, is closing,

PLACE Hand Switch 2-HS-63-156A, SI PMP A TO HL 1 & 3, to OPEN, **AND**

RELEASE. _____

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

6.9 Valve 2-FCV-63-156 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-156A, SI PMP A TO HL 1 & 3, red light OFF. _____

B. 2-HS-63-156A, SI PMP A TO HL 1 & 3, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-156, SIS PUMP OUT RCS LP 1&3 H L, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-156A, SI PMP A TO HL 1 & 3, red light OFF. _____

B. 2-HS-63-156A, SI PMP A TO HL 1 & 3, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-156A, SI PMP A TO HL 1 & 3, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, did NOT open (**Acc. Crit** 5.0Y). _____

NOTE

Stop watch timing of valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, stroke time will be done from control switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, stroke. _____

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

6.9 Valve 2-FCV-63-156 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, OPEN stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (expected less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, OPEN stroke time.

Local

_____ seconds (expected less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, red light ON. _____

B. 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-156A, SI PMP A TO HL 1 & 3, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, did NOT close (**Acc. Crit** 5.0Y). _____

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

6.9 Valve 2-FCV-63-156 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, stroke time will be done from control switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, stroke. _____

[32] **RECORD** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, CLOSE stroke time (**Acc Crit** 5.0B).

Hand Switch

_____ seconds (expected less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, CLOSE stroke time.

Local

_____ seconds (expected less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____

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

6.9 Valve 2-FCV-63-156 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, red light OFF. _____

B. 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A. _____

[36] **VERIFY** ICS point FD2080 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A. _____

[40] **PLACE** Hand Switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, did NOT open (**Acc Crit** 5.0A). _____

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

6.9 Valve 2-FCV-63-156 Logic Test (continued)

[42] **PRESS, AND**

HOLD the armature of relay K4 in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K4 relay armature. _____

[46] **OPEN** breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 13A (2-BKR-63-156-A) at 480V RX MOV BD 2A1-A. _____

[50] **CLOSE** valve 2-FCV-63-156, SIS PUMP OUT RCS LP 1&3 H L, by placing Hand Switch 2-HS-63-156C, SIS PUMP OUT RCS LP 1&3 H L, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.9 Valve 2-FCV-63-156 Logic Test (continued)

[51] **PLACE** Transfer Switch 2-XS-63-156, SIS PUMP OUT RCS LP 1&3 H L, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX XS IN AUX, CLEARS. _____

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

6.10 Valve 2-FCV-63-177 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.10 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-177, [A11V/692] SIS PUMP INLET TO CVCS CHG PMP. _____

[4] **ENSURE** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-177, SIS PUMP INLET TO CVCS CHG PMP, is in NORMAL. _____

[6] **ENSURE** AUX CONTROL SWITCH 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, is in NORMAL. _____

[7] **PLACE** Hand Switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[8] **VERIFY** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, did NOT open. _____

[9] **PLACE** Hand Switch 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN and while valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, is opening,

PLACE Hand Switch 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

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

6.10 Valve 2-FCV-63-177 Logic Test (continued)

[10] **VERIFY** the following indications:

A. 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, red light ON. _____

B. 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, green light OFF. _____

C. Valve is OPEN (Local). _____

[11] **PLACE** Hand Switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL. _____

[12] **VERIFY** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE and while valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, is closing,

PLACE Hand Switch 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-177, SIS PUMP INLET TO CVCS CHG PMP, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

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

6.10 Valve 2-FCV-63-177 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[20] **VERIFY** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, did NOT open. _____

NOTE

Stop watch timing of valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, stroke time will be done from control switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, stroke. _____

[22] **RECORD** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, OPEN stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.10 Valve 2-FCV-63-177 Logic Test (continued)

[23] **RECORD** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, OPEN stroke time.

Local

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, red light ON. _____

B. 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-177A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE **AND**

RELEASE. _____

[26] **VERIFY** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, did NOT close. _____

NOTE

Stop watch timing of valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, stroke time will be done from control switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, and locally at the valve.

[27] **PLACE** Hand Switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, stroke. _____

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

6.10 Valve 2-FCV-63-177 Logic Test (continued)

[28] **RECORD** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[29] **RECORD** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, red light OFF. _____

B. 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, green light ON. _____

C. Valve is CLOSED (Local). _____

[31] **OPEN** breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A. _____

[32] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

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

6.10 Valve 2-FCV-63-177 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[33] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[34] **CLOSE** breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A. _____

[35] **PLACE** Hand Switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[36] **VERIFY** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, did NOT open (**Acc Crit** 5.0A). _____

[37] **PRESS, AND**

HOLD the armature of relay K4 in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[38] **PLACE** Hand Switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[39] **VERIFY** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, OPENS (**Acc Crit** 5.0A). _____

[40] **RELEASE** K4 relay armature. _____

[41] **OPEN** breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A. _____

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

6.10 Valve 2-FCV-63-177 Logic Test (continued)

[42] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[43] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[44] **CLOSE** breaker 9B (2-BKR-63-177-A) at 480V RX MOV BD 2A1-A. _____

[45] **CLOSE** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHG PMP, by placing Hand Switch 2-HS-63-177C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL. _____

[46] **PLACE** Transfer Switch 2-XS-63-177, SIS PUMP INLET TO CVCS CHG PMP, to NORMAL. _____

[47] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

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

6.11 Valve 2-FCV-63-72 Logic Test

CAUTION

Opening valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.11 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

CAUTION

2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A-A, is located in the valve vault and requires a confined space entry permit and a safety observer.

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, CLOSED _____

B. 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP, CLOSED _____

C. 2-FCV-74-3, [A10V/676] SIS PUMPS RECIRC TO RWST, CLOSED _____

D. 2-FCV-72-40, [A11W/713] RHR SPRAY HDR A ISOLATION V, CLOSED _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2089 _____

B. FD2111 _____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[6] **VERIFY** ICS point FD2111 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2089 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-72, CNTMT SUMP TO RHR PUMP A-A, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT open. _____

[12] **PLACE** Hand Switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to OPEN and while valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, is opening,

PLACE Hand Switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, red light ON. _____

B. 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, green light OFF. _____

C. Valve is OPEN (Local) (**Acc Crit** 5.0I) _____

[14] **VERIFY** ICS point FD2111 displays "NOT CLS". _____

[15] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[16] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to CLOSE and while valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, is closing,

PLACE Hand Switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, red light OFF. _____

B. 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-72, CNTMT SUMP TO RHR PUMP A-A, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, red light OFF. _____

B. 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to OPEN, **AND**

RELEASE. _____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[24] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT open. _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to OPEN, **AND**

RETURN to NORMAL and simultaneously time the valve stroke. _____

[26] **RECORD** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, OPEN stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[27] **RECORD** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, OPEN stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[28] **VERIFY** the following indications:

A. 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, red light ON. _____

B. 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT close. _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, stroke. _____

[32] **RECORD** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[33] **RECORD** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, CLOSE stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[34] **VERIFY** the following indications:

A. 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, red light OFF. _____

B. 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A. _____

[36] **VERIFY** ICS point FD2089 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A. _____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[40] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT open (**Acc Crit** 5.0A). _____

[42] **PRESS, AND**

HOLD the armature of the K3 relay in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, opens (**Acc Crit** 5.0A). _____

[45] **RELEASE** the K3 relay armature. _____

[46] **OPEN** breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) to the common terminal on the overload relay of breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[49] **CLOSE** breaker 12B (2-BKR-63-72-A) at 480V RX MOV BD 2A1-A. _____

[50] **CLOSE** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, by placing Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to CLOSE, **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-72, CNTMT SUMP TO RHR PUMP A-A, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

[53] **LOCATE** and **VERIFY** terminals TB631-9 and TB631-10 in Panel 2-R-48.

_____ 1st

_____ CV

[54] **INSTALL** a jumper across terminals TB631-9 and TB631-10 on the field side of the plastic isolators in Panel 2-R-48 (Simulate SI RESET), **AND**

DOCUMENT on Appendix E. _____

[55] **VERIFY** the SI RESET light on panel 2-M-6 is ON. _____

[56] **LOCATE** and **VERIFY** terminals TB631-9 and TB631-10 in Panel 2-R-48.

_____ 1st

_____ CV

[57] **REMOVE** the jumper across terminals TB631-9 and TB631-10 on the field side of the plastic isolators in Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[58] **VERIFY** the SI RESET light on panel 2-M-6 is OFF. _____

[59] **OPEN** valve 2-FCV-74-3, RHR A-A SUCTION ISOLATION. _____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[60] **PLACE** Transfer Switch 2-XS-74-3, CNTMT SUMP TO RHR PUMP A-A, to AUX. _____

[61] **PLACE** control switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to OPEN, **AND**

RELEASE. _____

[62] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT open. _____

NOTE

Opening an EQ junction box requires the removal of silicone sealant, RTV 3140, which must be replaced once work inside of the junction box is completed. The junction box is to be inspected in accordance with TI-10.12.

[63] **LOCATE** and **VERIFY** terminals 12B02 and 12B03 on Panel 2-JB-292-2506-A, [A10W/676]. _____ 1st _____ CV

[64] **INSTALL** a jumper across terminals 12B02 and 12B03 on Panel 2-JB-292-2506-A (2-FCV-74-3 limit switch), **AND**

DOCUMENT on Appendix E. _____

[65] **PLACE** control switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to OPEN, **AND**

RELEASE. _____

[66] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT open. _____

[67] **LOCATE** and **VERIFY** terminals 12B02 and 12B03 on Panel 2-JB-292-2506-A. _____ 1st _____ CV

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[68] **REMOVE** the jumper across terminals 12B02 and 12B03 on Panel 2-JB-292-2506-A, (2-FCV-74-3 limit switch), **AND**

DOCUMENT on Appendix E. _____

[69] **LOCATE** and **VERIFY** terminals 12B03 and 12B03 on Panel 2-JB-292-2506-A.

_____ 1st

_____ CV

[70] **INSTALL** a jumper across terminals 12B03 and 12B06 on Panel 2-JB-292-2506-A, (2-FCV-74-3 limit switch), **AND**

DOCUMENT on Appendix E. _____

[71] **PLACE** control switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to OPEN, **AND**

RELEASE. _____

[72] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT open. _____

[73] **LOCATE** and **VERIFY** terminals 12B03 and 12B03 on Panel 2-JB-292-2506-A.

_____ 1st

_____ CV

[74] **REMOVE** the jumper across terminals 12B03 and 12B06 on Panel 2-JB-292-2506-A, (2-FCV-74-3 limit switch), **AND**

DOCUMENT on Appendix E. _____

[75] **PLACE** Transfer Switch 2-XS-63-72, CNTMT SUMP TO RHR PUMP A-A, to AUX. _____

[76] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP A-A, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

[77] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, did NOT open. _____

[78] **PLACE** Transfer Switch 2-XS-63-72, CNTMT SUMP TO RHR PUMP A-A, to NORMAL. _____

[79] **LOCATE** and **VERIFY** terminals TB631-11 and TB631-12 in Panel 2-R-48. _____ 1st _____ CV

[80] **INSTALL** a jumper across terminals TB631-11 and TB631-12 on the field side of the plastic isolators in Panel 2-R-48 (Safety Injection Latch), **AND**

DOCUMENT on Appendix E. _____

[81] **PLACE** control switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to OPEN, **AND**

RELEASE. _____

[82] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, opens (**Acc Crit** 5.0l). _____

[83] **PLACE** control switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to CLOSE, **AND**

RELEASE. _____

[84] **LOCATE** and **VERIFY** terminals TB631-1 and TB631-2 in Panel 2-R-48. _____ 1st _____ CV

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

6.11 Valve 2-FCV-63-72 Logic Test (continued)

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[85] **MOMENTARILY PLACE** a handheld jumper across terminals TB631-1 and TB631-2 on the field side of the plastic insulators in Panel 2-R-48 (Auto Switchover). _____ 1st _____ CV

[86] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, opens (**Acc Crit** 5.0J). _____

[87] **LOCATE** and **VERIFY** terminals TB631-11 and TB631-12 in Panel 2-R-48. _____ 1st _____ CV

[88] **REMOVE** the jumper across terminals TB631-11 and TB631-12 on the field side of the plastic isolators in Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[89] **VERIFY** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, remains OPEN (**Acc Crit** 5.0J). _____

[90] **CLOSE** valve 2-FCV-74-3, RHR A-A SUCTION ISOLATION. _____

[91] **PLACE** control switch 2-HS-63-72A, CNTMT SUMP TO RHR PMP A SUCT, to CLOSE, **AND**

RELEASE. _____

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

6.12 Valve 2-FCV-63-8 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.12 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP. _____

[4] **ENSURE** position of the following valves:

A. 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, CLOSED _____

B. 2-FCV-63-4, [A11V/692] SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, CLOSED _____

C. 2-FCV-63-175, [A11U/692] SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, CLOSED _____

D. 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP, CLOSED _____

E. 2-FCV-74-3, RHR A-A SUCTION ISOLATION, CLOSED _____

[5] **OPEN** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A. _____

[6] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2090 _____

B. FD2091 _____

[7] **VERIFY** ICS point FD2091 displays "CLOSED". _____

[8] **VERIFY** ICS point FD2090 displays "PWR ON". _____

[9] **ENSURE** Transfer Switch 2-XS-63-8, RHR HTX A TO CVCS CHG PUMP, is in NORMAL. _____

[10] **ENSURE** AUX CONTROL SWITCH 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, is in NORMAL. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, to OPEN, **AND**

RETURN to NORMAL. _____

[12] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT open. _____

[13] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, and while the valve is opening,

PLACE Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, red light ON. _____

B. 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, green light OFF. _____

C. Valve is OPEN (Local). _____

[15] **VERIFY** ICS point FD2091 displays "NOT CLS". _____

[16] **PLACE** Hand Switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, to CLOSE, **AND**

RETURN to NORMAL. _____

[17] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT close. _____

[18] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to CLOSE, and while the valve is closing,

PLACE Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[19] **VERIFY** the following indications:

A. 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, red light OFF. _____

B. 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, green light ON. _____

C. Valve is CLOSED (Local). _____

[20] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[21] **PLACE** Transfer Switch 2-XS-63-8, RHR HTX A TO CVCS CHG PUMP, to AUX. _____

[22] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[23] **VERIFY** the following indications:

A. 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, red light OFF. _____

B. 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, green light OFF. _____

[24] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[25] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT open. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, and locally at the valve.

[26] **PLACE** Hand Switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, stroke. _____

[27] **RECORD** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[28] **RECORD** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, OPEN stroke time.

Local

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____

[29] **VERIFY** the following indications:

A. 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, red light ON. _____

B. 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, green light OFF. _____

C. Valve is OPEN (Local). _____

[30] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[31] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT close. _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, and locally at the valve.

[32] **PLACE** Hand Switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, stroke. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[33] **RECORD** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[34] **RECORD** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____

[35] **VERIFY** the following indications:

A. 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, red light OFF. _____

B. 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, green light ON. _____

C. Valve is CLOSED (Local). _____

[36] **OPEN** breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A. _____

[37] **VERIFY** ICS point FD2090 displays "PWR OFF". _____

[38] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[39] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[40] **CLOSE** breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A. _____

[41] **PLACE** Hand Switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, to OPEN, **AND**

RETURN to NORMAL. _____

[42] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT open (**Acc Crit** 5.0A). _____

[43] **PRESS, AND**

HOLD the armature of the K3 relay in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[44] **PLACE** Hand Switch 2-HS-63-8C, RHR HTX A TO CVCS CHG PUMP, to OPEN, **AND**

RETURN to NORMAL. _____

[45] **VERIFY** that valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, OPENS (**Acc Crit** 5.0A). _____

[46] **RELEASE** the K3 relay armature. _____

[47] **OPEN** breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[48] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[49] **RECONNECT** the wire (wire 2) to the common terminal on the overload relay of breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[50] **CLOSE** breaker 11B (2-BKR-63-8-A) at 480V RX MOV BD 2A1-A. _____

[51] **PLACE** Hand Switch 2-HS-63-8C, CHG PMP SUCTION FROM TR A RHR, to CLOSE, **AND**

RELEASE. _____

[52] **PLACE** Transfer Switch 2-XS-63-8, RHR HTX A TO CVCS CHG PUMP, to NORMAL. _____

[53] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

[54] **OPEN** valve 2-FCV-63-175, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV. _____

[55] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[56] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, opens. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[57] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[58] **OPEN** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST VLV. _____

[59] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[60] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT open. _____

[61] **CLOSE** valve 2-FCV-63-175, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV. _____

[62] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[63] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, opens (**Acc Crit** 5.0H). _____

[64] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[65] **OPEN** valve 2-FCV-63-4, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV. _____

[66] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[67] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT open. _____

[68] **OPEN** valve 2-FCV-63-175, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[69] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[70] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT open. _____

[71] **CLOSE** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST VLV. _____

[72] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[73] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, opens (**Acc Crit** 5.0H). _____

[74] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[75] **CLOSE** valve 2-FCV-63-175, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV. _____

[76] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[77] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, opens. _____

[78] **PLACE** Hand Switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[79] **CLOSE** valve 2-FCV-63-4, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV. _____

[80] **CLOSE** valve 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A. _____

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

6.12 Valve 2-FCV-63-8 Logic Test (continued)

[81] **PLACE** control switch 2-HS-63-8A, RHR PMP A TO CHARGING PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[82] **VERIFY** valve 2-FCV-63-8, RHR HTX A TO CVCS CHG PUMP, did NOT open. _____

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

6.13 Valve 2-FCV-63-1 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.13 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2A1-A, and at valve 2-FCV-63-1, [A11U/692] RWST TO RHR PMP FLOW CNTL VLV. _____

[4] **ENSURE** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2072 _____

B. FD2073 _____

[6] **VERIFY** ICS point FD2073 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2072 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-1, RWST TO RHR PMP FLOW CONTROL VLV TRF, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, did NOT open. _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[12] **PLACE** Hand Switch 2-HS-63-1A, RWST TO RHR ECCS SUCTION, to OPEN, and while the valve is opening,

PLACE Hand Switch 2-HS-63-1A, RWST TO RHR ECCS SUCTION, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-1A, RWST TO RHR ECCS SUCTION, red light ON. _____

B. 2-HS-63-1A, RWST TO RHR ECCS SUCTION, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** 2–XA–55–6D–132D, RWST TO RHR FCV-63-1 NOT OPEN, is CLEAR. _____

[15] **VERIFY** ICS point FD2073 displays "OPEN". _____

[16] **PLACE** Hand Switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[17] **VERIFY** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, did NOT close. _____

[18] **PLACE** Hand Switch 2-HS-63-1A, RWST TO RHR ECCS SUCTION, to CLOSE, and while the valve is closing,

PLACE Hand Switch 2-HS-63-1A, RWST TO RHR ECCS SUCTION, to OPEN, **AND**

RELEASE. _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[19] **VERIFY** the following indications:

A. 2-HS-63-1A, RWST TO RHR ECCS SUCTION, red light OFF. _____

B. 2-HS-63-1A, RWST TO RHR ECCS SUCTION, green light ON. _____

C. Valve is CLOSED (Local). _____

[20] **VERIFY** 2–XA–55–6D–132D, RWST TO RHR FCV-63-1 NOT OPEN, alarms (**Acc Crit** 5.0O). _____

[21] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, is CLEAR. _____

[22] **PLACE** Transfer Switch 2-XS-63-1, RWST TO RHR PMP FLOW CONTROL VLV TRF, to AUX. _____

[23] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[24] **VERIFY** the following indications:

A. 2-HS-63-1A, RWST TO RHR ECCS SUCTION, red light OFF. _____

B. 2-HS-63-1A, RWST TO RHR ECCS SUCTION, green light OFF. _____

[25] **PLACE** Hand Switch 2-HS-63-1A, RWST TO RHR ECCS SUCTION, to OPEN, **AND**

RELEASE. _____

[26] **VERIFY** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, did NOT open. _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, and locally at the valve.

[27] **PLACE** Hand Switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, stroke. _____

[28] **RECORD** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[29] **RECORD** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, OPEN stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[31] **ENSURE** 2–XA–55–6D–132D, RWST TO RHR FCV-63-1 NOT OPEN, is CLEAR. _____

[32] **PLACE** Hand Switch 2-HS-63-1A, RWST TO RHR ECCS SUCTION, to CLOSE, **AND**

RELEASE. _____

[33] **VERIFY** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, did NOT close. _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, and locally at the valve.

[34] **PLACE** Hand Switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, stroke. _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[35] **RECORD** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[36] **RECORD** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, CLOSE stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[37] **VERIFY** the following indications:

A. 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, red light OFF. _____

B. 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[38] **DEPRESS, AND**

RELEASE 2-HS-63-1B OPEN pushbutton, and while the valve is opening,

DEPRESS, AND

RELEASE 2-HS-63-1B STOP pushbutton. _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[39] **VERIFY** the following indications:

A. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, green light ON. _____

C. Valve mid-position (Local). _____

[40] **DEPRESS, AND**

RELEASE 2-HS-63-1B OPEN pushbutton. _____

[41] **VERIFY** the following indications:

A. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, green light OFF. _____

C. Valve OPEN (Local). _____

[42] **DEPRESS, AND**

RELEASE 2-HS-63-1B CLOSE pushbutton, and while the valve is closing,

DEPRESS, AND

RELEASE 2-HS-63-1B STOP pushbutton. _____

[43] **VERIFY** the following indications:

A. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, green light ON. _____

C. Valve mid-position (Local). _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[44] **DEPRESS, AND**

RELEASE 2-HS-63-1B CLOSE pushbutton. _____

[45] **VERIFY** the following indications:

A. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, red light OFF. _____

B. 2-HS-63-1B, RWST TO RHR PMP FLOW CONTROL VLV, green light ON. _____

C. Valve CLOSED (Local). _____

[46] **OPEN** breaker in Compt 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A. _____

[47] **VERIFY** ICS point FD2072 displays "PWR OFF". _____

[48] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[49] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker in Compt 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[50] **CLOSE** breaker in Compt 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A. _____

[51] **PLACE** Hand Switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[52] **VERIFY** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, did NOT open (**Acc Crit** 5.0A). _____

[53] **PRESS, AND**

HOLD the armature of the K2 relay in the back of Panel 4F on 480V RX MOV BD 2A1-A to simulate Overload Bypass. _____

[54] **PLACE** Hand Switch 2-HS-63-1C, RWST TO RHR PMP FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[55] **VERIFY** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, opens (**Acc Crit** 5.0A). _____

[56] **RELEASE** the K2 relay armature. _____

[57] **OPEN** the breaker in Compt 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A. _____

[58] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[59] **RECONNECT** the wire (wire 2) to the common terminal on the overload relay of breaker in Compt 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A, **AND**

DOCUMENT on Appendix E. _____

[60] **CLOSE** the breaker in Compt 10A (2-BKR-63-1B-A) at 480V RX MOV BD 2A1-A. _____

[61] **PLACE** Transfer Switch 2-XS-63-1, RWST TO RHR PMP FLOW CONTROL VLV TRF, to NORMAL. _____

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

6.13 Valve 2-FCV-63-1 Logic Test (continued)

[62] **VERIFY** 2–XA–55–6F–149C, 480 RX MOV BD 2A1-A/2A2-A XS IN AUX, CLEARS. _____

[63] **OPEN** the breaker (2-BKR-63-1-A) in Compt 2EI at 480V RX MOV BD 2A1-A. _____

[64] **PLACE** control switch 2-HS-63-1A, RWST TO RHR ECCS SUCTION, to CLOSE, **AND**

RELEASE. _____

[65] **VERIFY** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV, did NOT close. _____

[66] **CLOSE** the breaker (2-BKR-63-1-A) in Compt 2EI at 480V RX MOV BD 2A1-A. _____

[67] **CLOSE** valve 2-FCV-63-1, RWST TO RHR PMP FLOW CNTL VLV. _____

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

6.14 Valve 2-FCV-63-71 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.14 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-71, [IC/720 AZ291] SIS CHECK VLV LEAK TEST ISOLATION. _____

[4] **ENSURE** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-71, SIS CHECK VLV LEAK TEST ISOLATION, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, is in CLOSE. _____

[7] **VERIFY** the following indications:

A. 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, red light OFF. _____

B. 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, green light OFF. _____

[8] **PLACE** Hand Switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, to OPEN. _____

[9] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, did NOT open (**Acc Crit.** 5.0X). _____

[10] **PLACE AND**

HOLD Hand Switch 2-HS-63-71A, CKV TEST LINE TO HUT, to OPEN until 2-HS-63-71A, CKV TEST LINE TO HUT, green light is OFF. _____

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

6.14 Valve 2-FCV-63-71 Logic Test (continued)

[11] **VERIFY** the following indications:

A. 2-HS-63-71A, CKV TEST LINE TO HUT, red light ON. _____

B. 2-HS-63-71A, CKV TEST LINE TO HUT, green light OFF. _____

C. CISP 2-XX-55-6E Window 78, red light ON. _____

D. CISP 2-XX-55-6E Window 78, green light OFF. _____

E. Valve is OPEN (Local). _____

[12] **PLACE** Hand Switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, to CLOSE. _____

[13] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, did NOT close. _____

[14] **PLACE** Hand Switch 2-HS-63-71A, CKV TEST LINE TO HUT, to CLOSE. _____

[15] **VERIFY** the following indications:

A. 2-HS-63-71A, CKV TEST LINE TO HUT, red light OFF. _____

B. 2-HS-63-71A, CKV TEST LINE TO HUT, green light ON. _____

C. CISP 2-XX-55-6E Window 78, red light OFF. _____

D. CISP 2-XX-55-6E Window 78, green light ON. _____

E. Valve is CLOSED (Local). _____

[16] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, is CLEAR. _____

[17] **PLACE** Transfer Switch 2-XS-63-71, SIS CHECK VLV LEAK TEST ISOLATION, to AUX. _____

[18] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

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

6.14 Valve 2-FCV-63-71 Logic Test (continued)

[19] **VERIFY** the following indications:

A. 2-HS-63-71A, CKV TEST LINE TO HUT, red light OFF. _____

B. 2-HS-63-71A, CKV TEST LINE TO HUT, green light OFF. _____

C. CISP 2-XX-55-6E Window 78, red light OFF. _____

D. CISP 2-XX-55-6E Window 78, green light OFF. _____

[20] **PLACE AND**

HOLD Hand Switch 2-HS-63-71A, CKV TEST LINE TO HUT, to OPEN. _____

[21] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, did NOT open (**Acc. Crit**. 5.0X). _____

[22] **RELEASE** Hand Switch 2-HS-63-71A, CKV TEST LINE TO HUT. _____

NOTE

Time the valve stroke from control switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, and locally at the valve.

[23] **PLACE** Hand Switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, to OPEN, and simultaneously time the valve stroke. _____

[24] **RECORD** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

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

6.14 Valve 2-FCV-63-71 Logic Test (continued)

[25] **RECORD** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[26] **VERIFY** the following indications:

A. 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, red light ON. _____

B. 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, green light OFF. _____

C. Valve is OPEN (Local) _____

[27] **PLACE** Hand Switch 2-HS-63-71A, CKV TEST LINE TO HUT, to CLOSE. _____

[28] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, did NOT close. _____

[29] **PLACE** Hand Switch 2-HS-63-71A, CKV TEST LINE TO HUT, to A AUTO. _____

NOTE

Time the valve stroke from control switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, and locally at the valve.

[30] **PLACE** Hand Switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, to CLOSE, and simultaneously time the valve stroke. _____

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

6.14 Valve 2-FCV-63-71 Logic Test (continued)

[31] **RECORD** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[32] **RECORD** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[33] **VERIFY** the following indications:

A. 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, red light OFF. _____

B. 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, green light ON. _____

C. Valve is CLOSED (Local). _____

[34] **PLACE** Hand Switch 2-HS-63-71C, SIS CHECK VLV LEAK TEST ISOLATION, to OPEN. _____

[35] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, OPENS. _____

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

6.14 Valve 2-FCV-63-71 Logic Test (continued)

[36] **CLOSE** 2-ISV-32-3514, CONTROL AIR TO 2-FCV-63-71, **AND**

OPEN the petcock for valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION. _____

[37] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, CLOSES (**Acc. Crit**. 5.0Z). _____

[38] **CLOSE** the petcock **AND**

OPEN 2-ISV-32-3514, CONTROL AIR TO 2-FCV-63-71. _____

[39] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, OPENS. _____

[40] **LOCATE** and **VERIFY** fuse 0-FU-236-3/B19 from fuse column for 125V Vital Battery Board III. _____ 1st _____ CV

[41] **REMOVE** fuse 0-FU-236-3/B19 from fuse column for 125V Vital Battery Board III, **AND**

DOCUMENT on Appendix B. _____

[42] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, CLOSES (**Acc Crit** 5.0Z). _____

[43] **LOCATE** and **VERIFY** fuse 0-FU-236-3/B19 from fuse column for 125V Vital Battery Board III. _____ 1st _____ CV

NOTE

The fuse in the following step has a blown fuse indicator which must be oriented towards the annunciator circuit.

[44] **REINSTALL** fuse 0-FU-236-3/B19 from fuse column for 125V Vital Battery Board III, **AND**

DOCUMENT on Appendix B. _____

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

6.14 Valve 2-FCV-63-71 Logic Test (continued)

[45] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, OPENS. _____

[46] **LOCATE** and **VERIFY** terminals TB612-1 and TB612-2 in Panel 2-R-48. _____ 1st _____ CV

[47] **REMOVE** the jumper installed across terminals TB612-1 and TB612-2 in Panel 2-R-48, **AND**

DOCUMENT on Appendix B. _____

[48] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, did NOT CLOSE. _____

[49] **PLACE** Transfer Switch 2-XS-63-71, SIS CHECK VLV LEAK TEST ISOLATION, to NORMAL. _____

[50] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, CLEARS. _____

[51] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, CLOSES (**Acc Crit** 5.0K). _____

[52] **VERIFY** the following indications:

A. CISP 2-XX-55-6E window 78, red light OFF. _____

B. CISP 2-XX-55-6E window 78, green light ON (**Acc Crit** 5.0AA). _____

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[53] **MOMENTARILY PLACE** a handheld jumper across terminals TB612-1 and TB612-2 on the field side of the plastic isolators in Panel 2-R-48. _____

[54] **VERIFY** valve 2-FCV-63-71, SIS CHECK VLV LEAK TEST ISOLATION, remains CLOSED (**Acc Crit** 5.0K). _____

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

6.14 Valve 2-FCV-63-71 Logic Test (continued)

[55] **VERIFY** the following indications:

A. CISP 2-XX-55-6E Window 78, red light OFF. _____

B. CISP 2-XX-55-6E Window 78, green light ON (**Acc Crit** 5.0AA). _____

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

6.15 Valve 2-FCV-63-23 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.15 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-23, [A11W/713] SIS ACCUM FILL LINE ISOLATION VLV. _____

[4] **ENSURE** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, is CLOSED. _____

[5] **PLACE AND**

HOLD Hand Switch 2-HS-63-23, CLA FILL FROM SI PMPS, to OPEN until 2-HS-63-23, CLA FILL FROM SI PMPS, green light is OFF. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-23, CLA FILL FROM SI PMPS, red light ON. _____

B. 2-HS-63-23, CLA FILL FROM SI PMPS, green light OFF. _____

C. CISP 2-XX-55-6F Window 79, red light ON. _____

D. CISP 2-XX-55-6F Window 79, green light OFF. _____

E. Valve is OPEN (Local). _____

[7] **PLACE** Hand Switch 2-HS-63-23, CLA FILL FROM SI PMPS, to CLOSE. _____

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

6.15 Valve 2-FCV-63-23 Logic Test (continued)

[8] **VERIFY** the following indications:

A. 2-HS-63-23, CLA FILL FROM SI PMPS, red light OFF. _____

B. 2-HS-63-23, CLA FILL FROM SI PMPS, green light ON. _____

C. CISP 2-XX-55-6F Window 79, red light OFF. _____

D. CISP 2-XX-55-6F Window 79, green light ON. _____

E. Valve is CLOSED (Local). _____

NOTE

Time the valve stroke from control switch 2-HS-63-23, CLA FILL FROM SI PMPS, and locally at the valve.

[9] **PLACE AND**

HOLD Hand Switch 2-HS-63-23, CLA FILL FROM SI PMPS, to OPEN, and simultaneously time the valve stroke. _____

[10] **RELEASE** Hand Switch 2-HS-63-23, CLA FILL FROM SI PMPS. _____

[11] **RECORD** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

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

6.15 Valve 2-FCV-63-23 Logic Test (continued)

[12] **RECORD** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[13] **PLACE** Hand Switch 2-HS-63-23, CLA FILL FROM SI PMPS, to CLOSE, and simultaneously time the valve stroke. _____

[14] **RECORD** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[15] **RECORD** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[16] **OPEN** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV. _____

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

6.15 Valve 2-FCV-63-23 Logic Test (continued)

[17] **CLOSE** 2-ISV-32-3182, CONTROL AIR TO 2-FCV-63-23, **AND**

OPEN the petcock for valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV. _____

[18] **VERIFY** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, CLOSES (**Acc. Crit.** 5.0Z). _____

[19] **CLOSE** the petcock **AND**

OPEN 2-ISV-32-3182, CONTROL AIR TO 2-FCV-63-23. _____

[20] **OPEN** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV. _____

[21] **LOCATE** and **VERIFY** fuse 0-FU-236-4/A29 from fuse column for 125V Vital Battery Board IV.

_____ 1st

_____ CV

[22] **REMOVE** fuse 0-FU-236-4/A29 from fuse column for 125V Vital Battery Board IV, **AND**

DOCUMENT on Appendix B. _____

[23] **VERIFY** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, CLOSES (**Acc Crit** 5.0Z). _____

[24] **LOCATE** and **VERIFY** fuse 0-FU-236-4/A29 from fuse column for 125V Vital Battery Board IV.

_____ 1st

_____ CV

NOTE

The fuse in the following step has a blown fuse indicator which must be oriented towards the annunciator circuit.

[25] **REINSTALL** fuse 0-FU-236-4/A29 from fuse column for 125V Vital Battery Board IV, **AND**

DOCUMENT on Appendix B. _____

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

6.15 Valve 2-FCV-63-23 Logic Test (continued)

[26] **OPEN** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV. _____

[27] **LOCATE** and **VERIFY** terminals TB630-5 and TB630-6 in Panel 2-R-51. _____ 1st _____ CV

[28] **REMOVE** the jumper installed across terminals TB630-5 and TB630-6 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[29] **VERIFY** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, CLOSES (**Acc Crit** 5.0K). _____

[30] **VERIFY** the following indications:

A. CISP 2-XX-55-6F Window 79, red light OFF. _____

B. CISP 2-XX-55-6F Window 79, green light ON (**Acc Crit** 5.0AA). _____

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[31] **MOMENTARILY PLACE** a handheld jumper across terminals TB630-5 and TB630-6 on the field side of the plastic isolators in Panel 2-R-51. _____

[32] **VERIFY** valve 2-FCV-63-23, SIS ACCUM FILL LINE ISOLATION VLV, remains CLOSED (**Acc Crit** 5.0K). _____

[33] **VERIFY** the following indications:

A. CISP 2-XX-55-6F window 79, red light OFF. _____

B. CISP 2-XX-55-6F window 79, green light ON **(Acc Crit 5.0AA)**. _____

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

6.16 Valve 2-FCV-63-84 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.16 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-84, [A11W713] SIS CHECK VLV LEAK TEST ISOL. _____

[4] **ENSURE** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, is CLOSED. _____

[5] **PLACE AND**

HOLD Hand Switch 2-HS-63-84, CKV TEST LINE TO HUT, to OPEN until 2-HS-63-84, CKV TEST LINE TO HUT, green light is OFF. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-84, CKV TEST LINE TO HUT, red light ON. _____

B. 2-HS-63-84, CKV TEST LINE TO HUT, green light OFF. _____

C. CISP 2-XX-55-6F Window 78, red light ON. _____

D. CISP 2-XX-55-6F Window 78, green light OFF. _____

E. Valve is OPEN (Local). _____

[7] **PLACE** Hand Switch 2-HS-63-84, CKV TEST LINE TO HUT, to CLOSE. _____

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

6.16 Valve 2-FCV-63-84 Logic Test (continued)

[8] **VERIFY** the following indications:

A. 2-HS-63-84, CKV TEST LINE TO HUT, red light OFF. _____

B. 2-HS-63-84, CKV TEST LINE TO HUT, green light ON. _____

C. CISP 2-XX-55-6F Window 78, red light OFF. _____

D. CISP 2-XX-55-6F Window 78, green light ON. _____

E. Valve is CLOSED (Local). _____

NOTE

Time the valve stroke from control switch 2-HS-63-84, CKV TEST LINE TO HUT, and locally at the valve.

[9] **PLACE AND**

HOLD Hand Switch 2-HS-63-84, CKV TEST LINE TO HUT, to OPEN, and simultaneously time the valve stroke. _____

[10] **RELEASE** Hand Switch 2-HS-63-84, CKV TEST LINE TO HUT. _____

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

6.16 Valve 2-FCV-63-84 Logic Test (continued)

[11] **RECORD** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **RECORD** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[13] **PLACE** Hand Switch 2-HS-63-84, CKV TEST LINE TO HUT, to CLOSE, and simultaneously time the valve stroke. _____

[14] **RECORD** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.16 Valve 2-FCV-63-84 Logic Test (continued)

[15] **RECORD** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[16] **OPEN** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL. _____

[17] **CLOSE** 2-ISV-32-3181, CONTROL AIR TO 2-FCV-63-84, **AND**

OPEN the petcock for valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL. _____

[18] **VERIFY** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, CLOSES (**Acc. Crit.** 5.0Z). _____

[19] **CLOSE** the petcock **AND**

OPEN 2-ISV-32-3181, CONTROL AIR TO 2-FCV-63-84. _____

[20] **OPEN** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL. _____

[21] **LOCATE** and **VERIFY** fuse 0-FU-236-4/B44. _____ 1st

_____ CV

[22] **REMOVE** fuse 0-FU-236-4/B44, **AND**

DOCUMENT on Appendix B. _____

[23] **VERIFY** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, CLOSES (**Acc Crit** 5.0Z). _____

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

6.16 Valve 2-FCV-63-84 Logic Test (continued)

[24] **LOCATE** and **VERIFY** fuse 0-FU-236-4/B44 from fuse column for 125V Vital Battery Board IV. _____ 1st _____ CV

NOTE

The fuse in the following step has a blown fuse indicator which must be oriented towards the annunciator circuit.

[25] **REINSTALL** fuse 0-FU-236-4/B44 from fuse column for 125V Vital Battery Board IV, **AND**

DOCUMENT on Appendix B. _____

[26] **OPEN** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL. _____

[27] **LOCATE** and **VERIFY** TB611-9 and TB611-10 in Panel 2-R-51. _____ 1st _____ CV

[28] **REMOVE** the jumper installed across terminals TB611-9 and TB611-10 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[29] **VERIFY** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, CLOSES (**Acc Crit** 5.0K). _____

[30] **VERIFY** the following indications:

A. CISP 2-XX-55-6F Window 78, red light OFF. _____

B. CISP 2-XX-55-6F Window 78, green light ON (**Acc Crit** 5.0AA). _____

[31] **LOCATE** and **VERIFY** TB611-9 and TB611-10 in Panel 2-R-51. _____ 1st _____ CV

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

6.16 Valve 2-FCV-63-84 Logic Test (continued)

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[32] **MOMENTARILY PLACE** a handheld jumper across terminals TB611-9 and TB611-10 on the field side of the plastic isolators in Panel 2-R-51. _____

[33] **VERIFY** valve 2-FCV-63-84, SIS CHECK VLV LEAK TEST ISOL, remains CLOSED (**Acc Crit** 5.0K). _____

[34] **VERIFY** the following indications:

A. CISP 2-XX-55-6F Window 78, red light OFF. _____

B. CISP 2-XX-55-6F Window 78, green light ON (**Acc Crit** 5.0AA). _____

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

6.17 Valve 2-FCV-63-158 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.17 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-158, [IC/734 AZ294] RHR RETURN FROM SIS SAMPLE. _____

[4] **ENSURE** valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-158, RHR RETURN FROM SIS SAMPLE, red light ON. _____

B. 2-HS-63-158, RHR RETURN FROM SIS SAMPLE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

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

6.17 Valve 2-FCV-63-158 Logic Test (continued)

[8] **VERIFY** the following indications:

A. 2-HS-63-158, RHR RETURN FROM SIS SAMPLE, red light OFF. _____

B. 2-HS-63-158, RHR RETURN FROM SIS SAMPLE, green light ON. _____

C. Valve is CLOSED (Local). _____

NOTE

Time valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, stroke. _____

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

6.17 Valve 2-FCV-63-158 Logic Test (continued)

[10] **RECORD** valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, stroke. _____

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

6.17 Valve 2-FCV-63-158 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-158, RHR RETURN FROM SIS SAMPLE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.18 Valve 2-FCV-63-165 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.18 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-165, [IC/720 AZ180] RCS LP 2 H L FEED TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-165, RCS LP 2 H L FEED TEST LINE, red light ON. _____

B. 2-HS-63-165, RCS LP 2 H L FEED TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-165, RCS LP 2 H L FEED TEST LINE, red light OFF. _____

B. 2-HS-63-165, RCS LP 2 H L FEED TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.18 Valve 2-FCV-63-165 Logic Test (continued)

NOTE

Time valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, stroke. _____

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

6.18 Valve 2-FCV-63-165 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-165, RCS LP 2 H L FEED TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.19 Valve 2-FCV-63-78 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.19 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-78, [IC/716 AZ215] SIS ACCUM TK 3 CHECK VLV LEAK TEST. _____

[4] **ENSURE** valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.19 Valve 2-FCV-63-78 Logic Test (continued)

NOTE

Time valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, stroke. _____

[10] **RECORD** valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, stroke. _____

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

6.19 Valve 2-FCV-63-78 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-78, SIS ACCUM TK 3 CHECK VLV LEAK TEST, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.20 Valve 2-FCV-63-79 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.20 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-79, [IC/716 AZ215] SIS CL 3 CHECK VLV LEAK TEST. _____

[4] **ENSURE** valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-79, SIS CL 3 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-79, SIS CL 3 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-79, SIS CL 3 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-79, SIS CL 3 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.20 Valve 2-FCV-63-79 Logic Test (continued)

NOTE

Time valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, stroke. _____

[10] **RECORD** valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, stroke. _____

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

6.20 Valve 2-FCV-63-79 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-79, SIS CL 3 CHECK VLV LEAK TEST, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.21 Valve 2-FCV-63-116 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.21 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-116, [IC/716 AZ40] SIS ACCUM TK 1 CHECK VLV LEAK TEST. _____

[4] **ENSURE** valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.21 Valve 2-FCV-63-116 Logic Test (continued)

NOTE

Time valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, stroke. _____

[10] **RECORD** valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, stroke. _____

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

6.21 Valve 2-FCV-63-116 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-116, SIS ACCUM TK 1 CHECK VLV LEAK TEST, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.22 Valve 2-FCV-63-117 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.22 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-117, [IC/716 AZ40] SIS CL 1 CHECK VLV LEAK TEST. _____

[4] **ENSURE** valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-117, SIS CL 1 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-117, SIS CL 1 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-117, SIS CL 1 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-117, SIS CL 1 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.22 Valve 2-FCV-63-117 Logic Test (continued)

NOTE

Time valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, stroke. _____

[10] **RECORD** valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, stroke. _____

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

6.22 Valve 2-FCV-63-117 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-117, SIS CL 1 CHECK VLV LEAK TEST, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.23 Valve 2-FCV-63-21 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.23 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-21, [IC/727 AZ285] SIS PUMP OUTLET TO SIS TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-21, SIS PUMP OUTLET TO SIS TEST LINE, red light ON. _____

B. 2-HS-63-21, SIS PUMP OUTLET TO SIS TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-21, SIS PUMP OUTLET TO SIS TEST LINE, red light OFF. _____

B. 2-HS-63-21, SIS PUMP OUTLET TO SIS TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.23 Valve 2-FCV-63-21 Logic Test (continued)

NOTE

Time valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, stroke. _____

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

6.23 Valve 2-FCV-63-21 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-21, SIS PUMP OUTLET TO SIS TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.24 Valve 2-FCV-63-164 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.24 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-164, [IC/723 AZ145] RCS LP 3 H L FEED TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-164, RCS LP 3 H L FEED TEST LINE, red light ON. _____

B. 2-HS-63-164, RCS LP 3 H L FEED TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-164, RCS LP 3 H L FEED TEST LINE, red light OFF. _____

B. 2-HS-63-164, RCS LP 3 H L FEED TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.24 Valve 2-FCV-63-164 Logic Test (continued)

NOTE

Time valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, stroke. _____

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

6.24 Valve 2-FCV-63-164 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-164, RCS LP 3 H L FEED TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.25 Valve 2-FCV-63-174 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.25 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-174, [IC/734 AZ296] SIS TEST LINE CHECK VLV TEST. _____

[4] **ENSURE** valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-174, SIS TEST LINE CHECK VLV TEST, red light ON. _____

B. 2-HS-63-174, SIS TEST LINE CHECK VLV TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-174, SIS TEST LINE CHECK VLV TEST, red light OFF. _____

B. 2-HS-63-174, SIS TEST LINE CHECK VLV TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.25 Valve 2-FCV-63-174 Logic Test (continued)

NOTE

Time valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, stroke. _____

[10] **RECORD** valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, stroke. _____

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

6.25 Valve 2-FCV-63-174 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-174, SIS TEST LINE CHECK VLV TEST, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.26 Valve 2-FCV-63-111 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.26 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-111, [IC/718 AZ289] SIS CHK VLV LEAK TEST ISOLATION VLV. _____

[4] **ENSURE** valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, red light ON. _____

B. 2-HS-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, red light OFF. _____

B. 2-HS-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.26 Valve 2-FCV-63-111 Logic Test (continued)

NOTE

Time valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, stroke. _____

[10] **RECORD** valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, stroke. _____

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

6.26 Valve 2-FCV-63-111 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-111, SIS CHK VLV LEAK TEST ISOLATION VLV, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.27 Valve 2-FCV-63-87 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.27 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-87, [IC/730 AZ233] SIS ACCUM TK 3 N2 MAKEUP VLV. _____

[4] **ENSURE** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, did NOT open (**Acc Crit**. 5.0X). _____

[9] **PLACE** Hand Switch 2-HS-63-87A, N2 TO CL ACCUM 3, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-87A, N2 TO CL ACCUM 3, red light ON. _____

B. 2-HS-63-87A, N2 TO CL ACCUM 3, green light OFF. _____

C. 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, red light OFF. _____

D. 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.27 Valve 2-FCV-63-87 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-87A, N2 TO CL ACCUM 3, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-87A, N2 TO CL ACCUM 3, red light OFF. _____

B. 2-HS-63-87A, N2 TO CL ACCUM 3, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV TRF, to AUX. _____

[17] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc. Crit**. 5.0E). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-87A, N2 TO CL ACCUM 3, red light OFF. _____

B. 2-HS-63-87A, N2 TO CL ACCUM 3, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-87A, N2 TO CL ACCUM 3, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, did NOT open (**Acc. Crit**. 5.0X). _____

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

6.27 Valve 2-FCV-63-87 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, stroke from control switch 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, to OPEN, and simultaneously time valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, stroke. _____

[22] **RECORD** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, OPEN stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, OPEN stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, red light ON. _____

B. 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-87A, N2 TO CL ACCUM 3, to CLOSE. _____

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

6.27 Valve 2-FCV-63-87 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, did NOT close. _____

NOTE

Time the valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, stroke from control switch 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, and locally at the valve.

[27] **PLACE** Hand Switch 2-HS-63-87C to CLOSE, and simultaneously time valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, stroke. _____

[28] **RECORD** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, CLOSE stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[29] **RECORD** valve 2-FCV-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV, CLOSE stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, red light OFF. _____

B. 2-HS-63-87C, SIS ACCUM TK 3 N2 MAKEUP VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.27 Valve 2-FCV-63-87 Logic Test (continued)

[31] **PLACE** Transfer Switch 2-XS-63-87, SIS ACCUM TK 3 N2 MAKEUP VLV TRF, to NORMAL. _____

[32] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, CLEARS. _____

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

6.28 Valve 2-FCV-63-90 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.28 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-90, [IC/716 AZ212] SIS ACCUM TK 3 DRAIN VLV. _____

[4] **ENSURE** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-90, SIS ACCUM TK 3 DRAIN VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, did NOT open (**Acc Crit**. 5.0X). _____

[9] **PLACE** Hand Switch 2-HS-63-90A, CL ACCUM 3 DRAIN, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-90A, CL ACCUM 3 DRAIN, red light ON. _____

B. 2-HS-63-90A, CL ACCUM 3 DRAIN, green light OFF. _____

C. 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, red light OFF. _____

D. 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.28 Valve 2-FCV-63-90 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-90A, CL ACCUM 3 DRAIN, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-90A, CL ACCUM 3 DRAIN, red light OFF. _____

B. 2-HS-63-90A, CL ACCUM 3 DRAIN, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-90, SIS ACCUM TK 3 DRAIN VLV TRF, to AUX. _____

[17] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc. Crit**. 5.0E). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-90A, CL ACCUM 3 DRAIN, red light OFF. _____

B. 2-HS-63-90A, CL ACCUM 3 DRAIN, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-90A, CL ACCUM 3 DRAIN, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, did NOT open (**Acc. Crit.** 5.0X). _____

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

6.28 Valve 2-FCV-63-90 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, stroke from control switch 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, to OPEN, and simultaneously time valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, stroke. _____

[22] **RECORD** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, OPEN stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, OPEN stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, red light ON. _____

B. 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-90A, CL ACCUM 3 DRAIN, to CLOSE. _____

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

6.28 Valve 2-FCV-63-90 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, did NOT close. _____

NOTE

Time the valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, stroke from control switch 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, and locally at the valve.

[27] **PLACE** Hand Switch 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, to CLOSE, and simultaneously time valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, stroke. _____

[28] **RECORD** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, CLOSE stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[29] **RECORD** valve 2-FCV-63-90, SIS ACCUM TK 3 DRAIN VLV, CLOSE stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, red light OFF. _____

B. 2-HS-63-90C, SIS ACCUM TK 3 DRAIN VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.28 Valve 2-FCV-63-90 Logic Test (continued)

[31] **PLACE** Transfer Switch 2-XS-63-90, SIS ACCUM TK 3 DRAIN VLV TRF, to NORMAL. _____

[32] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, CLEARS. _____

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

6.29 Valve 2-FCV-63-127 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.29 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-127, [IC/735 AZ50] SIS ACCUM TK 1 N2 MAKEUP VLV. _____

[4] **ENSURE** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, did NOT open (**Acc Crit**. 5.0X). _____

[9] **PLACE** Hand Switch 2-HS-63-127A, N2 TO CL ACCUM 1, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-127A, N2 TO CL ACCUM 1, red light ON. _____

B. 2-HS-63-127A, N2 TO CL ACCUM 1, green light OFF. _____

C. 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, red light OFF. _____

D. 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.29 Valve 2-FCV-63-127 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-127A, N2 TO CL ACCUM 1, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-127A, N2 TO CL ACCUM 1, red light OFF. _____

B. 2-HS-63-127A, N2 TO CL ACCUM 1, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-127A, N2 TO CL ACCUM 1, red light OFF. _____

B. 2-HS-63-127A, N2 TO CL ACCUM 1, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-127A, N2 TO CL ACCUM 1, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, did NOT open (**Acc. Crit**. 5.0X). _____

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

6.29 Valve 2-FCV-63-127 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, stroke from control switch 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, to OPEN, and simultaneously time valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, stroke. _____

[22] **RECORD** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, OPEN stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, OPEN stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, red light ON. _____

B. 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-127A, N2 TO CL ACCUM 1, to CLOSE. _____

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

6.29 Valve 2-FCV-63-127 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, did NOT close. _____

NOTE

Time the valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, stroke from control switch 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, and locally at the valve.

[27] **PLACE** Hand Switch 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, to CLOSE, and simultaneously time valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, stroke. _____

[28] **RECORD** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, CLOSE stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[29] **RECORD** valve 2-FCV-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV, CLOSE stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, red light OFF. _____

B. 2-HS-63-127C, SIS ACCUM TK 1 N2 MAKEUP VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.29 Valve 2-FCV-63-127 Logic Test (continued)

[31] **PLACE** Transfer Switch 2-XS-63-127, SIS ACCUM TK 1 N2 MAKEUP VLV TRF, to NORMAL. _____

[32] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, CLEARS. _____

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

6.30 Valve 2-FCV-63-77 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.29[31] are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-77, [IC716 AZ220] SIS ACCUM TK 3 FILL VLV. _____

[4] **ENSURE** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-77, SIS ACCUM TK 3 FILL VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, did NOT open (**Acc Crit.** 5.0X). _____

[9] **PLACE** Hand Switch 2-HS-63-77A, MAKEUP TO CL ACCUM 3, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-77A, MAKEUP TO CL ACCUM 3, red light ON. _____

B. 2-HS-63-77A, MAKEUP TO CL ACCUM 3, green light OFF. _____

C. 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, red light OFF. _____

D. 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.30 Valve 2-FCV-63-77 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-77A, MAKEUP TO CL ACCUM 3, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-77A, MAKEUP TO CL ACCUM 3, red light OFF. _____

B. 2-HS-63-77A, MAKEUP TO CL ACCUM 3, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-77, SIS ACCUM TK 3 FILL VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-77A, MAKEUP TO CL ACCUM 3, red light OFF. _____

B. 2-HS-63-77A, MAKEUP TO CL ACCUM 3, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-77A, MAKEUP TO CL ACCUM 3, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, did NOT open (**Acc. Crit**. 5.0X). _____

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

6.30 Valve 2-FCV-63-77 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, stroke from control switch 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, to OPEN, and simultaneously time the valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, stroke. _____

[22] **RECORD** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, red light ON. _____

B. 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-77A, MAKEUP TO CL ACCUM 3, to CLOSE. _____

[26] **VERIFY** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, did NOT close. _____

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

6.30 Valve 2-FCV-63-77 Logic Test (continued)

[27] **PLACE** Hand Switch 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, to CLOSE, and simultaneously time the valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, stroke. _____

[28] **RECORD** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, CLOSE stroke time (**Acc. Crit** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[29] **RECORD** valve 2-FCV-63-77, SIS ACCUM TK 3 FILL VLV, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, red light OFF. _____

B. 2-HS-63-77C, SIS ACCUM TK 3 FILL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[31] **PLACE** Transfer Switch 2-XS-63-77, SIS ACCUM TK 3 FILL VLV TRF, to NORMAL. _____

[32] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, CLEARS. _____

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

6.31 Valve 2-FCV-63-115 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.30[31] are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-115, [IC/716 AZ42] SIS ACCUM TK 1 FILL VLV. _____

[4] **ENSURE** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-115, SIS ACCUM TK 1 FILL VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, did not open (**Acc Crit**. 5.0X). _____

[9] **PLACE** Hand Switch 2-HS-63-115A, MAKEUP TO CL ACCUM 1, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-115A, MAKEUP TO CL ACCUM 1, red light ON. _____

B. 2-HS-63-115A, MAKEUP TO CL ACCUM 1, green light OFF. _____

C. 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, red light OFF. _____

D. 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.31 Valve 2-FCV-63-115 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-115A, MAKEUP TO CL ACCUM 1, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-115A, MAKEUP TO CL ACCUM 1, red light OFF. _____

B. 2-HS-63-115A, MAKEUP TO CL ACCUM 1, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-115, SIS ACCUM TK 1 FILL VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-115A, MAKEUP TO CL ACCUM 1, red light OFF. _____

B. 2-HS-63-115A, MAKEUP TO CL ACCUM 1, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-115A, MAKEUP TO CL ACCUM 1, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, did NOT open (**Acc. Crit** 5.0X). _____

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

6.31 Valve 2-FCV-63-115 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, stroke from control switch 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, to OPEN, and simultaneously time the valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, stroke. _____

[22] **RECORD** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, red light ON. _____

B. 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-115A, MAKEUP TO CL ACCUM 1, to CLOSE. _____

[26] **VERIFY** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, did NOT close. _____

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

6.31 Valve 2-FCV-63-115 Logic Test (continued)

[27] **PLACE** Hand Switch 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, to CLOSE, and simultaneously time the valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, stroke. _____

[28] **RECORD** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[29] **RECORD** valve 2-FCV-63-115, SIS ACCUM TK 1 FILL VLV, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, red light OFF. _____

B. 2-HS-63-115C, SIS ACCUM TK 1 FILL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[31] **PLACE** Transfer Switch 2-XS-63-115, SIS ACCUM TK 1 FILL VLV TRF, to NORMAL. _____

[32] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, CLEARS. _____

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

6.32 Valve 2-FCV-63-130 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.31[31] are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-130, [IC/716 AZ40] SIS ACCUM TK 1 DRAIN VLV. _____

[4] **ENSURE** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-130, SIS ACCUM TK 1 DRAIN VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, did NOT open (**Acc Crit**. 5.0X). _____

[9] **PLACE** Hand Switch 2-HS-63-130A, CL ACCUM 1 DRAIN, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-130A, CL ACCUM 1 DRAIN, red light ON. _____

B. 2-HS-63-130A, CL ACCUM 1 DRAIN, green light OFF. _____

C. 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, red light OFF. _____

D. 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.32 Valve 2-FCV-63-130 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-130A, CL ACCUM 1 DRAIN, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-130A, CL ACCUM 1 DRAIN, red light OFF. _____

B. 2-HS-63-130A, CL ACCUM 1 DRAIN, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-130, SIS ACCUM TK 1 DRAIN VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-130A, CL ACCUM 1 DRAIN, red light OFF. _____

B. 2-HS-63-130A, CL ACCUM 1 DRAIN, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-130A, CL ACCUM 1 DRAIN, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, did NOT open (**Acc. Crit.** 5.0X). _____

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

6.32 Valve 2-FCV-63-130 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, stroke from control switch 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, to OPEN, and simultaneously time the valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, stroke. _____

[22] **RECORD** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, red light ON. _____

B. 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-130A, CL ACCUM 1 DRAIN, to CLOSE. _____

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

6.32 Valve 2-FCV-63-130 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, did NOT close. _____

[27] **PLACE** Hand Switch 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, to CLOSE, and simultaneously time the valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, stroke. _____

[28] **RECORD** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[29] **RECORD** valve 2-FCV-63-130, SIS ACCUM TK 1 DRAIN VLV, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, red light OFF. _____

B. 2-HS-63-130C, SIS ACCUM TK 1 DRAIN VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[31] **PLACE** Transfer Switch 2-XS-63-130, SIS ACCUM TK 1 DRAIN VLV TRF, to NORMAL. _____

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

6.32 Valve 2-FCV-63-130 Logic Test (continued)

[32] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, CLEARS (**Acc Crit** 5.0D). _____

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

6.33 Valve 2-FCV-63-24 Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.33 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-24, [IC/734 AZ294] SIS ACCUM FILL LINE ISOLATION VLV. _____

[4] **ENSURE** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-24, SIS ACCUM FILL LINE ISOLATION VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, did NOT open (**Acc Crit**. 5.0X). _____

[9] **DEPRESS** the front lens for valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-24A, SIS ACCUM FILL LINE ISOLATION VLV, red light ON. _____

B. 2-HS-63-24A, SIS ACCUM FILL LINE ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[11] **PLACE** Hand Switch 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, to CLOSE. _____

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

6.33 Valve 2-FCV-63-24 Logic Test (continued)

[12] **VERIFY** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, did NOT close. _____

[13] **DEPRESS** the front lens for valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-24A, SIS ACCUM FILL LINE ISOLATION VLV, red light OFF. _____

B. 2-HS-63-24A, SIS ACCUM FILL LINE ISOLATION VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-24, SIS ACCUM FILL LINE ISOLATION VLV TRF, to AUX. _____

[17] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc. Crit.** 5.0E). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-24A, SIS ACCUM FILL LINE ISOLATION VLV, red light OFF. _____

B. 2-HS-63-24A, SIS ACCUM FILL LINE ISOLATION VLV, green light OFF. _____

[19] **DEPRESS** the front lens for valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[20] **VERIFY** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, did NOT open (**Acc. Crit.** 5.0X). _____

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

6.33 Valve 2-FCV-63-24 Logic Test (continued)

NOTE

Time the valve stroke from control switch 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, to OPEN, and simultaneously time the valve stroke. _____

[22] **RECORD** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV- 63-24, SIS ACCUM FILL LINE ISOLATION VLV, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, red light ON. _____

B. 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local) _____

[25] **DEPRESS** the front lens for valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, on switch module 2-XS-63-100, CKV LEAK TEST. _____

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

6.33 Valve 2-FCV-63-24 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, did NOT close. _____

[27] **PLACE** Hand Switch 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, to CLOSE, and simultaneously time the valve stroke. _____

[28] **RECORD** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[29] **RECORD** valve 2-FCV-63-24, SIS ACCUM FILL LINE ISOLATION VLV, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, red light OFF. _____

B. 2-HS-63-24C, SIS ACCUM FILL LINE ISOLATION VLV, green light ON. _____

C. Valve is CLOSE (Local). _____

[31] **PLACE** Transfer Switch 2-XS-63-24, SIS ACCUM FILL LINE ISOLATION VLV TRF, to NORMAL. _____

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

6.33 Valve 2-FCV-63-24 Logic Test (continued)

[32] **VERIFY** 2-XA-55-6F-148C, ACR PNL 2-L-11B XS IN AUX, is CLEAR (**Acc. Crit**. 5.0E). _____

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

6.34 RWST Immersion Heater C Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.34 are completed. _____

[2] **LOCATE** and **VERIFY** fuse 0-FU-217-B2/11 in 480V Chem &Vol Cont BD B Breaker at Compt. 2B (2-BKR-63-131). _____ 1st _____ CV

[3] **INSTALL** fuse 0-FU-217-B2/11 in 480V Chem &Vol Cont BD B Breaker at Compt. 2B (2-BKR-63-131), **AND**

DOCUMENT on Appendix B. _____

[4] **ENSURE** 480V Chem & Vol Cont BD B breaker at Compt. 2B (2-BKR-63-131) is CLOSED. _____

[5] **ENSURE** Hand Switch 2-HS-63-131, RWST TEMP, is in OFF. _____

[6] **ESTABLISH** communications between RWST and 480V Chem & Vol Cont BD B. _____

[7] **LOCATE** and **VERIFY** terminals 2B1 and 2B2 in Panel 2-JB-299-3715 [Y-PRT2/715]. _____ 1st _____ CV

[8] **INSTALL** a test jumper between terminals 2B1 and 2B2 in Panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

[9] **LOCATE** and **VERIFY** field side wires at the junction box for 2-TE-63-131, RWST TEMP, at the RWST. _____ 1st _____ CV

[10] **LIFT** the field side wires at the junction box for 2-TE-63-131, RWST TEMP, at the RWST, **AND**

DOCUMENT on Appendix E. _____

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

6.34 RWST Immersion Heater C Logic Test (continued)

[11] **ATTACH** a Biddle Digital TC/MV test set at the field leads lifted at 2-TE-63-131, RWST TEMP.

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[12] **INJECT** approximately a 58°F (57°F-59°F) signal at 2-TE-63-131, RWST TEMP. _____

[13] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 2B (2-BKR-63-131) is OFF (Breaker open). _____

[14] **PLACE** Hand Switch 2-HS-63-131, RWST TEMP, to AUTO. _____

[15] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 2B (2-BKR-63-131) is ON (Breaker closed) (**Acc. Crit**. 5.0V). _____

[16] **INJECT** approximately a 75°F (74°F-76°F) signal at 2-TE-63-131, RWST TEMP. _____

[17] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 2B (2-BKR-63-131) is OFF (Breaker open) (**Acc. Crit**. 5.0V). _____

[18] **INJECT** approximately a 58°F (57°F-59°F) signal at 2-TE-63-131, RWST TEMP. _____

[19] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 2B (2-BKR-63-131) is ON (Breaker closed). _____

[20] **LOCATE** and **VERIFY** 2B1 in Panel 2-JB-299-3715. _____ 1st

_____ CV

[21] **LIFT** the test jumper lead at terminal 2B1 in Panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

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

6.34 RWST Immersion Heater C Logic Test (continued)

[22] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 2B (2-BKR-63-131) is OFF (Breaker open). _____

[23] **LOCATE** and **VERIFY** 2B1 in Panel 2-JB-299-3715. _____ 1st _____ CV

[24] **RESTORE** the test jumper lead at terminal 2B1 in panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

[25] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 2B (2-BKR-63-131) is ON (Breaker closed). _____

[26] **PLACE** Hand Switch 2-HS-63-131, RWST TEMP, to OFF. _____

[27] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 2B (2-BKR-63-131) is OFF (Breaker open). _____

[28] **REMOVE** the Biddle Digital TC/MV test set from the field leads lifted at 2-TE-63-131, RWST TEMP. _____ 1st _____ CV

[29] **LOCATE** and **VERIFY** the field side wires lifted at the junction box for 2-TE-63-131, RWST TEMP, at the RWST. _____ 1st _____ CV

[30] **RESTORE** the field side wires lifted at the junction box for 2-TE-63-131, RWST TEMP, at the RWST, **AND**

DOCUMENT on Appendix E. _____

[31] **LOCATE** and **VERIFY** terminals 2B1 and 2B2 in Panel 2-JB-299-3715. _____ 1st _____ CV

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

6.34 RWST Immersion Heater C Logic Test (continued)

[32] **REMOVE** the test jumper installed between terminals 2B1 and 2B2 in Panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

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

6.35 RWST Immersion Heater D Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.35 are completed. _____

[2] **LOCATE** and **VERIFY** fuse 0-FU-217-B3/11 in 480V Chem &Vol Cont BD B Breaker at Compt. 3B (2-BKR-63-132). _____ 1st _____ CV

[3] **INSTALL** fuse 0-FU-217-B3/11 in 480V Chem &Vol Cont BD B Breaker at Compt. 3B (2-BKR-63-132), **AND**

DOCUMENT on Appendix B. _____

[4] **ENSURE** 480V Chem & Vol Cont BD B breaker at Compt. 3B (2-BKR-63-132) is CLOSED. _____

[5] **ENSURE** Hand Switch 2-HS-63-132, RWST TEMP, is in OFF. _____

[6] **ESTABLISH** communications between RWST and 480V Chem & Vol Cont BD A. _____

[7] **LOCATE** and **VERIFY** terminals 3B1 and 3B2 in Panel 2-JB-299-3715 [Y-PRT2/715]. _____ 1st _____ CV

[8] **INSTALL** a test jumper between terminals 3B1 and 3B2 in Panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

[9] **LOCATE** and **VERIFY** the field side wires at the junction box for 2-TE-63-132, RWST TEMP, at the RWST. _____ 1st _____ CV

[10] **LIFT** the field side wires at the junction box for 2-TE-63-132, RWST TEMP, at the RWST, **AND**

DOCUMENT on Appendix E. _____

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

6.35 RWST Immersion Heater D Logic Test (continued)

[11] **ATTACH** a Biddle Digital TC/MV test set at the field leads lifted at 2-TE-63-132, RWST TEMP.

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[12] **INJECT** approximately a 58°F (57°F-59°F) signal at 2-TE-63-132, RWST TEMP. _____

[13] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 3B (2-BKR-63-132) is OFF (Breaker open). _____

[14] **PLACE** Hand Switch 2-HS-63-132, RWST TEMP, to AUTO. _____

[15] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 3B (2-BKR-63-132) is ON (Breaker closed) (**Acc. Crit.** 5.0W). _____

[16] **INJECT** approximately a 75°F (74°F-76°F) signal at 2-TE-63-132, RWST TEMP. _____

[17] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 3B (2-BKR-63-132) is OFF (Breaker open) (**Acc. Crit.** 5.0W). _____

[18] **INJECT** approximately a 58°F (57°F-59°F) signal at 2-TE-63-132, RWST TEMP. _____

[19] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 3B (2-BKR-63-132) is ON (Breaker closed). _____

[20] **LOCATE** and **VERIFY** terminal 3B1 in Panel 2-JB-299-3715. _____ 1st

_____ CV

[21] **LIFT** the test jumper lead at terminal 3B1 in Panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

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

6.35 RWST Immersion Heater D Logic Test (continued)

[22] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 3B (2-BKR-63-132) is OFF (Breaker open). _____

[23] **LOCATE** and **VERIFY** terminal 3B1 in Panel 2-JB-299-3715. _____ 1st _____ CV

[24] **RESTORE** the test jumper lead at terminal 3B1 in panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

[25] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 3B (2-BKR-63-132) is ON (Breaker closed). _____

[26] **PLACE** Hand Switch 2-HS-63-132, RWST TEMP, to OFF. _____

[27] **VERIFY** the red light on 480V Chem & Vol Cont BD B breaker at Compt 3B (2-BKR-63-132) is OFF (Breaker open). _____

[28] **REMOVE** the Biddle Digital TC/MV test set from the field leads lifted at 2-TE-63-132, RWST TEMP. _____ 1st _____ CV

[29] **LOCATE** and **VERIFY** the field side wires lifted at the junction box for 2-TE-63-132, RWST TEMP, at the RWST. _____ 1st _____ CV

[30] **RESTORE** the field side wires lifted at the junction box for 2-TE-63-132, RWST TEMP, at the RWST, **AND**

DOCUMENT on Appendix E. _____

[31] **LOCATE** and **VERIFY** terminals 3B1 and 3B2 in Panel 2-JB-299-3715. _____ 1st _____ CV

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

6.35 RWST Immersion Heater D Logic Test (continued)

[32] **REMOVE** the test jumper installed between terminals 3B1 and 3B2 in Panel 2-JB-299-3715, **AND**

DOCUMENT on Appendix E. _____

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

6.36 Safety Injection Pump A-A Logic Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.36 are completed. _____

[2] **LOCATE** and **VERIFY** the following relays in 6900V Shutdown Board 2A-A Logic Relay Panel:

A. SIP BOX Relay _____ 1st _____ CV

B. SIP BOY Relay _____ 1st _____ CV

C. SIP UVX Relay _____ 1st _____ CV

D. SIP UVY Relay _____ 1st _____ CV

E. SIATX Relay _____ 1st _____ CV

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[3] **ENSURE** the following relays in 6900V Shutdown Board 2A-A Logic Relay Panel are removed, **AND**

DOCUMENT on Appendix E:

A. SIP BOX Relay _____

B. SIP BOY Relay _____

C. SIP UVX Relay _____

D. SIP UVY Relay _____

E. SIATX Relay _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[4] **LOCATE** and **VERIFY** the following relay socket terminals in the rear of 6900V Shutdown Board 2A-A Logic Relay Panel:

A. 9C to 9D for relay SIP BOX _____ 1st _____ CV

B. 11C to 11D for relay SIP BOY _____ 1st _____ CV

C. 9C to 9F for relay SIP UVX _____ 1st _____ CV

D. 11C to 11F for relay SIP UVY _____ 1st _____ CV

E. 9A to 9D for relay SIP UVX _____ 1st _____ CV

F. 11A to 11D for relay SIP UVY _____ 1st _____ CV

G. 17A to 17D for relay SIATX _____ 1st _____ CV

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[5] **INSTALL** jumpers with test switches in the open position between the following relay socket terminals in the rear of 6900V Shutdown Board 2A-A Logic Relay Panel, **AND**

DOCUMENT on Appendix E:

A. 9C to 9D for relay SIP BOX _____

B. 11C to 11D for relay SIP BOY _____

C. 9C to 9F for relay SIP UVX _____

D. 11C to 11F for relay SIP UVY _____

E. 9A to 9D for relay SIP UVX _____

F. 11A to 11D for relay SIP UVY _____

G. 17A to 17D for relay SIATX _____

[6] **CLOSE** the test switch for the following jumpers:

A. 9C to 9D for relay SIP BOX _____

B. 11C to 11D for relay SIP BOY _____

C. 9C to 9F for relay SIP UVX _____

D. 11C to 11F for relay SIP UVY _____

[7] **LOCATE** and **VERIFY** terminals TB619-7 and TB619-8 in cabinet 2-R-48.

_____ 1st

_____ CV

[8] **INSTALL** a jumper with test switch open across terminals TB619-7 and TB619-8 on the field side of the plastic isolators in cabinet 2-R-48 (SI signal), **AND**

DOCUMENT on Appendix E. _____

[9] **ENSURE** 480V CONT & AUX BLDG VENT BD 2A1-A breaker 8A (2-BKR-30-180-A) (SI pump 2A-A RM Cooler Fan) is OPEN. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[10] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

NOTE

Safety related 6900V breakers that are not installed in the full connect position in the 6900V Shutdown Boards will be maintained in a seismic position by racking the breaker wheels slightly off the floor or restrained with c-clamps on the front wheels on the floor.

[11] **RACK DOWN** breaker 2-BKR-63-10-A in compartment 15 of 6900V Shutdown Board 2A-A, **OR**

REMOVE seismic restrains, **AND**

PLACE breaker in the TEST position in accordance with GOI-07 except the elevating mechanism will not be raised. _____

[12] **FULLY RAISE** the elevator mechanism in compartment 15 of 6900V Shutdown Board 2A-A. _____

NOTE

Lifting of the interlock mechanism on the breaker during installation of the Electrical DC Test Coupler cable between the breaker and board will prevent the breaker from charging and arcing of the secondary disconnect pins.

[13] **LIFT UP** the breaker interlock mechanism, **AND**

CONNECT the Electrical DC Test Coupler between the breaker and board secondary disconnects. _____

[14] **RELEASE** the breaker interlock mechanism, **AND**

VERIFY that the breaker charges. _____

[15] **INSTALL** STA mechanical test linkage in accordance with GOI-7 between breaker 2-BKR-63-10-A and Switch 52 STA in compartment 15 of 6900V Shutdown Board 2A-A with the breaker in the test position. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[16] **ESTABLISH** communications between MCR Panel 2-M-6, 6.9kV SD Bd 2A-A, and 6900V Shutdown Board 2A-A Logic Relay Panel. _____

[17] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. HD2004 _____

B. XD2026 _____

C. XD2028 _____

[18] **VERIFY** ICS point XD2028 displays "PWR OFF". _____

[19] **PRESS** the TEST CLOSE pushbutton located on the inside of the compartment door on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[20] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker CLOSES by observing the red flag. _____

[21] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, red light OFF. _____

B. Compt 15 (2-BKR-63-10-A) green light OFF. _____

C. Compt 15 (2-BKR-63-10-A) red light ON. _____

D. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light OFF. _____

[22] **PRESS** the TEST TRIP pushbutton on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[23] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker OPENS by observing the green flag. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[24] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, red light OFF. _____

B. Compt 15 (2-BKR-63-10-A) green light ON. _____

C. Compt 15 (2-BKR-63-10-A) red light OFF. _____

D. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light OFF. _____

[25] **REMOVE** the electrical DC test coupler, mechanical test link and breaker from 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A). _____

[26] **RAISE** 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A) breaker elevator until elevator reaches full up position in accordance with GOI-7. _____

[27] **INSTALL** breaker in 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A) into the test position in accordance with GOI-7. _____

NOTE

Lifting of the interlock mechanism on the breaker during installation of the Electrical DC Test Coupler cable between the breaker and board will prevent the breaker from charging and arcing of the secondary disconnect pins.

[28] **LIFT UP** the breaker interlock mechanism, **AND**

CONNECT the Electrical DC Test Coupler between the breaker and board secondary disconnects. _____

[29] **RELEASE** the breaker interlock mechanism, **AND**

VERIFY that the breaker charges. _____

[30] **INSTALL** STA mechanical test linkage in accordance with GOI-7 between breaker 2-BKR-63-10-A and Switch 52 STA in compartment 15 of 6900V Shutdown Board 2A-A with the breaker in the test position. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[31] **INSTALL** mechanical link on 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A) breaker. _____

[32] **VERIFY** ICS point XD2028 displays "PWR ON" **(Acc Crit 5.0T)**. _____

[33] **ESTABLISH** communications between MCR Panel 2-M-6, 6900V Shutdown Board 2A-A, SSPS cabinet 2-R-48, and the local control switch 2-HS-63-10B, SIS PUMP A-A MOTOR. _____

[34] **ENSURE** Transfer Switch 2-XS-63-10, SIS PUMP A-A MOTOR TRF, is NORMAL. _____

[35] **ENSURE** Hand Switch 2-HS-63-10A, SI PMP A, is in STOP/PULL TO LOCK. _____

[36] **VERIFY** ICS point HD2004 displays "PULLT-L". _____

[37] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, green light ON. _____

B. 2-HS-63-10A, SI PMP A, red light OFF. _____

C. Compt 15 (2-BKR-63-10-A) green light ON. _____

D. Compt 15 (2-BKR-63-10-A) red light OFF. _____

E. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light OFF. _____

F. Compt 15 (2-BKR-63-10-A) breaker OPEN (green flag). _____

NOTE

Hand Switch 2-HS-63-10A, SI PMP A, spring returns to A AUTO.

[38] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to A AUTO. _____

[39] **VERIFY** ICS point HD2004 displays "NOT P-L" **(Acc Crit 5.0T)**. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[40] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[41] **ENSURE** 2-HS-30-180, SIS PUMP ROOM COOLER, is in AUTO. _____

[42] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, green light ON. _____

B. 2-HS-63-10A, SI PMP A, red light OFF. _____

C. 2-HS-63-10A, SI PMP A, white light OFF. _____

D. Compt 15 (2-BKR-63-10-A) green light ON. _____

E. Compt 15 (2-BKR-63-10-A) red light OFF. _____

F. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light OFF. _____

G. Compt 15 (2-BKR-63-10-A) breaker OPEN (green flag). _____

[43] **ATTACH** a cool damp cloth (or a baggie of ice) to the bulb of the temperature sensor for cooler 2-PMCL-30-180, SIS PUMP ROOM COOLER. _____

[44] **VERIFY** cooler 2-PMCL-30-180, SIS PUMP ROOM COOLER, is OFF. _____

[45] **VERIFY** ICS point XD2026 displays "NOT RUN". _____

[46] **PUSH** 2-HS-63-10B START pushbutton **AND**

RELEASE. _____

[47] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker CLOSES by observing the red flag. _____

[48] **VERIFY** cooler 2-PMCL-30-180, SIS PUMP ROOM COOLER, STARTS (**Acc. Crit**. 5.0BB). _____

[49] **VERIFY** ICS point XD2026 displays "RUNNING". (**Acc. Crit**. 5.0T). _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[50] **PUSH** 2-HS-63-10B STOP pushbutton **AND**

RELEASE. _____

[51] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker OPENS by observing the green flag. _____

[52] **VERIFY** ICS point XD2026 displays "NOT RUN". _____

[53] **VERIFY** cooler 2-PMCL-30-180, SIS PUMP ROOM COOLER, STOPS. _____

[54] **PLACE** Hand Switch 2-HS-63-10C, SIS PUMP A-A MOTOR, to START, **AND**

RELEASE. _____

[55] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker did NOT close by observing the green flag. (**Acc Crit** 5.0AA) _____

[56] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to START, **AND**

RELEASE. _____

[57] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is CLOSED by observing the red flag. _____

[58] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, green light OFF. _____

B. 2-HS-63-10A, SI PMP A, red light ON. _____

C. 2-HS-63-10A, SI PMP A, white light OFF. _____

D. Compt 15 (2-BKR-63-10-A) green light OFF. _____

E. Compt 15 (2-BKR-63-10-A) red light ON. _____

F. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light ON. (**Acc Crit** 5.0P) _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[59] **PLACE** Hand Switch 2-HS-63-10C, SIS PUMP A-A MOTOR, to STOP, **AND**

RELEASE. _____

[60] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker did NOT open by observing the red flag (**Acc. Crit**. 5.0AA). _____

[61] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[62] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by observing the green flag. _____

[63] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, green light ON. _____

B. 2-HS-63-10A, SI PMP A, red light OFF. _____

C. 2-HS-63-10A, SI PMP A, white light OFF. _____

D. Compt 15 (2-BKR-63-10-A) green light ON. _____

E. Compt 15 (2-BKR-63-10-A) red light OFF. _____

F. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light OFF. _____

[64] **ENSURE** 2–XA–55–6F–149A, 6.9 SD BD 2A-A, is CLEAR. _____

[65] **PLACE** Transfer Switch 2-XS-63-10, SIS PUMP A-A MOTOR TRF, to AUX. _____

[66] **VERIFY** 2–XA–55–6F–149A, 6.9 SD BD 2A-A, ALARMS (**Acc Crit** 5.0U). _____

[67] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to START, **AND**

RELEASE. _____

[68] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker did NOT close by observing the green flag (**Acc. Crit**. 5.0AA). _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[69] **PLACE** Hand Switch 2-HS-63-10C, SIS PUMP A-A MOTOR, to START, **AND**

RELEASE. _____

[70] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is CLOSED by observing the red flag. _____

[71] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, green light OFF. _____

B. 2-HS-63-10A, SI PMP A, red light OFF. _____

C. 2-HS-63-10A, SI PMP A, white light OFF. _____

D. Compt 15 (2-BKR-63-10-A) green light OFF. _____

E. Compt 15 (2-BKR-63-10-A) red light ON. _____

F. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light ON. _____

[72] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[73] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker did NOT open by observing the red flag. (**Acc. Crit**. 5.0AA) _____

[74] **PLACE** Hand Switch 2-HS-63-10C, SIS PUMP A-A MOTOR, to STOP, **AND**

RELEASE. _____

[75] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by observing the green flag. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[76] **VERIFY** the following indications:

A. 2-HS-63-10A, SI PMP A, green light OFF. _____

B. 2-HS-63-10A, SI PMP A, red light OFF. _____

C. 2-HS-63-10A, SI PMP A, white light OFF. _____

D. Compt 15 (2-BKR-63-10-A) green light ON. _____

E. Compt 15 (2-BKR-63-10-A) red light OFF. _____

F. 6.9KV 2A-A Logic Panel SI Pump 2A-A red light OFF. _____

[77] **PLACE** Transfer Switch 2-XS-63-10, SIS PUMP A-A MOTOR TRF, to NORMAL. _____

[78] **VERIFY** 2–XA–55–6F–149A, 6.9 SD BD 2A-A, is CLEAR. _____

[79] **CLOSE** the test switch on jumper connecting 17A to 17D for relay SIATX on Shutdown Board 2A-A Logic Relay Panel. _____

[80] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is CLOSED by observing the red flag. _____

[81] **OPEN** the test switch on jumper connecting 17A to 17D for relay SIATX. _____

[82] **OPEN** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[83] **CLOSE** the test switch on jumper connecting terminals TB619-7 and TB619-8 in cabinet 2-R-48. _____

[84] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is CLOSED by observing the red flag (**Acc Crit** 5.0S). _____

[85] **OPEN** the test switch on jumper connecting terminals TB619-7 and TB619-8 in cabinet 2-R-48. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[86] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker remains CLOSED by observing the red flag. (**Acc Crit** 5.0S) _____

[87] **CLOSE** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[88] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker remains CLOSED by observing the red flag. _____

[89] **OPEN** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[90] **CLOSE** the test switch connecting terminals 11A to 11D for relay SIP UVY. _____

[91] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker remains CLOSED by observing the red flag. _____

[92] **CLOSE** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[93] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by observing the green flag. _____

[94] **OPEN** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[95] **OPEN** the test switch connecting terminals 11A to 11D for relay SIP UVY. _____

[96] **OPEN** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[97] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[98] **CLOSE** the test switch connecting terminals TB619-7 and TB619-8 on the field side in cabinet 2-R-48. _____

[99] **CLOSE** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[100] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is CLOSED by observing the red flag. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[101] **OPEN** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[102] **OPEN** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[103] **CLOSE** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[104] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is CLOSED by observing the red flag. _____

[105] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[106] **OPEN** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[107] **OPEN** the test switch connecting terminals 9C to 9D for relay SIP BOX. _____

[108] **OPEN** the test switch connecting terminals 11C to 11D for relay SIP BOY. _____

NOTE

Steps 6.36[109] through 6.36[121] will test breaker closing through time delay relay SIP/ST which has approximately a 10 sec delay time.

[109] **CLOSE** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[110] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker CLOSES after a short delay, by observing the red flag. _____

[111] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[112] **OPEN** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[113] **CLOSE** the test switch connecting terminals 9C to 9D for relay SIP BOX. _____

[114] **CLOSE** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[115] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker CLOSES after a short delay, by observing the red flag. _____

[116] **OPEN** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[117] **OPEN** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[118] **OPEN** the test switch connecting terminals 9C to 9D for relay SIP BOX. _____

[119] **CLOSE** the test switch connecting terminals 11C to 11D for relay SIP BOY. _____

[120] **CLOSE** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[121] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker CLOSES after a short delay, by observing the red flag. _____

[122] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[123] **OPEN** the test switch on jumper connecting terminals TB619-7 and TB619-8 on the field side in cabinet 2-R-48. _____

[124] **ENSURE** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, is CLEAR. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[125] **MANUALLY ACTUATE** the instantaneous over current relay 50 AØ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A), **AND**

RELEASE. _____

[126] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by observing the green flag. _____

[127] **VERIFY** the trip target is actuated on instantaneous over current relay 50 AØ, on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[128] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

[129] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (**Acc Crit** 5.0Q). _____

[130] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in Alarm. _____

[131] **RESET** the trip target on instantaneous over current relay 50 AØ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[132] **PLACE** Hand Switch 2-HS-63-10A to STOP, **AND**

RELEASE. _____

[133] **VERIFY** 2-HS-63-10A, SI PMP A, white light is OFF. _____

[134] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, is CLEAR. _____

[135] **VERIFY** audible buzzer is silent. _____

[136] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in clear. _____

[137] **CLOSE** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to START, **AND**

RELEASE. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[138] **MANUALLY ACTUATE** the instantaneous over current relay 50 CØ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) **AND**

RELEASE. _____

[139] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by observing the green flag. _____

[140] **VERIFY** the trip target is actuated on instantaneous over current relay 50 CØ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[141] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

[142] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (**Acc Crit** 5.0Q). _____

[143] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in Alarm. _____

[144] **RESET** the trip target on instantaneous over current relay 50 CØ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[145] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[146] **VERIFY** 2-HS-63-10A, SI PMP A, white light is OFF. _____

[147] **CLEAR** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT. _____

[148] **CLOSE** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to START, **AND**

RELEASE. _____

[149] **ENSURE** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, is CLEAR. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[150] **CLOSE** the contacts Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by manually rotating the disk, **AND**

HOLD. _____

[151] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

[152] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, ALARMS. _____

[153] **VERIFY** Events Display Monitor indicates, 14D, M-1 THRU M-6 MOTOR OVERLOAD, is in Alarm. _____

[154] **RELEASE** the disk on Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[155] **VERIFY** 2-HS-63-10A, SI PMP A, white light is OFF. _____

[156] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, CLEARS. _____

[157] **VERIFY** Events Display Monitor indicates, 14D, M-1 THRU M-6 MOTOR OVERLOAD, is clear. _____

CAUTION

Enlist the help of the Relay Protection Group when manually rotating the induction disk so as to not bend or break the contacts.

[158] **CLOSE** the contacts on Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by manually rotating the disk, **AND**

HOLD. _____

[159] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, ALARMS (**Acc Crit** 5.0R). _____

[160] **VERIFY** Events Display Monitor indicates, 14D, M-1 THRU M-6 MOTOR OVERLOAD, is in Alarm. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[161] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

[162] **LOCATE** and **VERIFY** terminals 9 and 10 on the back of Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____ 1st _____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[163] **MOMENTARILY PLACE** a jumper across terminals 9 and 10 on the back of Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[164] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by verifying the green flag. _____

[165] **VERIFY** the trip target is actuated on Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[166] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

[167] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (**Acc Crit** 5.0Q). _____

[168] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in Alarm. _____

[169] **RELEASE** the disk on Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[170] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[171] **RESET** the trip target on Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[172] **CLEAR** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[173] **CLOSE** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A, SI PMP A, to START, **AND**

RELEASE. _____

[174] **CLOSE** the contacts on Relay 51/83 C∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by manually rotating the disk, **AND**

HOLD. _____

[175] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, ALARMS (**Acc Crit** 5.0R). _____

[176] **VERIFY** Events Display Monitor indicates, 14D, M-1 THRU M-6 MOTOR OVERLOAD, is in Alarm. _____

[177] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

[178] **LOCATE** and **VERIFY** terminals 9 and 10 on the back of Relay 51/83 C∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____ 1st

_____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[179] **MOMENTARILY PLACE** a jumper across terminals 9 and 10 on the back of Relay 51/83 C∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[180] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by observing the green flag. _____

[181] **VERIFY** the trip target is actuated on Relay 51/83 A∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[182] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[183] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (**Acc Crit** 5.0Q). _____

[184] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in Alarm. _____

[185] **RELEASE** the disk on Relay 51/83 C∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[186] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[187] **RESET** the trip target on Relay 51/83 C∅ on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker. _____

[188] **CLEAR** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD. _____

[189] **CLOSE** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker by placing Hand Switch 2-HS-63-10A to START, **AND**

RELEASE. _____

[190] **MANUALLY ACTUATE** ground fault relay 50G on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A). _____

[191] **VERIFY** 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A) breaker is OPEN by observing the green flag. _____

[192] **VERIFY** 2-HS-63-10A, SI PMP A, white light is ON. _____

[193] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (**Acc Crit** 5.0Q). _____

[194] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in Alarm. _____

[195] **VERIFY** ground fault relay 50G trip target is actuated on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A). _____

[196] **RESET** ground fault relay 50G trip target on 6.9kV SD Bd 2A-A Compt 15 (2-BKR-63-10-A). _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[197] **PLACE** Hand Switch 2-HS-63-10A, SI PMP A, to STOP, **AND**

RELEASE. _____

[198] **REMOVE** damp cloth (or a baggie of ice) from the bulb of the temperature sensor for cooler 2-PMCL-30-180, SIS PUMP ROOM COOLER. _____

[199] **REMOVE** umbilical cord on 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A) breaker. _____

[200] **REMOVE** test link on 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A) breaker. _____

[201] **REMOVE** the breaker from 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A). _____

[202] **LOWER** 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A) breaker elevator until elevator reaches full down position. _____

[203] **REPLACE** the breaker into 6.9kV SD Bd 2A-A Compt. 15 (2-BKR-63-10-A) in the seismic position. _____

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

6.36 Safety Injection Pump A-A Logic Test (continued)

[204] **REMOVE** temporary jumpers from the following relay socket terminals in the rear of 6900V Shutdown Board 2A-A Logic Relay Panel, **AND**

DOCUMENT on Appendix E:

A. 9C to 9D for relay SIP BOX _____

B. 11C to 11D for relay SIP BOY _____

C. 9C to 9F for relay SIP UVX _____

D. 11C to 11F for relay SIP UVY _____

E. 9A to 9D for relay SIP UVX _____

F. 11A to 11D for relay SIP UVY _____

G. 17A to 17D for relay SIATX _____

[205] **LOCATE** and **VERIFY** terminals TB619-7 and TB619-8 in cabinet 2-R-48. _____ 1st _____ CV

[206] **REMOVE** the jumper across terminals TB619-7 and TB619-8 on the field side of the plastic isolators in cabinet 2-R-48. _____

[207] **REINSTALL** the following relays in 6900V Shutdown Board 2A-A Logic Relay Panel **OR** enter N/A for the relay and explain in the Test Log, **AND**

DOCUMENT on Appendix E:

A. SIP BOX Relay _____

B. SIP BOY Relay _____

C. SIP UVX Relay _____

D. SIP UVY Relay _____

E. SIATX Relay _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test

[1] **VERIFY** Prerequisites in Section 4.0 for Section 6.37 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **LOCATE** and **VERIFY** switch 13 in the 2-FCV-74-3, RHR A-A SUCTION ISOLATION, valve switch compartment. _____ 1st _____ CV

[4] **LOCATE** and **VERIFY** switch 13 in the 2-FCV-74-21, RHR B-B SUCTION ISOLATION, valve switch compartment. _____ 1st _____ CV

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

CAUTION

Opening valves 2-FCV-63-72, CNTMT SUMP TO RHR PUMP A-A, or 2-FCV-63-73, CNTMT SUMP TO RHR PUMP B-B, may provide a direct flow path from the RWST to the Reactor Containment Sump.

[5] **ENSURE** the following valve positions:

A. 2-FCV-63-72 CLOSE _____

B. 2-FCV-63-1 OPEN _____

C. 2-FCV-63-3 OPEN _____

D. Simulate 2-FCV-74-3, RHR A-A SUCTION ISOLATION, OPEN by inserting non-conducting material at switch 13 in the valve switch compartment, **AND**

DOCUMENT on Appendix E. _____

E. 2-FCV-70-156 [A10T/713] CLOSE _____

F. 2-FCV-72-44 [A12V/692] CLOSE _____

G. 2-FCV-63-73 CLOSE _____

H. 2-FCV-63-4 OPEN _____

I. 2-FCV-70-153 [A10T/713] CLOSE _____

J. Simulate 2-FCV-74-21, [A10U/676] RHR B-B SUCTION ISOLATION, OPEN by inserting non-conducting material at switch 13 in the valve switch compartment, **AND**

DOCUMENT on Appendix E. _____

K. 2-FCV-63-175 OPEN _____

L. 2-FCV-63-5 OPEN _____

M. 2-FCV-72-45 [A12V/692] CLOSE _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

N. 2-FCV-63-8 CLOSE _____

O. 2-FCV-63-11 CLOSE _____

[6] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[7] **OPEN** valve 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A. _____

[8] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[9] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[10] **CLOSE** valve 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A. _____

[11] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[12] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[13] **CLOSE** valve 2-FCV-63-1, RWST TO RHR PUMP. _____

[14] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[15] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[16] **OPEN** valve 2-FCV-63-1, RWST TO RHR PUMP. _____

[17] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[18] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[19] **CLOSE** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[20] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[21] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[22] **OPEN** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST. _____

[23] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[24] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[25] **OPEN** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B. _____

[26] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[27] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[28] **CLOSE** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B. _____

[29] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[30] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[31] **CLOSE** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF. _____

[32] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[33] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[34] **OPEN** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[35] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[36] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[37] **CLOSE** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV. _____

[38] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[39] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[40] **OPEN** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV. _____

[41] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[42] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[43] **CLOSE** valve 2-FCV-63-5, RWST TO SIS PUMP. _____

[44] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[45] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[46] **OPEN** valve 2-FCV-63-5, RWST TO SIS PUMP. _____

[47] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[48] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[49] **LOCATE** and **VERIFY** terminals for wire Nos. ML2AX and ML2A1 in valve 2-FCV-63-8, RHR PMP 2A-A TO CHG PUMP & SIP 2A-A ISOL, rotor switch compartment (simulates valve 2-FCV-63-8, RHR PMP 2A-A TO CHG PUMP & SIP 2A-A ISO, open) (Terminals 81 and 85).

_____ 1st

_____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[50] **MOMENTARILY PLACE** a handheld jumper across terminals for wire Nos. ML2AX and ML2A1 in valve 2-FCV-63-8, RHR PMP 2A-A TO CHG PUMP & SIP 2A-A ISOL, rotor switch compartment (simulates valve 2-FCV-63-8, RHR PMP 2A-A TO CHG PUMP & SIP 2A-A ISO, open) (Terminals 81 and 85). _____

[51] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[52] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[53] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[54] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[55] **LOCATE** and **VERIFY** terminals for wire Nos. ML2BX and ML2B1 in valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, rotor switch compartment (simulates valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, open) (Terminals 81 and 85).

_____ 1st

_____ CV

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[56] **MOMENTARILY PLACE** a handheld jumper across terminals for wire Nos. ML2BX and ML2B1 in valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, rotor switch compartment (simulates valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, open) (Terminals 81 and 85). _____

[57] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[58] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Alarm. _____

[59] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[60] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION LINE UP, Normal. _____

[61] **CLOSE** the following valves:

A. 2-FCV-63-1 CLOSE _____

B. 2-FCV-63-3 CLOSE _____

C. 2-FCV-63-4 CLOSE _____

D. 2-FCV-63-175 CLOSE _____

E. 2-FCV-63-5 [A11U/692] CLOSE _____

[62] **LOCATE** and **VERIFY** switch 13 in the 2-FCV-62-98, [A11U/715] SIS ACCUMULATOR TANK 2 FLOW ISOL VLV, valve switch compartment. _____

1st

_____

CV

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

CAUTION

Opening valves 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, 2-FCV-63-26, SIS BORON INJECTION TANK SHUTOFF VALVE, 2-FCV-63-39, SIS BORON INJ TANK INLET SHUTOFF VALVE, or 2-FCV-63-40, SIS BORON INJ TANK INLET SHUTOFF VALVE, may provide a direct flow path from the RWST to the Reactor Containment Sump.

[63] **ENSURE** the following valve positions:

A. 2-FCV-63-26 CLOSE _____

B. Simulate 2-FCV-62-98, SIS ACCUMULATOR TANK 2 FLOW ISOL VLV, open by inserting non-conducting material at switch 13 in the valve switch compartment, **AND**

DOCUMENT on Appendix E. _____

C. 2-FCV-62-63 [A11W/713] OPEN _____

D. 2-FCV-62-61[IC/726 AZ280] OPEN _____

E. 2-FCV-63-25 [A11W/713] CLOSE _____

F. 2-FCV-62-99 [A11U/715] OPEN _____

[64] **ENSURE** 6.9kV SD Bd 2A-A Compt 15 breaker is OPEN by observing the green flag. _____

[65] **ENSURE** 6.9kV SD Bd 2B-B Compt 15 breaker is OPEN by observing the green flag. _____

[66] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[67] **OPEN** valve 2-FCV-63-26, SIS BORON INJECTION TANK SHUTOFF VALVE. _____

[68] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[69] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Alarm. _____

[70] **CLOSE** valve 2-FCV-63-26, SIS BORON INJECTION TANK SHUTOFF VALVE. _____

[71] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[72] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Normal. _____

[73] **OPEN** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE. _____

[74] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[75] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Alarm. _____

[76] **CLOSE** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE. _____

[77] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[78] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Normal. _____

[79] **LOCATE** and **VERIFY** terminals 1 and 2 (Wire Nos. CC7 and CC8) on the 52STA terminal strip inside 6.9kV SD Bd 2A-A Compt 15 breaker compartment. _____

1st

_____

CV

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[80] **MOMENTARILY PLACE** a jumper across terminals 1 and 2 (Wire Nos. CC7 and CC8) on the 52STA terminal strip inside 6.9kV SD Bd 2A-A Compt 15 breaker compartment (SI pump running). _____

[81] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[82] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Alarm. _____

[83] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[84] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Normal. _____

[85] **LOCATE** and **VERIFY** terminals 1 and 2 (Wire Nos. CC7 and CC8) on the 52STA terminal strip inside 6.9kV SD Bd 2B-B Compt 15 breaker compartment. _____

1st

_____

CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[86] **MOMENTARILY PLACE** a jumper across terminals 1 and 2 (Wire Nos. CC7 and CC8) on the 52STA terminal strip inside 6.9kV SD Bd 2B-B Compt 15 breaker compartment (SI pump running). _____

[87] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[88] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Alarm. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[89] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[90] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL CCP FLOW PATH / SIP RUNNING, Normal. _____

[91] **CLOSE** the following valves:

A. 2-FCV-62-63 CLOSE _____

B. 2-FCV-62-61 CLOSE _____

C. 2-FCV-62-99 CLOSE _____

[92] **ENSURE** the following valve positions:

A. 2-FCV-72-40 CLOSE _____

B. 2-FCV-74-33 [A9W/728] OPEN _____

C. 2-FCV-63-47 OPEN _____

D. 2-FCV-63-177 OPEN _____

E. 2-FCV-63-7 CLOSE _____

F. 2-FCV-72-41 [45V/713] CLOSE _____

G. 2-FCV-74-35 [A9V/728] OPEN _____

H. 2-FCV-63-48 OPEN _____

I. 2-FCV-63-6 CLOSE _____

J. 2-FCV-74-16 [A6W/713] OPEN _____

K. 2-FCV-74-28 [A6V/713] OPEN _____

[93] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[94] **CLOSE** valve 2-FCV-63-47, SIS PUMP 2A INLET VALVE. _____

[95] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[96] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Alarm. _____

[97] **OPEN** valve 2-FCV-63-47, SIS PUMP 2A INLET VALVE. _____

[98] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[99] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Normal. _____

[100] **CLOSE** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHARGING PUMP. _____

[101] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[102] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Alarm. _____

[103] **OPEN** valve 2-FCV-63-177, SIS PUMP INLET TO CVCS CHARGING PUMP. _____

[104] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[105] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Normal. _____

[106] **OPEN** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PUMP. _____

[107] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[108] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Alarm. _____

[109] **CLOSE** valve 2-FCV-63-7, SIS PUMP INLET TO CVCS CHG PUMP. _____

[110] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[111] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Normal. _____

[112] **CLOSE** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE. _____

[113] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[114] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Alarm. _____

[115] **OPEN** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE. _____

[116] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[117] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Normal. _____

[118] **OPEN** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP. _____

[119] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[120] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Alarm. _____

[121] **CLOSE** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP. _____

[122] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[123] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL RECIRCULATION MODE, Normal. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[124] **CLOSE** the following valves:

A.	2-FCV-63-47	CLOSE	_____
B.	2-FCV-63-177	CLOSE	_____
C.	2-FCV-63-48	CLOSE	_____
D.	2-FCV-74-33	CLOSE	_____
E.	2-FCV-74-35	CLOSE	_____
F.	2-FCV-74-16	CLOSE	_____
G.	2-FCV-74-28	CLOSE	_____

CAUTION

Opening valves 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, 2-FCV-63-93, SIS TO REACTOR COOLANT LOOPS 2 & 3, 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, 2-FCV-63-156, SIS TO HOT LEG LOOPS 1 & 3, 2-FCV-63-157, SIS PUMP TO HOT LEG LOOPS 2 & 4, or 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, may provide a direct flow path from the RWST to the Reactor Containment Sump.

[125] **ENSURE** the following valve positions:

A.	2-FCV-63-93	OPEN	_____
B.	2-FCV-63-152	OPEN	_____
C.	2-FCV-63-156	CLOSE	_____
D.	2-FCV-63-157 [A11W713]	CLOSE	_____
E.	2-FCV-63-94 [A11W713]	OPEN	_____
F.	2-FCV-63-153 [A11W713]	OPEN	_____
G.	2-FCV-63-22 [A11W713]	OPEN	_____
H.	2-FCV-63-172 [A11W713]	CLOSE	_____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[126] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[127] **CLOSE** valve 2-FCV-63-93, SIS TO REACTOR COOLANT LOOPS 2 & 3. _____

[128] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[129] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

[130] **OPEN** valve 2-FCV-63-93, SIS TO REACTOR COOLANT LOOPS 2 & 3. _____

[131] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[132] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

[133] **CLOSE** valve 2-FCV-63-152, SIS PUMP 2A OUTLET VALVE. _____

[134] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[135] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

[136] **OPEN** valve 2-FCV-63-152, SIS PUMP 2A OUTLET VALVE. _____

[137] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[138] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

[139] **OPEN** valve 2-FCV-63-156, SIS TO HOT LEG LOOPS 1 & 3. _____

[140] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[141] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[142] **CLOSE** valve 2-FCV-63-156, SIS TO HOT LEG LOOPS 1 & 3. _____

[143] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[144] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

[145] **OPEN** valve 2-FCV-63-157, SIS PUMP TO HOT LEG LOOPS 2 & 4. _____

[146] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[147] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

[148] **CLOSE** valve 2-FCV-63-157, SIS PUMP TO HOT LEG LOOPS 2 & 4. _____

[149] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[150] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

[151] **CLOSE** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4. _____

[152] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[153] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

[154] **OPEN** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4. _____

[155] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[156] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[157] **CLOSE** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE. _____

[158] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[159] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

[160] **OPEN** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE. _____

[161] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[162] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

[163] **CLOSE** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION. _____

[164] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[165] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

[166] **OPEN** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION. _____

[167] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[168] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

[169] **OPEN** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3. _____

[170] **VERIFY** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL, ALARMS. (**Acc Crit** 5.0M) _____

[171] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Alarm. _____

[172] **CLOSE** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3. _____

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

6.37 System 063 131-F "ESF Component NOT Normal" Annunciator Test (continued)

[173] **ACKNOWLEDGE** 2–XA–55–6D–131F, ESF COMPONENT NOT NORMAL. _____

[174] **VERIFY** Unit 2 Alarm display, 131-F ESF ABNORMAL SAFETY INJECTION FLOW PATH, Normal. _____

[175] **CLOSE** the following valves:

A. 2-FCV-63-93 CLOSE _____

B. 2-FCV-63-152 CLOSE _____

C. 2-FCV-63-94 CLOSE _____

D. 2-FCV-63-153 CLOSE _____

E. 2-FCV-63-22 CLOSE _____

[176] **REMOVE** the following non-conducting inserts:

A. 2-FCV-74-3 at switch 13 in the valve switch compartment, **AND**

DOCUMENT on Appendix E. _____ 1st _____ CV

B. 2-FCV-74-21 at switch 13 in the valve switch compartment, **AND**

DOCUMENT on Appendix E. _____ 1st _____ CV

C. 2-FCV-62-98 at switch 13 in the valve switch compartment, **AND**

DOCUMENT on Appendix E. _____ 1st _____ CV

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

7.0 POST PERFORMANCE ACTIVITY

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

[2] **VERIFY** that vibration was monitored and that all instances of excessive vibration have an associated TDN. _____

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

RECORD the results on Measuring and Test Equipment (M&TE) Log. _____

[4] **REMOVE** the temporary jumper across terminals TB602-11 and TB602-12 in Panel 2-R-48 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____ 1st _____ CV

[5] **REMOVE** the temporary jumper across terminals TB704-9 and TB704-10 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____ 1st _____ CV

[6] **REMOVE** the temporary jumper across terminals TB612-1 and TB612-2 in Panel 2-R-48 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____ 1st _____ CV

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

7.0 POST PERFORMANCE ACTIVITY (continued)

[7] **REMOVE** the temporary jumper across terminals TB630-5 and TB630-6 in Panel 2-R-51 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E.

_____ 1st

_____ CV

[8] **REMOVE** the temporary jumper across terminals TB611-9 and TB611-10 in Panel 2-R-51 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E.

_____ 1st

_____ CV

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

8.0 RECORDS

A. QA Records

Completed Test Package

B. Non-QA Records

None

Appendix A
(Page 1 of 1)

TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

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

Additional copies of this table may be made as necessary.

PROCEDURE/ INSTRUCTION	REVISION/CHANGES	INITIAL AND DATE. (N/A for no change)
FSAR Section 6.3 Section 14.2	Amendment 100	

Appendix B
(Page 1 of 1)

TEMPORARY CONDITION LOG

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

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

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

Appendix C
(Page 1 of 8)

VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-3	SIS PUMPS RECIRC TO RWST VLV	Closed		Normal	
2-FCV-63-4	SIS PUMP A-A DISCHARGE TO RWST SHUTOFF	Closed		Normal	
2-FCV-63-175	SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV	Closed		Normal	
2-FCV-63-26	SIS BORON INJECTION TANK SHUTOFF VALVE	Closed		Normal	
2-FCV-63-25	SIS BORON INJECTION TANK SHUTOFF VALVE	Closed		Normal	
2-FCV-63-118	SIS ACCUM TK 1 FLOW ISOLATION VLV	Open		Normal	
2-FCV-63-80	SIS ACCUM TK 3 FLOW ISOLATION VLV	Open		Normal	
2-FCV-63-98	SIS ACCUM TK 2 FLOW ISOLATION VLV	Open		Normal	
2-FCV-63-67	SIS ACCUM TK 4 FLOW ISOLATION VLV	Open		Normal	
2-FCV-63-72	CONTAINMENT SUMP TO RHR PUMP A	Closed		Normal	
2-FCV-63-73	CONTAINMENT SUMP TO RHR PUMP B	Closed		Normal	
2-FCV-63-8	RHR HEAT EXCHANGER A TO CVCS CHG PUMP	Closed		Normal	
2-FCV-63-11	RHR HEAT EXCHANGER B TO SIS PUMP	Closed		Normal	
2-FCV-63-7	SIS PUMP INLET TO CVCS CHG PUMP	Closed		Normal	
2-FCV-63-6	SIS PUMP INLET TO CVCS CHG PUMP	Closed		Normal	
2-FCV-63-1	RWST TO RHR PUMP	Closed		Normal	

Appendix C
(Page 2 of 8)

VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-5	RWST TO SIS PUMP	Closed		Normal	
2-FCV-63-47	SIS PUMP 2A INLET VALVE	Closed		Normal	
2-FCV-63-48	SIS PUMP 2B INLET VALVE	Closed		Normal	
2-FCV-63-152	SIS PUMP 2A OUTLET VALVE	Closed		Normal	
2-FCV-63-153	SIS PUMP 2B OUTLET VALVE	Closed		Normal	
2-FCV-63-93	SIS TO REACTOR COOLANT LOOPS 2 & 3	Closed		Normal	
2-FCV-63-94	SIS TO REACTOR COOLANT LOOPS 1 & 4	Closed		Normal	
2-FCV-63-156	SIS TO HOT LEG LOOPS 1 & 3	Closed		Normal	
2-FCV-63-157	SIS TO HOT LEG LOOPS 2 & 4	Closed		Normal	
2-FCV-63-22	SIS PUMP COLD LEG INJECTION	Closed		Normal	
2-FCV-63-172	RHR TO HOT LEG LOOPS 1 & 3	Closed		Normal	
2-FCV-63-177	SIS PUMP INLET TO CVCS CHARGING PUMP	Closed		Normal	
2-FCV-63-64	SIS ACCUM TANK NITROGEN HEADER INLET	Closed		Normal	
2-FCV-63-71	SIS CHECK VALVE TEST LINE ISOL VALVE	Closed		Normal	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-23	SIS ACCUM FILL LINE ISOL VALVE	Closed		N/A	
2-FCV-63-84	SIS CHECK VALVE TEST LINE ISOL VALVE	Closed		N/A	
2-FCV-63-65	SIS ACCUM TANK N2 HEADER VENT VALVE	Closed		Normal	
2-FCV-63-158	RHR RETURN FROM SIS SAMPLE LINE VALVE	Closed		N/A	
2-FCV-63-165	RCS LOOP 2 HOT LEG TEST LINE VALVE	Closed		N/A	
2-FCV-63-78	SIS ACCUM TANK 3 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-79	SIS ACCUM TANK 3 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-167	SIS PUMP OUTLET TEST LINE VALVE	Closed		N/A	
2-FCV-63-116	SIS ACC TANK 1 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-117	SIS ACC TANK 1 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-163	RCS LOOP 1 HOT LEG TEST LINE	Closed		N/A	
2-FCV-63-96	SIS ACC TANK 2 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-97	SIS ACC TANK 2 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-21	SIS PUMP OUTLET TO SIS TEST LINE	Closed		N/A	
2-FCV-63-112	SIS CHECK VALVE LEAK TEST ISOLATION VALVE	Closed		N/A	
2-FCV-63-164	RCS LOOP 3 HOT LEG TEST LINE	Closed		N/A	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-166	RCS LOOP 4 HOT LEG TEST LINE	Closed		N/A	
2-FCV-63-121	SIS COLD LEG CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-68	SIS ACC TANK 4 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-69	SIS ACC TANK 4 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-174	SIS CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-111	SIS CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-63	SIS ACC TANK 4 N2 MAKEUP	Closed		Normal	
2-FCV-63-66	SIS ACC TANK 4 FLOW ISO VALVE	Closed		Normal	
2-FCV-63-70	SIS ACC TANK 4 FILL VALVE	Closed		Normal	
2-FCV-63-77	SIS ACC TANK 3 FILL VALVE	Closed		Normal	
2-FCV-63-87	SIS ACC TANK 3 N2 MAKEUP	Closed		Normal	
2-FCV-63-90	SIS ACC TANK 3 FLOW ISOLATION VALVE	Closed		Normal	
2-FCV-63-95	SIS ACC TANK 2 FILL VALVE	Closed		Normal	
2-FCV-63-107	SIS ACC TANK 2 N2 MAKEUP	Closed		Normal	
2-FCV-63-110	SIS ACC TANK 2 FLOW ISOLATION VALVE	Closed		Normal	
2-FCV-63-115	SIS ACC TANK 1 FILL VALVE	Closed		Normal	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-127	SIS ACC TANK 1 N2 MAKEUP	Closed		Normal	
2-FCV-63-130	SIS ACC TANK 1 FLOW ISOLATION VALVE	Closed		Normal	
2-FCV-63-24	SIS ACC FILL LINE ISO VALVE	Closed		Normal	
2-FCV-63-185	RHR SUCTION VALVE LEAK TEST LINE	Closed		N/A	
2-FCV-63-186	RHR SUCTION VALVE LEAK TEST LINE	Closed		N/A	
2-FCV-63-187	SIS CHECK VALVE LEAK TEST ISO	Closed		N/A	
2-FCV-63-188	SIS CHECK VALVE LEAK TEST ISO	Closed		N/A	
2-ISV-32-3514	CONTROL AIR TO 2-FCV-63-71	Open		N/A	
2-ISV-32-3182	CONTROL AIR TO 2-FCV-63-23	Open		N/A	
2-ISV-32-3181	CONTROL AIR TO 2-FCV-63-84	Open		N/A	
2-ISV-32-3484	CONTROL AIR TO 2-FCV-63-158	Open		N/A	
2-ISV-32-3593	CONTROL AIR TO 2-FCV-63-165	Open		N/A	
2-ISV-32-3544	CONTROL AIR TO 2-FCV-63-78	Open		N/A	
2-ISV-32-3543	CONTROL AIR TO 2-FCV-63-79	Open		N/A	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-ISV-32-3617	CONTROL AIR TO 2-FCV-63-116	Open		N/A	
2-ISV-32-3613	CONTROL AIR TO 2-FCV-63-117	Open		N/A	
2-ISV-32-3577	CONTROL AIR TO 2-FCV-63-21	Open		N/A	
2-ISV-32-3569	CONTROL AIR TO 2-FCV-63-164	Open		N/A	
2-ISV-32-3485	CONTROL AIR TO 2-FCV-63-174	Open		N/A	
2-ISV-32-3488	CONTROL AIR TO 2-FCV-63-111	Open		N/A	
2-ISV-32-3549	CONTROL AIR TO 2-FCV-63-87	Open		N/A	
2-ISV-32-3545	CONTROL AIR TO 2-FCV-63-90	Open		N/A	
2-ISV-32-3616	CONTROL AIR TO 2-FCV-63-127	Open		N/A	
2-ISV-32-3585	CONTROL AIR TO 2-FCV-63-77	Open		N/A	
2-ISV-32-3614	CONTROL AIR TO 2-FCV-63-115	Open		N/A	
2-ISV-32-3622	CONTROL AIR TO 2-FCV-63-130	Open		N/A	
2-ISV-32-3483	CONTROL AIR TO 2-FCV-63-24	Open		N/A	
2-FCV-62-61	SEAL FLOW RET ISO VLV	Closed		Normal	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-62-63	SEAL FLOW RET ISO VLV	Closed		Normal	
2-FCV-62-99	CHARGING PUMP 2A-A MIN FLOW	Closed		Normal	
2-LCV-62-135	CHARGING PUMP FLOW RWST	Closed		Normal	
2-LCV-62-136	CHARGING PUMP FLOW RWST	Closed		Normal	
2-FCV-70-153	RHR HEAT EXCHANGER 2B CCS OUTLET	Closed		Normal	
2-FCV-70-156	RHR HEAT EXCHANGER 2A CCS OUTLET	Closed		Normal	
2-FCV-72-40	RHR SPRAY HDR A ISOLATION V	Closed		Normal	
2-FCV-72-41	RHR SPRAY HDR B ISOLATION V	Closed		Normal	
2-FCV-72-44	CNTMT SUMP TO HDR A FLOW CONT VALVE	Closed		Normal	
2-FCV-72-45	CNTMT SUMP TO HDR B FLOW CONT VALVE	Closed		Normal	
2-FCV-74-1	RHR SYSTEM ISOLATION VLV	Closed		Normal	
2-FCV-74-2	RHR SYSTEM ISOLATION VLV	Closed		Normal	
2-FCV-74-3	RHR A-A SUCTION ISOLATION	Closed		Normal	
2-FCV-74-8	RHR SYSTEM ISOLATION BYPASS VALVE	Closed		Normal	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-74-9	RHR SYSTEM ISOLATION BYPASS VALVE	Closed		Normal	
2-FCV-74-21	RHR B-B SUCTION ISOLATION	Closed		Normal	
2-FCV-74-16	RHR HEAT EXCHANGE A OUTLET FLOW CONTROL	Closed		Normal	
2-FCV-74-28	RHR HEAT EXCHANGER B OUTLET FLOW CONTROL	Closed		Normal	
2-FCV-74-33	RHR HEAT EXCHANGER 2A OUTLET CROSSTIE	Closed		Normal	
2-FCV-74-35	RHR HEAT EXCHANGER 2B OUTLET CROSSTIE	Closed		Normal	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
480V RX MOV BD 2A1-A, COMPT 10B	VALVE 2-FCV-63-3 2-BKR-63-3	2-FU-213-A110/11N 2-FU-213-A110/11A	ON	6.1	
480V RX MOV BD 2A1-A, COMPT 11B	VALVE 2-FCV-63-8 2-BKR-63-8	2-FU-213-A111/11N 2-FU-213-A111/11A	ON	6.1	
480V RX MOV BD 2B1-B, COMPT 11B	VALVE 2-FCV-63-11 2-BKR-63-11	2-FU-213-B111/11N 2-FU-213-B111/11A	ON	6.1	
120V AC VIT BD 2-II BKR 11	RELAY 8804BX	2-FU-278-L10/K11 2-FU-278-L10/K12	CLOSED	6.1	
120V AC VIT BD 2-III BKR 31	RELAY 8804BXA	2-FU-278-L11A/J9 2-FU-278-L11A/J10	CLOSED	6.1	
480V RX MOV BD 2A1-A, COMPT 11D	VALVE 2-FCV-63-26-A 2-BKR-63-26	2-FU-213-A111/31N 2-FU-213-A111/31A	ON	6.2	
480V RX MOV BD 2A1-A, COMPT 8D	VALVE 2-FCV-63-118 2-BKR-63-118B	2-FU-213-A18/31N 2-FU-213-A18/31A 2-FU-213-A18/32	ON	6.3	
480V RX MOV BD 2A1-A, COMPT 3F2	VALVE 2-FCV-63-118 2-BKR-63-118	N/A	ON	6.3	
120V AC VIT BD 2-III BKR 29	RELAY P11AX1	2-FU-99-54/L17 2-FU-99-54/L18	CLOSED	6.3	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
480V RX MOV BD 2A1-A, COMPT 7D	VALVE 2-FCV-63-80 2-BKR-63-80-B	2-FU-213-A17/31N 2-FU-213-A17/31A 2-FU-213-A17/32	ON	6.4	
480V RX MOV BD 2A1-A, COMPT 17F2	VALVE 2-FCV-63-80 2-BKR-63-80	N/A	ON	6.4	
120V AC VIT BD 2-III BKR 29	RELAY P11AX1	2-FU-99-54/L17 2-FU-99-54/L18	CLOSED	6.4	
480V RX MOV BD 2A1-A, COMPT 11A	VALVE 2-FCV-63-7 2-BKR-63-7	2-FU-213-A111/1N 2-FU-213-A111/1A	ON	6.5	
480V RX MOV BD 2A1-A, COMPT 12A	VALVE 2-FCV-63-47 2-BKR-63-47	2-FU-213-A112/1N 2-FU-213-A112/1A	ON	6.6	
480V RX MOV BD 2A1-A, COMPT 12E	VALVE2-FCV-63-152 2-BKR-63-152	2-FU-213-A112/41N 2-FU-213-A112/41A	ON	6.7	
480V RX MOV BD 2A1-A, COMPT 12D	VALVE 2-FCV-63-93 2-BKR-63-93	2-FU-213-A112/31N 2-FU-213-A112/31A	ON	6.8	
480V RX MOV BD 2A1-A, COMPT 13A	VALVE 2-FCV-63-156 2-BKR-63-156	2-FU-213-A113/1N 2-FU-213-A113/1A	ON	6.9	
480V RX MOV BD 2A1-A, COMPT 9B	VALVE 2-FCV-63-177 2-BKR-63-177	2-FU-213-A19/11N 2-FU-213-A19/11A	ON	6.10	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
480V RX MOV BD 2A1-A, COMPT 12B	VALVE 2-FCV-63-72 2-BKR-63-72	2-FU-213-A112/11N 2-FU-213-A112/11A	ON	6.11	
480V C&A VT BD 2A1-A, COMPT 7D	VALVE 2-FCV-74-3 2-BKR-74-3	2-FU-214-A17/31N 2-FU-214-A17/31A	ON	6.11	
480V RX MOV BD 2A1-A, COMPT 12B	VALVE 2-FCV-63-72 2-BKR-63-72	2-FU-213-A112/11N 2-FU-213-A112/11A	ON	6.12	
480V RX MOV BD 2A1-A, COMPT 10B	VALVE 2-FCV-63-3 2-BKR-63-3	2-FU-213-A110/11N 2-FU-213-A110/11A	ON	6.12	
480V RX MOV BD 2B1-B, COMPT 13D	VALVE 2-FCV-63-175 2-BKR-63-175	2-FU-213-B113/31N 2-FU-213-B113/31A	ON	6.12	
480V RX MOV BD 2B1-B, COMPT 10A	VALVE 2-FCV-63-4 2-BKR-63-4	2-FU-213-B110/1N 2-FU-213-B110/1A	ON	6.12	
480V RX MOV BD 2A1-A, COMPT 11B	VALVE 2-FCV-63-8 2-BKR-63-8	2-FU-213-A111/11N 2-FU-213-A111/11A	ON	6.12	
120V AC VIT BD 2-II BKR 11	RELAY 8920X	2-FU-278-L10/K9 2-FU-278-L10/K10	CLOSED	6.12	
120V AC VIT BD 2-III BKR 31	RELAY 8920XA	2-FU-278-L11A/J7 2-FU-278-L11A/J8	CLOSED	6.12	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
480V RX MOV BD 2A1-A, COMPT 10A	VALVE 2-FCV-63-1-A 2-BKR-63-1B	2-FU-213-A110/1N 2-FU-213-A110/1A	ON	6.13	
480V RX MOV BD 2A1-A, COMPT 2E1	VALVE 2-FCV-63-1-A 2-BKR-63-1	N/A	ON	6.13	
120V AC VIT BD 2-III BKR 29	RELAY P11AX1	2-FU-99-54/L17 2-FU-99-54/L18	CLOSED	6.13	
125V DC VITAL BAT BD III BKR 310 & 311	VALVE 2-FCV-63-71 BKR	0-FU-236-3/A31 0-FU-236-3/B19	CLOSED	6.14	
125V DC VITAL BAT BD IV BKR 310	VALVE 2-FCV-63-23 BKR	0-FU-236-4/A29	CLOSED	6.15	
125V DC VITAL BAT BD IV BKR 311	VALVE 2-FCV-63-84 BKR	0-FU-236-4/B44	CLOSED	6.16	
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-158 BKR	0-FU-236-3/D38	CLOSED	6.17	
125V DC VITAL BAT BD IV BKR 218	VALVE 2-FCV-63-165 BKR	0-FU-236-4/E32	CLOSED	6.18	
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-78 BKR	0-FU-236-3/D12	CLOSED	6.19	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-79 BKR	0-FU-236-3/D29	CLOSED	6.20	
125V DC VITAL BAT BD IV BKR 218	VALVE 2-FCV-63-116 BKR	0-FU-236-4/E33	CLOSED	6.21	
125V DC VITAL BAT BD III BKR 218	VALVE 2-FCV-63-117 BKR	0-FU-236-3/E32	CLOSED	6.22	
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-21 BKR	0-FU-236-3/D28	CLOSED	6.23	
125V DC VITAL BAT BD III BKR 218	VALVE 2-FCV-63-164 BKR	0-FU-236-3/E36	CLOSED	6.24	
125V DC VITAL BAT BD IV BKR 217	VALVE 2-FCV-63-174 BKR	0-FU-236-4/D33	CLOSED	6.25	
125V DC VITAL BAT BD IV BKR 218	VALVE 2-FCV-63-111 BKR	0-FU-236-4/E43	CLOSED	6.26	
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-87 BKR	0-FU-236-4/D11 0-FU-236-4/E11	CLOSED	6.27	
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-90 BKR	0-FU-236-4/E39 0-FU-236-4/D36	CLOSED	6.28	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
125V DC VITAL BAT BD III BKR 217 & 218	VALVE 2-FCV-63-127 BKR	0-FU-236-3/E30 0-FU-236-3/D30	CLOSED	6.29	
125V DC VITAL BAT BD III BKR 217 & 218	VALVE 2-FCV-63-77 BKR	0-FU-236-3/D23 0-FU-236-3/E23	CLOSED	6.30	
125V DC VITAL BAT BD III BKR 217 & 218	VALVE 2-FCV-63-115 BKR	0-FU-236-3/D24 0-FU-236-3/E24	CLOSED	6.31	
125V DC VITAL BAT BD III BKR 217 & 218	VALVE 2-FCV-63-130 BKR	0-FU-236-3/D7 0-FU-236-3/E7	CLOSED	6.32	
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-24 BKR	0-FU-236-4/D7 0-FU-236-4/E7	CLOSED	6.33	
120V AC VIT BD 2-I BKR 11	RELAY 51A1	2-FU-275-R75/I5 2-FU-275-R75/I6	CLOSED	6.36	
120V AC VIT BD 2-I BKR 7	RELAY 30A1	2-FU-275-R76/I11 2-FU-275-R76/I12	CLOSED	6.36	
480V CONT & AUX BLDG VT BD 2A1-A COMPT 8A	SIS PUMP ROOM COOLER FAN 2-MTR-30-180	2-FU-214-A18/1	CLOSED	6.36	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
6.9KV Shutdown Bd Cmpt 15	SI Pump 2A-A Breaker, Compt 15	2-FU-211-A15/1N-A 2-FU-211-A15/2N-A 2-FU-211-A15/3N-A 2-FU-211-A15/1A-A 2-FU-211-A15/2A-A 2-FU-211-A15/3A-A	OPEN	6.36	
120V AC VIT BD 2-I BKR 12	RELAY ML1A	2-FU-275-R76/J5 2-FU-275-R76/J6	CLOSED	6.37	
120V AC VIT BD 2-I BKR 12	RELAY ML2A	2-FU-275-R76/J3 2-FU-275-R76/J4	CLOSED	6.37	
120V AC VIT BD 2-I BKR 12	RELAY ML4A	2-FU-275-R76/K11 2-FU-275-R76/K12	CLOSED	6.37	
120V AC VIT BD 2-I BKR 12	RELAY ML6A	2-FU-275-R76/K7 2-FU-275-R76/K8	CLOSED	6.37	
120V AC VIT BD 2-II BKR 5	RELAY ML1B	2-FU-275-R76/J19 2-FU-275-R76/J20	CLOSED	6.37	
120V AC VIT BD 2-II BKR 5	RELAY ML2B	2-FU-275-R76/J21 2-FU-275-R76/J22	CLOSED	6.37	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Breaker Position	Test Section	Checked by Initials/Date
120V AC VIT BD 2-II BKR 6	RELAY ML4B	2-FU-275-R76/K13 2-FU-275-R76/K14	CLOSED	6.37	
120V AC VIT BD 2-II BKR 6	RELAY ML6B	2-FU-275-R76/K17 2-FU-275-R76/K18	CLOSED	6.37	

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CONFIGURATION CONTROL LOG FOR WIRE LIFTS

CONFIGURATION CONTROL LOG FOR WIRE LIFTS	Sheet _____ of _____

NOTES

1. Any time wires are lifted and are left unattended, there must be a nonconductive tag attached to them identifying the work instruction that required the wire to be lifted.
2. Additional copies of this table may be made as necessary.
3. Torquing of wires shall be done in accordance with 25402-000-GPP-0000-N3304 or MAI-3.3.

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

WATTS BAR NUCLEAR PLANT

UNIT 2 STARTUP

TITLE: System 063 - Safety Injection System Pump/Valve Logic Test - Train B

RLE
2-11-11

Instruction No: 2-PTI-063-05-B

Revision No: 0

PREPARED BY: Curt Evans Curt Evans DATE 2-10-11

PRINT NAME/ SIGNATURE

REVIEWED BY: Ross Horvat Ross Horvat DATE 2/10/2011

PRINT NAME/ SIGNATURE

INSTRUCTION APPROVAL

JTG MEETING NO: 2-11-004

JTG CHAIRMAN: _____ DATE 2/10/11

APPROVED BY: _____ DATE 2/10/11

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	2/10/11	ALL	Initial Issue based off of 1-PTI-063-05.

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6.36 Valve 2-FCV-63-110 Logic Test 271
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7.0 POST PERFORMANCE ACTIVITY 298

8.0 RECORDS 300

Appendix A: TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW 301

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Appendix B: TEMPORARY CONDITION LOG 302

Appendix C: VALVE CHECKLIST 303

Appendix D: ELECTRICAL CHECKLIST 309

Appendix E: CONFIGURATION CONTROL LOG FOR WIRE LIFTS 318

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1.0 INTRODUCTION

1.1 Test Objectives

This test is being performed to ensure the valves, pumps, and annunciators perform their design function.

1.2 Scope

Verify Safety Injection System (Sys 063) components function according to design requirements and required safety functions. This procedure deals mostly, but not exclusively, with the B Train components. Remaining SIS components will be tested during the performance of 2-PTI-063-05-A.

A. Ensure proper operation of Safety Injection System motor operated valves under static conditions.

B. Ensure proper operation of Safety Injection System motor operated valves interlocks.

C. Ensure proper operation of the Safety Injection Pump 6.9kV breakers.

D. Ensure proper operation of Safety Injection System air operated valves under static conditions.

E. Ensure proper operation of Transfer Switch alarms.

F. Ensure proper operation of Safety Injection System component status alarms.

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2.0 REFERENCES

2.1 Performance References

A. SMP-7.0, Control of Cleanness, Layup and Flushing

B. SMP-9.0, Conduct of Test

C. NPG-SPP-10.2, Clearance Procedure to Safely Control Energy

2.2 Developmental References

A. Test Scoping Documents

1. 2-TSD-63-5 R0, "Safety Injection System Integrated Test: Pump/Valve Logic Test"

2. 2-TSD-030A-01 R1, "Select Auxiliary Building ESF Coolers and HELB Detection"

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2.2 Developmental References (continued)

B. Final Safety Analysis Report

1. FSAR-Amendment 100

a. Section 6.3

b. Section 14.2

C. Drawings

1. Mechanical Flow Diagrams

a. 2-47W810-1 R2, "Flow Diagram Residual Heat Removal Sys"

b. 2-47W811-1 R4, "Flow Diagram Safety Injection System"

c. 2-47W830-6 R2, "Mechanical Flow Diagram Waste Disposal System"

d. 2-47W848-5 R1, "Mechanical Flow Diagram Control Air"

e. 2-47W848-9 R1, "Mechanical Flow Diagram Control Air"

2. Electrical Logic/Control Diagrams

a. 2-47W610-63-1 R3, "Electrical Control Diagram Safety Injection System"

b. 2-47W610-63-2 R2, "Electrical Control Diagram Safety Injection"

c. 2-47W610-63-2B R2, "Electrical Control Diagram Safety Injection"

d. 2-47W611-63-2 R2, "Electrical Logic Diagram Safety Injection System"

(1) 54870-003 R0

e. 2-47W611-63-3 R1, "Electrical Logic Diagram Safety Injection System"

f. 2-47W611-63-4 R1, "Electrical Logic Diagram Safety Injection System"

g. 2-47W611-63-5 R1, "Electrical Logic Diagram Safety Injection System"

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2.2 Developmental References (continued)

h. 2-47W611-63-6 R1, "Electrical Logic Diagram Safety Injection System"

i. 2-47W611-63-7 R1, "Electrical Logic Diagram Safety Injection System"

j. 2-47W611-63-8 R1, "Electrical Logic Diagram Safety Injection System"

3. Electrical Diagrams

a. 45W2657-1 R5,"Wiring Diagrams PNL 2-M-22 & 2-M-23 Connection Diagram Sheet 1"

b. 45B2768-7D R3, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 7D"

(1) 53292-039 R3

c. 45B2768-8D R3, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 8D"

(1) 53292-037 R3

d. 45B2768-9B R9, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 9B"

(1) 53292-007 R9

e. 45B2768-10A R7, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 10A"

(1) 53292-014 R7

f. 45B2768-10B R6, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 10B"

(1) 53292-023 R6

g. 45B2768-11A R7, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 11A"

(1) 53292-021 R7

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2.2 Developmental References (continued)

h. 45B2768-11B R7, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 11B"

(1) 53292-022 R7

i. 45B2768-11D R9, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 11D"

(1) 53292-018 R9

j. 45B2768-11E R7, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 11E"

(1) 53292-015 R7

k. 45B2768-12B R6, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 12B"

(1) 53292-016 R6

l. 45B2768-12D R8, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 12D"

(1) 53292-036 R8

m. 45B2768-12E R5, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 12E"

(1) 53292-038 R5

n. 45B2768-13A R7, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 13A"

(1) 53292-020 R7

o. 45B2768-13B R7, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 13B"

(1) 53292-024 R7

p. 45B2768-13D R7, "Wiring Diagrams 480V Reac Mov BD 2B1-B Conn Diag - Compt 13D"

(1) 53292-017 R7

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2.2 Developmental References (continued)

q. 45N703-3 R22, "Wiring Diagrams 125V Vital Battery Board III Single Line - Sheet 3"

r. 45N706-1 R20, "Wiring Diagrams 120V AC Vital Inst Power Bds 1-I & 2-I Connection Diagram - Sheet 1"

s. 45N706-2 R21, "Wiring Diagrams 120V AC Vital Inst Power Bds 1-II & 2-II Connection Diagram - Sheet 2"

t. 45N706-3 R22, "Wiring Diagrams 120V AC Vital Inst Power Bds 1-III & 2-III Connection Diagram - Sheet 3"

u. 45N706-4 R18, "Wiring Diagrams 120V AC Vital Inst Power Bds 1-IV & 2-IV Connection Diagram - Sheet 4"

v. 45N2644-6 R9, "Wiring Diagrams Unit Control Boards - Panel 2-M-5 Connection Diagrams - Sheet 6"

w. 45N2645-9 R12, "Wiring Diagrams Unit Control Boards - Panel 2-M-6 Connection Diagrams - Sheet 9"

(1) 53580-529 R0

(2) 54870-147 R0

x. 45N2677-4 R18, "Wiring Diagrams Solid State Protection Sys Train B Connection Diagram Sh-4"

y. 45N2680-1 R10, "Wiring Diagrams NSSS Aux Relay Panel 2-R-54 Connection Diagrams Sh-1"

z. 45N2680-3 R9, "Wiring Diagrams NSSS Aux Relay Panel 2-R-54 Connection Diagrams Sh-3"

aa. 2-45W2772-6, "Wiring Diagrams 480V Cont & Aux BLDG Vent BD 2B1-B Connection Diagrams"

(1) 52639-065 R0

bb. 1-45W703-7 R12, "Wiring Diagrams 125V Vital Btry Board III PNL 4 Connection Diagram Sheet 7"

cc. 1-45W703-7A R11, "Wiring Diagrams 125V Vital Btry Board III PNL 4 Connection Diagram Sheet 7A"

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2.2 Developmental References (continued)

dd. 1-45W703-8 R13, "Wiring Diagrams 125V Vital Btry Board IV PNL 4 Connection Diagram Sheet 8"

ee. 2-45W600-57-4 R0, "Wiring Diagram Separation & Misc Aux Relays Schematic Diagram"

ff. 2-45W600-57-6 R0, "Wiring Diagram Separation & Misc Aux Relays Schematic Diagram"

gg. 2-45W600-57-16 R0, "Wiring Diagram Separation & Misc Aux Relays Schematic Diagram"

(1) 54070-201 R0

hh. 2-45W600-57-20 R0, "Wiring Diagram Separation & Misc Aux Relays Schematic Diagram"

ii. 2-45W600-63-1 R0, "Wiring Diagram Safety Injection System Schematic Diagram"

(1) 53580-510 R0

jj. 2-45W600-63-2 R0, "Wiring Diagram Safety Injection System Schematic Diagram"

kk. 2-45W724-4 R0, "Wiring Diagrams 6900V Shutdown Board 2B-B Single Line"

(1) 54191-001 R0

ll. 2-45W751-5 R0, "Wiring Diagrams 480V Reac Mov Bd 2A2-A Single Line Sh-2"

(1) 53288-082 R0

mm. 2-45W751-7 R1, "Wiring Diagrams 480V Reac Mov Bd 2B1-B Single Line Sh-1"

nn. 2-45W751-8 R1, "Wiring Diagrams 480V Reac Mov Bd 2B1-B Single Line Sh-2"

oo. 2-45W751-14 R0, "Wiring Diagrams 480V Reac Mov Bd 2B1-B Single Line Sh-4"

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2.2 Developmental References (continued)

pp. 2-45W760-30-17 R0, "Wiring Diagrams Ventilating System Schematic Diagrams"

(1) 53290-064 R0

qq. 2-45W760-63-1 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

rr. 2-45W760-63-2 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

ss. 2-45W760-63-3 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

tt. 2-45W760-63-4 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

uu. 2-45W760-63-5 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

vv. 2-45W760-63-6 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

ww. 2-45W760-63-7 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

xx. 2-45W760-63-8 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

yy. 2-45W760-74-2 R0, "Wiring Diagrams Safety Injection System Schematic Diagram"

zz. 2-45W760-270-2 R0, "Wiring Diagram Miscellaneous System Schematic Diagram"

aaa. E-3620E R1, "Wiring Diagram Panel 1 6900V Shutdown Board 2BB Logic Relay Pnl Sheet No. 1"

bbb. 2-47B601-55-79 ANT, "Electrical Instrument Tabulations Panel 2-M-6"

(1) 52363-89 R0

ccc. 2-45B655-6D R1, "Main Control Room Annunciator Inputs Window Box XA-55-6D"

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2.2 Developmental References (continued)

ddd. 2-45B655-6F R0, "Main Control Room Annunciator Inputs Window Box XA-55-6F"

(1) 52630-092 R0

4. Vendor Diagrams

a. 7246D11-17 R9, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

b. 7246D11-19 R8, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

c. 7246D11-20 R13, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

d. 7246D11-22 R12, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

e. 7246D11-56 R6, "Solid State Protection System Interconnection Diagram", Contract No. 71C62-54114-1

5. Other Diagrams

a. N/A

6. Annunciator Response Instructions

a. ARI-8-14, "Aux Power" R8

b. ARI-131-137, "Miscellaneous" R20

c. ARI-145-150, "Fuses & Aux Switches" R4

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3.0 PRECAUTIONS AND LIMITATIONS

A. Operating the following valves can flood containment without the proper precaution:

1. 2-FCV-63-1
2. 2-FCV-63-5
3. 2-FCV-74-1
4. 2-FCV-74-2
5. 2-FCV-74-8
6. 2-FCV-74-9
7. 2-LCV-62-135
8. 2-LCV-62-136

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

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

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

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

F. All open problems are to be tracked by a corrective action document and entered on the appropriate system punch list.

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

3.0 PRECAUTIONS AND LIMITATIONS (continued)

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

H. Observe all Radiation Protection (RP) requirements when working in or near contaminated areas.

I. The containment sump valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, will be cycled during the performance of this test. Take precautions to prevent flooding containment through the sump lines.

J. Confined Space Permits and Safety Observers are required for entrance of the valve vault.

K. Portions of this test will isolate the Safety Injection Pumps Suction and miniflow paths. Take precautions to preclude the pumps from starting during the performance of this test.

L. For timed sequences, a countdown will be communicated and utilized.

M. For breaker manipulations, the verbiage will change depending on the breaker positions. Close position and ON are the same. Open position and OFF are the same.

N. Local valve position will be confirmed by valve stem position.

O. Throughout this instruction, the Control Room operator should verify, acknowledge, clear and otherwise respond to annunciators in the normal fashion.

P. Whenever a wire is lifted and left unattended, there must be a nonconductive tag attached to them identifying the work instruction and an entry made to the Configuration Control Log for Wire Lifts, Appendix E.

Q. Ensure there are no adverse effects to the operations of unit 1 structures, systems, or components.

R. During the performance of this procedure, visual observation of piping and components is required. This includes steady state and transient operations with visual confirmation that vibration is not excessive.

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

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

3.0 PRECAUTIONS AND LIMITATIONS (continued)

T. Performance of this PTI results will have no adverse impact to the operation of Unit 1 components.

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

4.0 PREREQUISITE ACTIONS

NOTE
Preliminary action steps may be performed in any order with Test Directors approval.

4.1 Preliminary Actions

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

[2] **VERIFY** the latest revision of this PTI is in BSL. _____

[3] **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. _____

[4] **ENSURE** changes to the references listed on Appendix A, Test Procedure/Instruction Reference Review, have been reviewed, and determined NOT to adversely affect the test performance. _____

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

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

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

ENSURE that they will NOT adversely affect the test performance for the following subsections.

A. Subsection 6.1 _____

B. Subsection 6.2 _____

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

4.1 Preliminary Actions (continued)

C. Subsection 6.3 _____

D. Subsection 6.4 _____

E. Subsection 6.5 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

K. Subsection 6.11 _____

L. Subsection 6.12 _____

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

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

4.1 Preliminary Actions (continued)

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

[7] **ENSURE** required Component Testing for the following subsections 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 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

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

4.1 Preliminary Actions (continued)

K. Subsection 6.11 _____

L. Subsection 6.12 _____

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

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

4.1 Preliminary Actions (continued)

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

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

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

[9] **ENSURE** a review of outstanding Clearances has been coordinated with U2 Operations for impact to the test performance, **AND**

RECORD in Appendix B, Temporary Condition Log if required.

A. Subsection 6.1 _____

B. Subsection 6.2 _____

C. Subsection 6.3 _____

D. Subsection 6.4 _____

E. Subsection 6.5 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

K. Subsection 6.11 _____

L. Subsection 6.12 _____

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

4.1 Preliminary Actions (continued)

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

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

4.1 Preliminary Actions (continued)

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

[10] **VERIFY** System cleanness as required for the performance of this test has been completed in accordance with SMP-7.0. _____

[11] **VERIFY** Measuring and Test Equipment (M&TE) required for test performance has been (as required) filled, vented, place in service and recorded on Measuring and Test Equipment Log.

A. Subsection 6.1 _____

B. Subsection 6.2 _____

C. Subsection 6.3 _____

D. Subsection 6.4 _____

E. Subsection 6.5 _____

F. Subsection 6.6 _____

G. Subsection 6.7 _____

H. Subsection 6.8 _____

I. Subsection 6.9 _____

J. Subsection 6.10 _____

K. Subsection 6.11 _____

L. Subsection 6.12 _____

M. Subsection 6.13 _____

N. Subsection 6.14 _____

O. Subsection 6.15 _____

P. Subsection 6.16 _____

Q. Subsection 6.17 _____

R. Subsection 6.18 _____

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

4.1 Preliminary Actions (continued)

S. Subsection 6.19 _____

T. Subsection 6.20 _____

U. Subsection 6.21 _____

V. Subsection 6.22 _____

W. Subsection 6.23 _____

X. Subsection 6.24 _____

Y. Subsection 6.25 _____

Z. Subsection 6.26 _____

AA. Subsection 6.27 _____

BB. Subsection 6.28 _____

CC. Subsection 6.29 _____

DD. Subsection 6.30 _____

EE. Subsection 6.31 _____

FF. Subsection 6.32 _____

GG. Subsection 6.33 _____

HH. Subsection 6.34 _____

II. Subsection 6.35 _____

JJ. Subsection 6.36 _____

KK. Subsection 6.37 _____

[12] **VERIFY** Measuring and Test Equipment (M&TE) calibration due dates will support the completion of this test performance. _____

[13] **ENSURE** all piping supports required for testing are installed and adjusted as needed. _____

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

4.1 Preliminary Actions (continued)

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

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

[16] **PERFORM** a pretest briefing with test and operations personnel in accordance with SMP-9.0. _____

[17] **REVIEW** preventative maintenance for system/components covered by this test, **AND**

VERIFY no conditions exist that will impact test performance. _____

[18] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.1:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. 480V REACTOR MOV BOARD 2A1-A is energized. _____

C. 120V AC Vital Bd 2-I is energized. _____

D. 120V AC Vital Bd 2-II is energized. _____

E. 120V AC Vital Bd 2-III is energized. _____

F. 120V AC Vital Bd 2-IV is energized. _____

G. Annunciator System 055 is energized. _____

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

4.1 Preliminary Actions (continued)

[19] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.2:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. 480V REACTOR MOV BOARD 2A1-A is energized. _____

C. 120V AC Vital Bd 2-I is energized. _____

D. 120V AC Vital Bd 2-II is energized. _____

E. 120V AC Vital Bd 2-III is energized. _____

F. 120V AC Vital Bd 2-IV is energized. _____

G. Annunciator System 055 is energized. _____

[20] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.3:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[21] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.4:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. 120V AC Vital Bd 2-II is energized. _____

C. Annunciator System 055 is energized. _____

[22] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.5:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. 120V AC Vital Bd 2-II is energized. _____

C. Annunciator System 055 is energized. _____

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

4.1 Preliminary Actions (continued)

[23] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.6:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[24] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.7:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[25] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.8:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[26] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.9:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[27] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.10:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[28] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.11:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

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

4.1 Preliminary Actions (continued)

[29] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.12:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. 480V C&A Vent Board 2B1-B is energized. _____

C. Annunciator System 055 is energized. _____

[30] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.13:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. 120V AC Vital Bd 2-I is energized. _____

C. 120V AC Vital Bd 2-IV is energized. _____

D. Annunciator System 055 is energized. _____

[31] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.14:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[32] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.15:

A. 480V REACTOR MOV BOARD 2B1-B is energized. _____

B. Annunciator System 055 is energized. _____

[33] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.16:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

B. Annunciator System 055 is energized. _____

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4.1 Preliminary Actions (continued)

[34] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.17:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

B. Annunciator System 055 is energized. _____

[35] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.18:

A. Foxboro is operational. _____

B. Annunciator System 055 is energized. _____

[36] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.19:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

[37] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.20:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

[38] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.21:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

[39] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.22:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

[40] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.23:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

[41] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.24:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

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4.1 Preliminary Actions (continued)

[42] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.25:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

[43] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.26:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

[44] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.27:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

[45] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.28:

A. 125V dc VITAL BATTERY BOARD III is energized. _____

[46] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.29:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

[47] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.30:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

[48] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.31:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[49] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.32:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

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4.1 Preliminary Actions (continued)

[50] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.33:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[51] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.34:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[52] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.35:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[53] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.36:

A. 125V dc VITAL BATTERY BOARD IV is energized. _____

B. Annunciator System 055 is energized. _____

[54] **VERIFY** the following support system(s) are in service or operable to the extent necessary to perform Section 6.37:

A. 6900V SHUTDOWN BOARD 2B-B is energized. _____

B. 120V AC Vital Bd 2-II is energized. _____

C. Annunciator System 055 is energized. _____

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

4.1 Preliminary Actions (continued)

NOTE

Prerequisite 4.1[55], Valve Lineup, is an initial valve only to establish control of System 63 for testing. The required valve positions to perform each individual section are identified within the section.

[55] **PERFORM** the valve lineup listed in Appendix C. _____

[56] **PERFORM** a pretest walk down on equipment to be tested to ensure no conditions exist that will impact the test performance and that needed valves are accessible. _____

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

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

[1] **ENSURE** the following equipment is available. _____

A. Jumpers, (Grabber Type with Insulated Boots)

B. Jumpers, (Momentary hand-held contact)

[2] **ENSURE** the following M&TE or equivalent is available and within their calibration due dates, **AND**

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

A. Digital Stopwatch (2), accuracy $\pm$ 0.1 sec (Recommend Micronta)

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

4.3 Field Preparations

[1] **PERFORM** the following prior to starting Section 6.4:

A. **LOCATE** and **VERIFY** terminals TB602-11 and TB602-12 in Panel 2-R-51.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB602-11 and TB602-12 in Panel 2-R-51 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

C. **LOCATE** and **VERIFY** terminals TB704-11 and TB704-12 in Panel 2-M-22.

_____ 1st

_____ CV

D. **INSTALL** a jumper across terminals TB704-11 and TB704-12 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____

[2] **PERFORM** the following prior to starting Section 6.5:

A. **LOCATE** and **VERIFY** terminals TB620-11 and TB620-12 in Panel 2-R-51.

_____ 1st

_____ CV

B. **INSTALL** a jumper across terminals TB620-11 and TB620-12 in Panel 2-R-51 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

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

4.3 Field Preparations (continued)

C. **LOCATE** and **VERIFY** terminals TB704-11 and TB704-12 in Panel 2-M-22. _____ 1st _____ CV

D. **INSTALL** a jumper across terminals TB704-11 and TB704-12 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____

[3] **VERIFY** the responsible system engineer (RSE) has been consulted prior to performing Section 6.12:

A. System 74 _____ Sys Engr

[4] **PERFORM** the following prior to starting Section 6.14:

A. **LOCATE** and **VERIFY** terminals TB704-11 and TB704-12 in Panel 2-M-22. _____ 1st _____ CV

B. **INSTALL** a jumper across terminals TB704-11 and TB704-12 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____

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

4.3 Field Preparations (continued)

[5] **PERFORM** the following prior to starting Section 6.16:

A. **LOCATE** and **VERIFY** terminals TB611-9 and TB611-10 in Panel 2-R-48. _____ 1st _____ CV

B. **INSTALL** a jumper across terminals TB611-9 and TB611-10 in Panel 2-R-48 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____

[6] **PERFORM** the following prior to starting Section 6.17:

A. **LOCATE** and **VERIFY** terminals TB618-11 and TB618-12 in Panel 2-R-48. _____ 1st _____ CV

B. **INSTALL** a jumper across terminals TB618-11 and TB618-12 in Panel 2-R-48 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____

[7] **PERFORM** the following prior to starting Section 6.18:

A. **VERIFY** 2-HIC-63-65A and 2-HIC-63-65C are calibrated and ready for testing. _____

[8] **VERIFY** the responsible System Engineer (RSE) has been consulted prior to performing Section 6.37.

A. System 30 _____ Sys Engr

[9] **VERIFY** that the four Safety Injection Accumulators are empty of liquid and vented. _____

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.

_____ _____

U2 US/SRO/SM Signature — Date

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

5.0 ACCEPTANCE CRITERIA

A. The following System 063 Motor Operated Valves will operate with the thermal overload protective device bypass in effect and will NOT operate with the overload protective device bypass reset:

Valve Number	Operate Step	NOT Operate Step
2-FCV-63-4	6.1[44]	6.1[41]
2-FCV-63-175	6.2[44]	6.2[41]
2-FCV-63-25	6.3[44]	6.3[41]
2-FCV-63-98	6.4[106]	6.4[103]
2-FCV-63-67	6.5[107]	6.5[104]
2-FCV-63-6	6.6[43]	6.6[40]
2-FCV-63-48	6.7[44]	6.7[41]
2-FCV-63-153	6.8[44]	6.8[41]
2-FCV-63-94	6.9[51]	6.9[48]
2-FCV-63-157	6.10[43]	6.10[40]
2-FCV-63-172	6.11[44]	6.11[41]
2-FCV-63-73	6.12[44]	6.12[41]
2-FCV-63-11	6.13[44]	6.13[41]
2-FCV-63-5	6.14[46]	6.14[43]
2-FCV-63-22	6.15[43]	6.15[40]

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

5.0 ACCEPTANCE CRITERIA (continued)

B. Each of the following valves meet their required stroke times as defined below:

Valve No.	Open Time, sec	Step No.	Close Time, sec	Step No.
2-FCV-63-4	≤10	6.1[26]	≤10	6.1[32]
2-FCV-63-175	≤10	6.2[26]	≤10	6.2[32]
2-FCV-63-25	≤12	6.3[26]	≤12	6.3[32]
2-FCV-63-6	≤10	6.6[25]	≤10	6.6[31]
2-FCV-63-48	≤15	6.7[26]	≤15	6.7[32]
2-FCV-63-153	≤12	6.8[26]	≤12	6.8[32]
2-FCV-63-94	≤40	6.9[25]	≤40	6.9[31]
2-FCV-63-157	≤17	6.10[25]	≤17	6.10[31]
2-FCV-63-172	≤120	6.11[26]	≤120	6.11[32]
2-FCV-63-73	≤60	6.12[26]	≤60	6.12[32]
2-FCV-63-11	≤28	6.13[26]	≤28	6.13[32]
2-FCV-63-5	≤14	6.14[27]	≤14	6.14[34]
2-FCV-63-22	≤10	6.15[25]	≤10	6.15[31]
2-FCV-63-64	N/A	N/A	≤10	6.16[31]
2-FCV-63-185	N/A	N/A	>1 - ≤10	6.17[14]
2-FCV-63-186	N/A	N/A	>5 - ≤10	6.19[13]
2-FCV-63-187	N/A	N/A	>5 - ≤10	6.20[13]
2-FCV-63-188	N/A	N/A	>5 - ≤10	6.21[13]
2-FCV-63-167	N/A	N/A	>5 - ≤10	6.22[13]
2-FCV-63-163	N/A	N/A	>5 - ≤10	6.23[13]
2-FCV-63-96	N/A	N/A	>5 - ≤10	6.24[13]
2-FCV-63-97	N/A	N/A	>5 - ≤10	6.25[13]
2-FCV-63-112	N/A	N/A	>5 - ≤10	6.26[13]
2-FCV-63-166	N/A	N/A	>5 - ≤10	6.27[13]
2-FCV-63-121	N/A	N/A	>5 - ≤10	6.28[13]
2-FCV-63-68	N/A	N/A	>5 - ≤10	6.29[13]
2-FCV-63-69	N/A	N/A	>5 - ≤10	6.30[13]
2-FCV-63-66	N/A	N/A	>1 - ≤10	6.33[28]
2-FCV-63-70	N/A	N/A	>5 - ≤10	6.34[28]
2-FCV-63-95	N/A	N/A	>1 - ≤10	6.35[28]
2-FCV-63-110	N/A	N/A	>1 - ≤10	6.36[28]

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5.0 ACCEPTANCE CRITERIA (continued)

C. Annunciator window 2–XA–55–6F–150C, "480 RX MOV BD 2B1-B/2B2-B XS IN AUX" (2-M-6), alarms when the Transfer Switches are placed in the AUX position for the following valves:

Valve No.	Step No.
2-FCV-63-4	6.1[21]
2-FCV-63-175	6.2[21]
2-FCV-63-25	6.3[21]
2-FCV-63-98	6.4[74]
2-FCV-63-67	6.5[75]
2-FCV-63-6	6.6[20]
2-FCV-63-48	6.7[21]
2-FCV-63-153	6.8[21]
2-FCV-63-94	6.9[20]
2-FCV-63-157	6.10[20]
2-FCV-63-172	6.11[21]
2-FCV-63-73	6.12[21]
2-FCV-63-11	6.13[21]
2-FCV-63-5	6.14[22]
2-FCV-63-22	6.15[20]

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5.0 ACCEPTANCE CRITERIA (continued)

D. Annunciator window 2–XA–55–6F–148-C "ACR PNL 2-L-11B XS IN AUX" (2-M-6) alarms when the Transfer Switches are placed in the AUX position for the following valves:

Valve No.	Step No.
2-FCV-63-110	6.36[17]
2-FCV-63-66	6.33[17]
2-FCV-63-70	6.34[17]
2-FCV-63-95	6.35[17]
2-FCV-63-63	6.31[17]
2-FCV-63-107	6.32[17]
2-FCV-63-65	6.18[20]

E. Annunciator window 2–XA–55–6F–148-B "ACR PNL 2-L-11A XS IN AUX" (2-M-6) alarms when the Transfer Switch is placed in the AUX position for 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET (Step 6.16[18]).

F. Valve 2-FCV-63-25 has the following Auto Responses:

1. Opens upon SI signal receipt and remains open when the SI signal is reset (Steps 6.3[53], 6.3[56], 6.3[58]).

2. SI signal is NOT enabled when Transfer Switch is in the "AUX" position (Step 6.3[53]).

G. With valves 2-FCV-63-8 and 2-FCV-63-11 fully closed, the following valves may be opened:

1. 2-FCV-63-4 (Step 6.1[64])

2. 2-FCV-63-175 (Step 6.2[62]

H. With 2-FCV-63-73 full open and 2-FCV-63-3 full closed, 2-FCV-63-11 may be opened (Step 6.13[72]) or with 2-FCV-63-73 full open, 2-FCV-63-4 full closed and 2-FCV-63-175 full closed, 2-FCV-63-11 may be opened (Step 6.13[62]).

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5.0 ACCEPTANCE CRITERIA (continued)

I. With Safety Injection Signal present, 2-FCV-63-73 may be opened (Step 6.12[82]) or if 2-FCV-74-21 is fully closed, 2-FCV-63-73 may be opened (Step 6.12[13]).

J. Valve 2-FCV-63-73 opens when an "SI" signal and RWST level low/CTMT level high signal are present (Step 6.12[86]). The valve remains open when the "SI" signal and RWST level low/CTMT level high signal are removed (Step 6.12[89]).

K. The following valves will close on receipt of Phase A Containment Isolation Signal and remain closed when the signal is reset:

VALVE NUMBER	STEP NUMBER
2-FCV-63-64	(Steps 6.16[51], 6.16[55])
2-FCV-63-185	(Steps 6.17[29], 6.17[33])

L. With transfer switch in NORMAL, Safety Injection Accumulator discharge valves open on receipt of a Safety Injection Signal and remain open when the signal is reset. The valves cannot be closed while a Safety Injection Signal is present.

VALVE NUMBER	STEP NUMBER
2-FCV-63-98	(Steps 6.4[126], 6.4[129], 6.4[133])
2-FCV-63-67	(Steps 6.5[127], 6.5[130], 6.5[134])

M. Annunciator 2–XA–55–6D–131-C "CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN" (2-M-6) alarms when valve 2-FCV-63-98 or 2-FCV-63-67 is NOT fully open (Steps 6.4[63], 6.5[64]).

N. Annunciator 2–XA–55–6D–133-D "RWST TO SIP FCV-63-5 NOT OPEN ABOVE P-11" (2-M-6) alarms when valve 2-FCV-63-5 is NOT open (Step 6.14[19]).

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

5.0 ACCEPTANCE CRITERIA (continued)

O. The following valves can only be opened from the Auxiliary Control Room if the Transfer Switch is in the AUX position:

VALVE NUMBER	STEP NUMBER	VALVE NUMBER	STEP NUMBER
2-FCV-63-64	6.16[9], 6.16[21]	2-FCV-63-70	6.34[8], 6.34[20]
2-FCV-63-63	6.31[8], 6.31[20]	2-FCV-63-95	6.35[8], 6.35[20]
2-FCV-63-107	6.32[8], 6.32[20]	2-FCV-63-110	6.36[8], 6.36[20]
2-FCV-63-66	6.33[8], 6.33[20]		

P. The following valves can only be operated from the Motor Control Center if the Transfer Switch is in the AUX position:

VALVE NUMBER	STEP NUMBER
2-FCV-63-4	6.1[11], 6.1[16], 6.1[24], 6.1[30]
2-FCV-63-175	6.2[11], 6.2[16], 6.2[24], 6.2[30]
2-FCV-63-98	6.4[60], 6.4[67], 6.4[77], 6.4[83]
2-FCV-63-67	6.5[61], 6.5[68], 6.5[78], 6.5[84]
2-FCV-63-48	6.7[11], 6.7[16], 6.7[24], 6.7[30]
2-FCV-63-153	6.8[11], 6.8[16], 6.8[24], 6.8[30]
2-FCV-63-157	6.10[10], 6.10[15], 6.10[23], 6.10[29]
2-FCV-63-5	6.14[10], 6.14[16], 6.14[25], 6.14[32]
2-FCV-63-22	6.15[10], 6.15[15], 6.15[23], 6.15[29]

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5.0 ACCEPTANCE CRITERIA (continued)

Q. The following valves fail closed on loss of power:

VALVE NUMBER	STEP NUMBER
2-FCV-63-64	6.16[37], 6.16[42]
2-FCV-63-185	6.17[18], 6.17[23]

R. Appropriate windows on CISP illuminate, ("green" indicates closed) and remain illuminated when the CIS is RESET for the following valves:

VALVE NUMBER	STEP NUMBER
2-FCV-63-64	6.16[52]B, 6.16[56]B
2-FCV-63-185	6.17[30]B, 6.17[34]B

S. The red light on 6900V Shutdown BD Logic Relay Panel illuminates when an SI Pump is operating (Step 6.37[52]).

T. Annunciator 2–XA–55–1B–14-E "M-1 THRU M-6 MOTOR TRIPOUT" (2-M-1) alarms and an audible buzzer sounds when an SI pump trips on instantaneous over current (Step 6.37[123]).

U. Annunciator 2–XA–55–1B–14-D "M-1 THRU M-6 MOTOR OVERLOAD" (2-M-1) alarms on a simulated overload of each SI pump (Step 6.37[154]).

V. SI pumps will start on receipt of "SI" signal and remain running with "SI" signal reset (Steps 6.37[78], 6.37[80]).

W. Each Status Monitoring System input for SI pumps 2B-B indicates control power available, Hand Switch in "IN" position, and pump running when breaker is closed (Steps 6.37[26], 6.37[33], 6.37[43]).

X. Annunciator alarms when Transfer Switch for the SI pump 2B-B is in the AUX position (Steps 6.37[60]).

Y. The Safety Injection Pump can only be operated from the switchgear if the Transfer Switch is in the AUX position.

SI Pump	STEP NUMBER
2B-B	6.37[49], 6.37[54], 6.37[62], 6.37[67]

Z. Safety Injection Pump 2B-B Room Cooler Fan, 2-MTR-30-179, AUTO STARTS on start signal of Safety Injection Pump 2B-B (6.37[42]).

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6.0 PERFORMANCE

NOTES

1) Sections 6.1 through 6.37 may be performed in any order provided the Prerequisites for the individual section are complete.
2) Valve stroke times will be determined at both the appropriate control switch and locally at the valve. At the control switch, the time will be from actuation of the control switch to the control switch light indication that the valve has completed its motion. Locally at the valve, the stroke time will be measured by valve motion.
3) Valve stroke time will be measured remotely for acceptance criteria. Local stroke time measurement is for information only. A significant difference between remote and local valve stroke times will be evaluated for impact.
4) Throughout this instruction, the Control Room Operator should verify, acknowledge, clear and otherwise respond to annunciators in the normal fashion.
5) Reset stopwatches before performing the second timed stroke on valves.

6.1 Valve 2-FCV-63-4 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.1 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-4, [A11V/692] SIS PUMP A-A DISCHARGE TO RWST SHUTOFF. _____

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6.1 Valve 2-FCV-63-4 Logic Test (continued)

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-8, [A11W713] RHR HEAT EXCHANGER A TO CVCS CHG PUMP, CLOSED _____

B. 2-FCV-63-72, [A12V/692] CONTAINMENT SUMP TO RHR PUMP A, OPEN _____

C. 2-FCV-63-11, [A11V/713] RHR HEAT EXCHANGER B TO SIS PUMP, CLOSED _____

D. 2-FCV-63-73, [A12V/692] CONTAINMENT SUMP TO RHR PUMP B, OPEN _____

E. 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, CLOSED _____

F. 2-FCV-63-3, [A11U/692] SIS PUMPS RECIRC TO RWST, CLOSED _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2240 _____

B. FD2241 _____

[6] **VERIFY** ICS point FD2241 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2240 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-4, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, is in NORMAL. _____

[9] **ENSURE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT open (**Acc Crit. 5.0**P). _____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

[12] **PLACE** Hand Switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to OPEN, and while the valve is opening,

PLACE Hand Switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-4A, SI PMP A RECIRC TO RWST, red light ON. _____

B. 2-HS-63-4A, SI PMP A RECIRC TO RWST, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2241 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT close (**Acc Crit. 5.0**P). _____

[17] **PLACE** Hand Switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to CLOSE, and while the valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF is closing,

PLACE Hand Switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-4A, SI PMP A RECIRC TO RWST, red light OFF. _____

B. 2-HS-63-4A, SI PMP A RECIRC TO RWST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-4, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-4A, SI PMP A RECIRC TO RWST, red light OFF. _____

B. 2-HS-63-4A, SI PMP A RECIRC TO RWST, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT open (**Acc. Crit. 5.0**P). _____

NOTE

Stop watch timing of valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, stroke time will be done from control switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, stroke. _____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, open stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, open stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, red light ON. _____

B. 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT close (**Acc. Crit. 5.0**P). _____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, stroke time will be done from control switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time the valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, stroke. _____

[32] **RECORD** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, close stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, close stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, red light OFF. _____

B. 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 2-BKR-63-4-B at compartment 10A on 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2240 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 10A (2-BKR-63-4-B) at 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 10A (2-BKR-63-4-B) at 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker2-BKR-63-4-B at compartment 10A on 480V RX MOV BD 2B1-B. _____

[40] **PLACE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** that valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT open (**Acc Crit 5.0**A). _____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

[42] **DEPRESS, AND**

HOLD the armature of relay K2 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, OPENS (**Acc Crit 5.0**A). _____

[45] **RELEASE** K2 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-4-B at compartment 10A on 480V RX MOV BD 2B1-B. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 10A (2-BKR-63-4-B) at 480V RX MOV BD 2B1-B.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 10A (2-BKR-63-4-B) at 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 2-BKR-63-4-B at compartment 10A on 480V RX MOV BD 2B1-B. _____

[50] **PLACE** Hand Switch 2-HS-63-4C, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

[51] **PLACE** Transfer Switch 2-XS-63-4, SIS PUMP A-A DISCH TO RWST SHUTOFF VLV, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[53] **OPEN** valve 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP. _____

[54] **PLACE** control switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[55] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT open. _____

[56] **OPEN** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP. _____

[57] **PLACE** control switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[58] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT open. _____

[59] **CLOSE** valve 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP. _____

[60] **PLACE** control switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[61] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, did NOT open. _____

[62] **CLOSE** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP. _____

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

6.1 Valve 2-FCV-63-4 Logic Test (continued)

[63] **PLACE** control switch 2-HS-63-4A, SI PMP A RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[64] **VERIFY** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, OPENS (**Acc Crit 5.0G**.1). _____

[65] **CLOSE** the following valves:

A. 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF _____

B. 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A _____

C. 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B _____

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

6.2 Valve 2-FCV-63-175 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.2 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-175, [A11U/692] SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP, CLOSED. _____

B. 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A, OPEN _____

C. 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, CLOSED. _____

D. 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP, OPEN _____

E. 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, CLOSED. _____

F. 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2238 _____

B. FD2239 _____

[6] **VERIFY** ICS point FD2239 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2238 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-175, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, is in NORMAL. _____

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, did NOT open (**Acc Crit. 5.0**P). _____

[12] **PLACE** Hand Switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to OPEN, and while the valve is opening,

PLACE Hand Switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-175A, SI PMP B RECIRC TO RWST, red light ON. _____

B. 2-HS-63-175A, SI PMP B RECIRC TO RWST, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2239 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, did NOT close (**Acc Crit. 5.0**P). _____

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

[17] **PLACE** Hand Switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to CLOSE, and while the valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, is closing,

PLACE Hand Switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-175A, SI PMP B RECIRC TO RWST, red light OFF. _____

B. 2-HS-63-175A, SI PMP B RECIRC TO RWST, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-175, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-175A, SI PMP B RECIRC TO RWST, red light OFF. _____

B. 2-HS-63-175A, SI PMP B RECIRC TO RWST, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, did NOT open (**Acc. Crit. 5.0**P). _____

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, stroke time will be done from control switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, stroke.

[26] **RECORD** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, open stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[27] **RECORD** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, open stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

[28] **VERIFY** the following indications:

A. 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, red light ON. _____

B. 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, did NOT close (**Acc. Crit. 5.0**P). _____

NOTE

Stop watch timing of valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, stroke time will be done from control switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time the valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, stroke. _____

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

[32] **RECORD** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, close stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[33] **RECORD** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, close stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[34] **VERIFY** the following indications:

A. 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, red light OFF. _____

B. 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 13D (2-BKR-63-175-B) at 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2238 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-175-B at compartment 13D on 480V RX MOV BD 2B1-B.

_____ 1st

_____ CV

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-175-B at compartment 13D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 2-BKR-63-175-B at compartment 13D on 480V RX MOV BD 2B1-B. _____

[40] **PLACE** Hand Switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** that valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, did NOT open (**Acc Crit 5.0**A). _____

[42] **DEPRESS, AND**

HOLD the armature of relay K5 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, OPENS (**Acc Crit 5.0**A). _____

[45] **RELEASE** K5 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-175-B at compartment 13D on 480V RX MOV BD 2B1-B. _____

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-175-B at compartment 13D on 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-175-B at compartment 13D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 2-BKR-63-175-B at compartment 13D on 480V RX MOV BD 2B1-B. _____

[50] **CLOSE** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, by placing Hand Switch 2-HS-63-175C, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-175, SIS PUMP B-B DISCH TO RWST SHUTOFF VLV, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[53] **OPEN** valve 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP. _____

[54] **PLACE** control switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[55] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, did NOT open. _____

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

6.2 Valve 2-FCV-63-175 Logic Test (continued)

[56] **OPEN** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP. _____

[57] **CLOSE** valve 2-FCV-63-8, RHR HEAT EXCHANGER A TO CVCS CHG PUMP. _____

[58] **PLACE** control switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[59] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, did NOT open. _____

[60] **CLOSE** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP. _____

[61] **PLACE** control switch 2-HS-63-175A, SI PMP B RECIRC TO RWST, to OPEN, **AND**

RELEASE. _____

[62] **VERIFY** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, OPENS (**Acc Crit 5.0G**.2). _____

[63] **CLOSE** the following valves:

A. 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV _____

B. 2-FCV-63-72, CONTAINMENT SUMP TO RHR PUMP A _____

C. 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B _____

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

6.3 Valve 2-FCV-63-25 Logic Test

CAUTION

Opening valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.3 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-25, [A11W/713] SIS BORON INJECTION TANK SHUTOFF VALVE. _____

[4] **ENSURE** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2244 _____

B. FD2245 _____

[6] **VERIFY** ICS point FD2245 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2244 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-25, SIS BORON INJ TANK SHUTOFF VLV TRF, is in NORMAL. _____

[9] **ENSURE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.3 Valve 2-FCV-63-25 Logic Test (continued)

[11] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, did NOT open. _____

[12] **PLACE** Hand Switch 2-HS-63-25A, BIT OUTLET, to OPEN, and while valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, is opening,

PLACE Hand Switch 2-HS-63-25A, BIT OUTLET, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-25A, BIT OUTLET, red light ON. _____

B. 2-HS-63-25A, BIT OUTLET, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2245 displays "NOT CLO". _____

[15] **PLACE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-25A, BIT OUTLET, to CLOSE and while valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, is closing,

PLACE Hand Switch 2-HS-63-25A, BIT OUTLET, to OPEN, **AND**

RELEASE. _____

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

6.3 Valve 2-FCV-63-25 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-25A, BIT OUTLET, red light OFF. _____

B. 2-HS-63-25A, BIT OUTLET, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-25, SIS BORON INJ TANK SHUTOFF VLV TRF, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-25A, BIT OUTLET, red light OFF. _____

B. 2-HS-63-25A, BIT OUTLET, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-25A, BIT OUTLET, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, did NOT open. _____

NOTE

Stop watch timing of valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, stroke time will be done from control switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, stroke. _____

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

6.3 Valve 2-FCV-63-25 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, open stroke time (**Acc. Crit. 5.0**B).

Hand Switch

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[27] **RECORD** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, open stroke time.

Local

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, red light ON. _____

B. 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-25A, BIT OUTLET, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, did NOT close. _____

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

6.3 Valve 2-FCV-63-25 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, stroke time will be done from control switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, stroke. _____

[32] **RECORD** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, close stroke time (**Acc. Crit. 5.0**B).

Hand Switch

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, close stroke time.

Local

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

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

6.3 Valve 2-FCV-63-25 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, red light OFF. _____

B. 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 2-BKR-63-25-B at compartment 11E on 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2244 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-25-B at compartment 11E on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-25-B at compartment 11E on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 2-BKR-63-25-B at compartment 11E on 480V RX MOV BD 2B1-B. _____

[40] **PLACE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, did NOT open (**Acc Crit 5.0**A). _____

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

6.3 Valve 2-FCV-63-25 Logic Test (continued)

[42] **DEPRESS** and **HOLD** the armature of K3 relay in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, OPENS (**Acc Crit 5.0**A). _____

[45] **RELEASE** K3 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-25-B at compartment 11E on 480V MOV BD 2B1-B. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-25-B at compartment 11E on 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-25-B at compartment 11E on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 2-BKR-63-25-B at compartment 11E on 480V MOV BD 2B1-B. _____

[50] **PLACE** Hand Switch 2-HS-63-25C, SIS BORON INJ TANK SHUTOFF VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.3 Valve 2-FCV-63-25 Logic Test (continued)

[51] **LOCATE** and **VERIFY** terminals TB602-1 and TB602-2 in the Panel to 2-R-51. _____ 1st _____ CV

[52] **INSTALL** a jumper across terminals TB602-1 and TB602-2 on the field side of the plastic isolators in the Panel to 2-R-51 (Simulate SI), **AND**

DOCUMENT on Appendix E. _____

[53] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, did NOT open (**Acc Crit 5.0F**). _____

[54] **PLACE** Transfer Switch 2-XS-63-25, SIS BORON INJ TANK SHUTOFF VLV TRF, to NORMAL. _____

[55] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[56] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, OPENS (**Acc Crit 5.0F**). _____

[57] **REMOVE** the jumper across the terminals TB-602-1 and TB602-2 in Panel 2-R-51. _____ 1st _____ CV

[58] **VERIFY** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE, remains OPEN (**Acc Crit 5.0F**). _____

[59] **CLOSE** valve 2-FCV-63-25, SIS BORON INJECTION TANK SHUTOFF VALVE. _____

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

6.4 Valve 2-FCV-63-98 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.4 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and valve 2-FCV-63-98, [IC/722 AZ142] SIS ACCUM TK 2 FLOW ISOLATION VLV. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-118, [IC/716 AZ40] SIS ACCUM TK 1 FLOW ISOLATION VLV, OPEN _____

B. 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, OPEN _____

C. 2-FCV-63-80, [IC/716 AZ215] SIS ACCUM TK 3 FLOW ISOLATION VLV, OPEN _____

D. 2-FCV-63-67, [IC/716 AZ320] SIS ACCUM TK 4 FLOW ISOLATION VLV, OPEN _____

[5] **ENSURE** that 2-HS-63-98A, CL ACCUM 2 OUTLET, is in A AUTO. _____

[6] **ENSURE** that 2-HS-63-98A, CL ACCUM 2 OUTLET, has indication. _____

[7] **ENSURE** that 2-XS-63-98,SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, is in AUX. _____

[8] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, ALARMS. _____

[9] **ENSURE** that breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B, is OPEN. _____

[10] **OPEN** compartment door for compartment 8D of 480V RX MOV BD 2B1-B. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.4[11] through 6.4[19].

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

[12] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[13] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs. _____

NOTE

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

[14] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV. _____ 1st _____ CV

[15] **REMOVE** the thermal overloads for 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[16] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs. _____ 1st _____ CV

[17] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[18] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____ 1st _____ CV

[19] **ENGAGE** the compartment locking devices at the top and bottom of the compartment. _____

[20] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2B1-B. _____

[21] **CLOSE** breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B. _____

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.4[22] through 6.4[24].

[22] **OPEN** compartment door for compartment 8D of 480V REACTOR MOV 2B1-B with the breaker closed by using the screw-driven defeater. _____

[23] **VERIFY** the red LED on the BFD is lit indicating the phase rotation for the BFD is correct. _____

[24] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2B1-B. _____

[25] **OPEN** breaker 8D (2-BKR-63-98-B) at 480V RX MOV BD 2B1-B. _____

[26] **OPEN** compartment door for compartment 8D of 480V REACTOR MOV 2B1-B. _____

[27] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-B18/32 in compartment 8D of 480V REACTOR MOV 2B1-B. _____ 1st _____ CV

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for step 6.4[28].

[28] **REMOVE** the A Phase penetration fuse of 2-FU-213-B18/32 in compartment 8D of 480V REACTOR MOV 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[29] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2B1-B. _____

[30] **CLOSE** breaker 8D (2-BKR-63-98-B) at 480V RX MOV BD 2B1-B. _____

[31] **PLACE** 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[32] **ENSURE** that 2-XS-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, is in NORMAL. _____

[33] **ENSURE** that 2-HS-63-98A, CL ACCUM 2 OUTLET, has no indication. _____

[34] **ENSURE** that 2-XS-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, is in AUX. _____

[35] **LOCATE** and **VERIFY** terminal block points 3 (8DC1) and 7 (8DC2) in the back of compartment 8D of 480V REACTOR MOV 2B1-B.

_____ 1st

_____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[36] **MOMENTARILY PLACE** a handheld jumper across the terminal block points 3 (8DC1) to point 7 (8DC2) in the back of compartment 8D of 480V REACTOR MOV 2B1-B. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[37] **PLACE** 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[38] **VERIFY** that breaker 8D (2-BKR-63-98-B) at 480V RX MOV BD 2B1-B trips OPEN. _____

[39] **OPEN** compartment door for compartment 8D of 480V REACTOR MOV 2B1-B. _____

[40] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-B18/32 in compartment 8D of 480V REACTOR MOV 2B1-B.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.4[41] through 6.4[50].

[41] **REINSTALL** the A Phase penetration fuse of 2-FU-213-B18/32 in compartment 8D of 480V REACTOR MOV 2B1-B, **AND**

DOCUMENT on Appendix E. _____

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

[43] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[44] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs.

_____ 1st

_____ CV

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[45] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV.

_____ 1st

_____ CV

NOTE

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

[46] **REINSTALL** the thermal overloads for 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[47] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs.

_____ 1st

_____ CV

[48] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged.

_____ 1st

_____ CV

[49] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____

[50] **ENGAGE** the compartment locking devices at the top and bottom of the compartment.

_____ 1st

_____ CV

[51] **CLOSE** compartment door for compartment 8D of 480V REACTOR MOV 2B1-B. _____

[52] **CLOSE** breaker 8D (2-BKR-63-98-B) at 480V RX MOV BD 2B1-B. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[53] **PLACE** 2-XS-63-98,SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, in NORMAL _____

[54] **ENSURE** 2–XA–55–6D–131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is CLEAR. _____

[55] **ENSURE** that 2-HS-63-98A, CL ACCUM 2 OUTLET, has indication. _____

[56] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2251 _____

B. FD2252 _____

[57] **VERIFY** ICS point FD2252 displays "OPEN". _____

[58] **VERIFY** ICS point FD2251 displays "PWR ON". _____

[59] **PLACE** Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to CLOSE **AND**

RETURN to NORMAL. _____

[60] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT close (**Acc Crit. 5.0**P). _____

[61] **PLACE** Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to CLOSE and while valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, is closing,

PLACE Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to OPEN, **AND**

RELEASE. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[62] **VERIFY** the following indications:

A. 2-HS-63-98A, CL ACCUM 2 OUTLET, red light OFF. _____

B. 2-HS-63-98A, CL ACCUM 2 OUTLET, green light ON. _____

C. Valve is CLOSED (Local). _____

[63] **VERIFY** 2–XA–55–6D–131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, ALARMS (**Acc Crit 5.0**M). _____

[64] **VERIFY** Events Display Monitor indicates, 131-C FCV-63-98 NOT OPEN ABOVE P-11 CLA 2, is in Alarm. _____

[65] **VERIFY** ICS point FD2252 displays "NOT OPE". _____

[66] **PLACE** Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[67] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT open (**Acc Crit. 5.0**P). _____

[68] **PLACE** Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to OPEN and while valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, is opening,

PLACE Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to CLOSE, **AND**

RELEASE. _____

[69] **VERIFY** the following indications:

A. 2-HS-63-98A, CL ACCUM 2 OUTLET, red light ON. _____

B. 2-HS-63-98A, CL ACCUM 2 OUTLET, green light OFF. _____

C. Valve is OPEN (Local). _____

[70] **ENSURE** 2–XA–55–6D–131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is CLEAR. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[71] **VERIFY** Events Display Monitor indicates, 131-C FCV-63-98 NOT OPEN ABOVE P-11 CLA 2, is in Normal. _____

[72] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[73] **PLACE** Transfer Switch 2-XS-63-98,SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, to AUX. _____

[74] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[75] **VERIFY** the following indications:

A. 2-HS-63-98A, CL ACCUM 2 OUTLET, red light OFF. _____

B. 2-HS-63-98A, CL ACCUM 2 OUTLET, green light OFF. _____

[76] **PLACE** Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to CLOSE, **AND**

RELEASE. _____

[77] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT close (**Acc. Crit. 5.0**P). _____

NOTE

Stop watch timing of valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, stroke time will be done from control switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, and locally at the valve.

[78] **PLACE** Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, stroke. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[79] **RECORD** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, close stroke time.

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[80] **RECORD** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, close stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[81] **VERIFY** the following indications:

A. 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[82] **PLACE** Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to OPEN, **AND**

RELEASE. _____

[83] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT open (**Acc. Crit. 5.0**P). _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, stroke time will be done from control switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, and locally at the valve.

[84] **PLACE** Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, stroke. _____

[85] **RECORD** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, close stroke time.

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[86] **RECORD** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, close stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[87] **VERIFY** the following indications:

A. 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[88] **PLACE** Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to CLOSE, **AND**

RELEASE. _____

[89] **DEPRESS, AND**

RELEASE 2-HS-63-98B OPEN pushbutton, and while the valve is opening,

DEPRESS, AND

RELEASE 2-HS-63-98B STOP pushbutton. _____

[90] **VERIFY** the following indications:

A. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

[91] **DEPRESS, AND**

RELEASE 2-HS-63-98B OPEN pushbutton. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[92] **VERIFY** the following indications:

A. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, green light OFF. _____

C. Valve OPEN (Local). _____

[93] **DEPRESS, AND**

RELEASE 2-HS-63-98B CLOSE pushbutton, and while the valve is closing,

DEPRESS, AND

RELEASE 2-HS-63-98B STOP pushbutton. _____

[94] **VERIFY** the following indications:

A. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

[95] **DEPRESS, AND**

RELEASE 2-HS-63-98B CLOSE pushbutton. _____

[96] **VERIFY** the following indications:

A. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-98B, SIS ACCUM TK 2 FLOW ISOLATION VLV, green light ON. _____

C. Valve CLOSED (Local). _____

[97] **OPEN** breaker 8D (2-BKR-63-98-B) at 480V RX MOV BD 2B1-B. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[98] **VERIFY** ICS point FD2251 displays "PWR OFF". _____

[99] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[100] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[101] **CLOSE** breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B. _____

[102] **PLACE** Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[103] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT open (**Acc Crit 5.0**A). _____

[104] **DEPRESS** and **HOLD** the armature of relay K4 in the back of Panel 16D at 480V RX MOV BD 2B1-B to simulate an Overload Bypass Condition. _____

[105] **PLACE** Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[106] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, opens (**Acc Crit 5.0**A). _____

[107] **RELEASE** K4 relay armature. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[108] **OPEN** breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B. _____

[109] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[110] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[111] **CLOSE** breaker 2-BKR-63-98-B at compartment 8D on 480V RX MOV BD 2B1-B. _____

[112] **CLOSE** valve 2-FCV-63-98 by placing Hand Switch 2-HS-63-98C, SIS ACCUM TK 2 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[113] **PLACE** Transfer Switch 2-XS-63-98,SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, to NORMAL. _____

[114] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[115] **LOCATE** and **VERIFY** terminals TB649-9 and TB649-10 in Panel 2-R-51. _____

1st

_____

CV

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[116] **INSTALL** a jumper across terminals TB649-9 and TB649-10 in Panel 2-R-51 on the field side of the plastic isolators (Open valve above P-11), **AND**

DOCUMENT on Appendix E. _____

[117] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, opens (Local). _____

[118] **LOCATE** and **VERIFY** terminals TB649-9 and TB649-10 in Panel 2-R-51.

_____ 1st

_____ CV

[119] **REMOVE** the jumper across terminals TB649-9 and TB649-10 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[120] **PLACE** Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to CLOSE, **AND**

RELEASE. _____

[121] **PLACE** Transfer Switch 2-XS-63-98,SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, to AUX. _____

[122] **LOCATE** and **VERIFY** terminals TB602-5 and TB602-6 in Panel 2-R-51.

_____ 1st

_____ CV

[123] **INSTALL** a jumper across terminals TB602-5 and TB602-6 in Panel 2-R-51 on the field side of the plastic isolators (SI signal), **AND**

DOCUMENT on Appendix E. _____

[124] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT open. _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[125] **PLACE** Transfer Switch 2-XS-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV TRF, to NORMAL. _____

[126] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, opens (**Acc Crit 5.0**L). _____

[127] **LOCATE** and **VERIFY** terminals TB602-5 and TB602-6 in Panel 2-R-51. _____ 1st _____ CV

[128] **REMOVE** the jumper across terminals TB602-5 and TB602-6 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[129] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, remains open (**Acc Crit 5.0**L). _____

[130] **LOCATE** and **VERIFY** terminals TB602-11 and TB602-12 in Panel 2-R-51. _____ 1st _____ CV

[131] **REMOVE** the jumper across the terminals TB602-11 and TB602-12 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[132] **PLACE** Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to CLOSE, **AND**

RELEASE. _____

[133] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT close (**Acc Crit 5.0**L). _____

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

6.4 Valve 2-FCV-63-98 Logic Test (continued)

[134] **LOCATE** and **VERIFY** terminals TB602-11 and TB602-12 in Panel 2-R-51.

_____ 1st

_____ CV

[135] **REPLACE** jumper across the terminals TB602-11 and TB602-12 in Panel 2-R-51 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

[136] **OPEN** 480V Reac. MOV BD 2B1-B breaker at Compt. 3F2 (2-BKR-63-98-A/B). _____

[137] **PLACE** Hand Switch 2-HS-63-98A, CL ACCUM 2 OUTLET, to CLOSE, **AND**

RELEASE. _____

[138] **VERIFY** valve 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, did NOT close. _____

[139] **CLOSE** 480V Reac. MOV BD 2B1-B breaker at Compt. 3F2 (2-BKR-63-98-A/B). _____

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

6.5 Valve 2-FCV-63-67 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.5 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-118, SIS ACCUM TK 1 FLOW ISOLATION VLV, OPEN _____

B. 2-FCV-63-98, SIS ACCUM TK 2 FLOW ISOLATION VLV, OPEN _____

C. 2-FCV-63-80, SIS ACCUM TK 3 FLOW ISOLATION VLV, OPEN _____

D. 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, OPEN _____

[5] **ENSURE** that 2-HS-63-67A, CL ACCUM 4 OUTLET, is in A AUTO. _____

[6] **ENSURE** that 2-HS-63-67A, CL ACCUM 4 OUTLET, has indication. _____

[7] **ENSURE** that 2-XS-63-67,SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, is in AUX. _____

[8] **ENSURE** 2-XA-55-6D-131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, ALARMS. _____

[9] **ENSURE** that breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B, is OPEN. _____

[10] **OPEN** compartment door for compartment 7D of 480V RX MOV BD 2B1-B. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.5[11] through 6.5[20].

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

[12] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[13] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs. _____

NOTE

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

[14] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV.

_____ 1st

_____ CV

[15] **REMOVE** the thermal overloads for 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[16] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs.

_____ 1st

_____ CV

[17] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[18] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____ 1st _____ CV

[19] **ENGAGE** the compartment locking devices at the top and bottom of the compartment. _____

[20] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2B1-B. _____

[21] **CLOSE** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.5[22] through 6.5[24].

[22] **OPEN** compartment door for compartment 7D of 480V REACTOR MOV 2B1-B with the breaker closed by using the screw-driven defeater. _____

[23] **VERIFY** the red LED on the BFD is lit indicating the phase rotation for the BFD is correct. _____

[24] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2B1-B. _____

[25] **OPEN** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

[26] **OPEN** compartment door for compartment 7D of 480V REACTOR MOV 2B1-B. _____

[27] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-B17/32 in compartment 7D of 480V REACTOR MOV 2B1-B. _____ 1st _____ CV

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for step 6.5[28].

[28] **REMOVE** the A Phase penetration fuse of 2-FU-213-B17/32 in compartment 7D of 480V REACTOR MOV 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[29] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2B1-B. _____

[30] **CLOSE** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

[31] **PLACE** 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[32] **ENSURE** that 2-XS-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, is in NORMAL. _____

[33] **ENSURE** that 2-HS-63-67A, CL ACCUM 4 OUTLET, has no indication. _____

[34] **ENSURE** that 2-XS-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, is in AUX. _____

[35] **LOCATE** and **VERIFY** terminal block points 3 (7DC1) and 7 (7DC2) in the back of compartment 7D of 480V REACTOR MOV 2B1-B.

_____ 1st

_____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[36] **MOMENTARILY PLACE** a handheld jumper across the terminal block points 3 (7DC1) to point 7 (7DC2) in the back of compartment 7D of 480V REACTOR MOV 2B1-B. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[37] **PLACE** 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to OPEN and then to NORMAL. _____

[38] **VERIFY** that breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B trips OPEN. _____

[39] **OPEN** compartment door for compartment 7D of 480V REACTOR MOV 2B1-B _____

[40] **LOCATE** and **VERIFY** the A Phase penetration fuse of 2-FU-213-B17/32 in compartment 7D of 480V REACTOR MOV 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for steps 6.5[41] through 6.5[50].

[41] **REINSTALL** the A Phase penetration fuse of 2-FU-213-B17/32 in compartment 7D of 480V REACTOR MOV 2B1-B, **AND**

DOCUMENT on Appendix E. _____

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

[43] **PULL** the breaker compartment forward until the compartment stabs disengage from the board bus. _____

[44] **ENGAGE** the compartment locking devices at the top and bottom of the compartment while the bucket is on the outside to prevent the bucket from accidentally engaging the bus stabs. _____ 1st _____ CV

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

NOTE

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

[45] **LOCATE** and **VERIFY** the thermal overloads for 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV. _____ 1st _____ CV

[46] **REINSTALL** the thermal overloads for 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, **AND**

DOCUMENT on Appendix E. _____

[47] **DISENGAGE** the locking devices at the top and bottom of the breaker compartment to allow the breaker bucket to fully engage the bus stabs. _____ 1st _____ CV

[48] **INSTALL** the breaker bucket into the compartment, ensuring that the bus stabs are fully engaged. _____ 1st _____ CV

[49] **IF** the MCC bucket has pull apart terminal blocks, **THEN**

ENSURE the blocks re-engage. _____

[50] **ENGAGE** the compartment locking devices at the top and bottom of the compartment. _____ 1st _____ CV

[51] **CLOSE** compartment door for compartment 7D of 480V REACTOR MOV 2B1-B. _____

[52] **CLOSE** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[53] **PLACE** 2-XS-63-67,SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, in NORMAL _____

[54] **ENSURE** 2–XA–55–6D–131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is CLEAR. _____

[55] **ENSURE** that 2-HS-63-67A, CL ACCUM 4 OUTLET, has indication. _____

[56] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2249 _____

B. FD2250 _____

[57] **VERIFY** ICS point FD2250 displays "OPEN". _____

[58] **VERIFY** ICS point FD2249 displays "PWR ON". _____

[59] **ENSURE** Transfer Switch 2-XS-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, is in NORMAL. _____

[60] **PLACE** Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[61] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did NOT close (**Acc Crit. 5.0**P). _____

[62] **PLACE** Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to CLOSE and while valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, is closing,

PLACE Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to OPEN, **AND**

RELEASE. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[63] **VERIFY** the following indications:

A. 2-HS-63-67A, CL ACCUM 4 OUTLET, red light OFF. _____

B. 2-HS-63-67A, CL ACCUM 4 OUTLET, green light ON. _____

C. Valve is CLOSED (Local). _____

[64] **VERIFY** 2–XA–55–6D–131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, ALARMS (**Acc Crit 5.0**M). _____

[65] **VERIFY** Events Display Monitor indicates, 131-C FCV-63-67 NOT OPEN ABOVE P-11 CLA 4, is in Alarm. _____

[66] **VERIFY** ICS point FD2250 displays "NOT OPE". _____

[67] **PLACE** Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[68] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did NOT open (**Acc Crit. 5.0**P). _____

[69] **PLACE** Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to OPEN and while valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, is opening,

PLACE Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to CLOSE, **AND**

RELEASE. _____

[70] **VERIFY** the following indications:

A. 2-HS-63-67A, CL ACCUM 4 OUTLET, red light ON. _____

B. 2-HS-63-67A, CL ACCUM 4 OUTLET, green light OFF. _____

C. Valve is OPEN (Local). _____

[71] **ENSURE** 2–XA–55–6D–131C, CL ACCUM FCV 63-118/98/80/67 NOT FULL OPEN, is CLEAR. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[72] **VERIFY** Events Display Monitor indicates, 131-C FCV-63-67 NOT OPEN ABOVE P-11 CLA 4, is in NORMAL. _____

[73] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[74] **PLACE** Transfer Switch 2-XS-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, to AUX. _____

[75] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[76] **VERIFY** the following indications:

A. 2-HS-63-67A, CL ACCUM 4 OUTLET, red light OFF. _____

B. 2-HS-63-67A, CL ACCUM 4 OUTLET, green light OFF. _____

[77] **PLACE** Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to CLOSE, **AND**

RELEASE. _____

[78] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did NOT close (**Acc. Crit. 5.0**P). _____

NOTE

Stop watch timing of valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, stroke time will be done from control switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, and locally at the valve.

[79] **PLACE** Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, stroke. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[80] **RECORD** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, close stroke time.

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[81] **RECORD** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, close stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[82] **VERIFY** the following indications:

A. 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[83] **PLACE** Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to OPEN, **AND**

RELEASE. _____

[84] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did NOT open (**Acc. Crit. 5.0**P). _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, stroke time will be done from control switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, and locally at the valve.

[85] **PLACE** Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, stroke. _____

[86] **RECORD** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, open stroke time.

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[87] **RECORD** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, open stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[88] **VERIFY** the following indications:

A. 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[89] **PLACE** Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to CLOSE, **AND**

RELEASE. _____

[90] **DEPRESS, AND**

RELEASE 2-HS-63-67B OPEN pushbutton, and while the valve is opening,

DEPRESS, AND

RELEASE 2-HS-63-67B STOP pushbutton. _____

[91] **VERIFY** the following indications:

A. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

[92] **DEPRESS, AND**

RELEASE 2-HS-63-67B OPEN pushbutton. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[93] **VERIFY** the following indications:

A. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, green light OFF. _____

C. Valve **OPEN** (Local). _____

[94] **DEPRESS, AND**

RELEASE 2-HS-63-67B CLOSE pushbutton, and while the valve is closing,

DEPRESS, AND

RELEASE 2-HS-63-67B STOP pushbutton. _____

[95] **VERIFY** the following indications:

A. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, red light ON. _____

B. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, green light ON. _____

C. Valve mid-position (Local). _____

[96] **DEPRESS, AND**

RELEASE 2-HS-63-67B CLOSE pushbutton. _____

[97] **VERIFY** the following indications:

A. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, red light OFF. _____

B. 2-HS-63-67B, SIS ACCUM TK 4 FLOW ISOLATION VLV, green light ON. _____

C. Valve CLOSED (Local). _____

[98] **OPEN** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[99] **VERIFY** ICS point FD2249 displays "PWR OFF". _____

[100] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[101] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[102] **CLOSE** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

[103] **PLACE** Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[104] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did NOT open (**Acc Crit 5.0**A). _____

[105] **DEPRESS, AND**

HOLD the armature of relay K4 in the back of Panel 16D at 480V RX MOV BD 2B1-B to simulate an Overload Bypass Condition. _____

[106] **PLACE** Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[107] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, opens (**Acc Crit 5.0**A). _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[108] **RELEASE** K4 relay armature. _____

[109] **OPEN** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

[110] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[111] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[112] **CLOSE** breaker 2-BKR-63-67-B at compartment 7D on 480V RX MOV BD 2B1-B. _____

[113] **CLOSE** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, by placing Hand Switch 2-HS-63-67C, SIS ACCUM TK 4 FLOW ISOLATION VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[114] **PLACE** Transfer Switch 2-XS-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, to NORMAL. _____

[115] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[116] **LOCATE** and **VERIFY** terminals TB649-11 and TB649-12 in Panel 2-R-51. _____

1st

_____

CV

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[117] **INSTALL** a jumper across terminals TB649-11 and TB649-12 in Panel 2-R-51 on the field side of the plastic isolators (Open valve above P-11), **AND**

DOCUMENT on Appendix E. _____

[118] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, opens (Local). _____

[119] **LOCATE** and **VERIFY** terminals TB649-11 and TB649-12 in Panel 2-R-51.

_____ 1st

_____ CV

[120] **REMOVE** the jumper across terminals TB649-11 and TB649-12 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[121] **PLACE** Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to CLOSE, **AND**

RELEASE. _____

[122] **PLACE** Transfer Switch 2-XS-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, to AUX. _____

[123] **LOCATE** and **VERIFY** terminals TB621-7 and TB621-8 in Panel 2-R-51.

_____ 1st

_____ CV

[124] **INSTALL** a jumper across terminals TB621-7 and TB621-8 in Panel 2-R-51 on the field side of the plastic isolators (SI signal), **AND**

DOCUMENT on Appendix E. _____

[125] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did NOT open. _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[126] **PLACE** Transfer Switch 2-XS-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV TRF, to NORMAL. _____

[127] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, opens (**Acc Crit 5.0**L). _____

[128] **LOCATE** and **VERIFY** terminals TB621-7 and TB621-8 in Panel 2-R-51.

_____ 1st

_____ CV

[129] **REMOVE** the jumper across terminals TB621-7 and TB621-8 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[130] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, remains open (**Acc Crit 5.0**L). _____

[131] **LOCATE** and **VERIFY** terminals TB620-11 and TB620-12 in Panel 2-R-51.

_____ 1st

_____ CV

[132] **REMOVE** the jumper across the terminals TB620-11 and TB620-12 in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[133] **PLACE** Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to CLOSE, **AND**

RELEASE. _____

[134] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did NOT close (**Acc Crit 5.0**L). _____

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

6.5 Valve 2-FCV-63-67 Logic Test (continued)

[135] **LOCATE** and **VERIFY** terminals TB620-11 and TB620-12 in Panel 2-R-51.

_____ 1st

_____ CV

[136] **REPLACE** jumper across the terminals TB620-11 and TB620-12 in Panel 2-R-51 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

[137] **OPEN** 480V Reac. MOV BD 2B1-B breaker at compt. 16F2 (2-BKR-63-67-A/B).

[138] **PLACE** Hand Switch 2-HS-63-67A, CL ACCUM 4 OUTLET, to CLOSE, **AND**

RELEASE. _____

[139] **VERIFY** valve 2-FCV-63-67, SIS ACCUM TK 4 FLOW ISOLATION VLV, did **NOT** close. _____

[140] **CLOSE** 480V Reac. MOV BD 2B1-B breaker at compt. 16F2 (2-BKR-63-67-A/B). _____

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

6.6 Valve 2-FCV-63-6 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.6 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-6, [A11V/692] SIS PUMP INLET TO CVCS CHG PUMP. _____

[4] **ENSURE** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2225 _____

B. FD2226 _____

[6] **VERIFY** ICS point FD2226 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2225 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-6, SIS PUMP INLET TO CVCS CHG PMP TRF is in NORMAL. _____

[9] **PLACE** Hand Switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[10] **VERIFY** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, did NOT open. _____

[11] **PLACE** Hand Switch 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN and while valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, is opening,

PLACE Hand Switch 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

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

6.6 Valve 2-FCV-63-6 Logic Test (continued)

[12] **VERIFY** the following indications:

A. 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, red light ON. _____

B. 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, green light OFF. _____

C. Valve is OPEN (Local). _____

[13] **VERIFY** ICS point FD2226 displays "NOT CLS". _____

[14] **PLACE** Hand Switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL. _____

[15] **VERIFY** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, did NOT close. _____

[16] **PLACE** Hand Switch 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE, and while valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, is closing,

PLACE Hand Switch 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[17] **VERIFY** the following indications:

A. 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, green light ON. _____

C. Valve is CLOSED (Local). _____

[18] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[19] **PLACE** Transfer Switch 2-XS-63-6, SIS PUMP INLET TO CVCS CHG PMP TRF, to AUX. _____

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

6.6 Valve 2-FCV-63-6 Logic Test (continued)

[20] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[21] **VERIFY** the following indications:

A. 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, green light OFF. _____

[22] **PLACE** Hand Switch 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[23] **VERIFY** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, did NOT open. _____

NOTE

Stop watch timing of valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, stroke time will be done from control switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, and locally at the valve.

[24] **PLACE** Hand Switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, stroke. _____

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

6.6 Valve 2-FCV-63-6 Logic Test (continued)

[25] **RECORD** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, open stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[26] **RECORD** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, open stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[27] **VERIFY** the following indications:

A. 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, red light ON. _____

B. 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, green light OFF. _____

C. Valve is OPEN (Local). _____

[28] **PLACE** Hand Switch 2-HS-63-6A, RHR HX A OUTLET TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[29] **VERIFY** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, did NOT close. _____

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

6.6 Valve 2-FCV-63-6 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, stroke time will be done from control switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, and locally at the valve.

[30] **PLACE** Hand Switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, stroke. _____

[31] **RECORD** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[32] **RECORD** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.6 Valve 2-FCV-63-6 Logic Test (continued)

[33] **VERIFY** the following indications:

A. 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, red light OFF. _____

B. 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, green light ON. _____

C. Valve is CLOSED (Local). _____

[34] **OPEN** breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B. _____

[35] **VERIFY** ICS point FD2225 displays "PWR OFF". _____

[36] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[37] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[38] **CLOSE** breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B. _____

[39] **PLACE** Hand Switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[40] **VERIFY** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, did NOT open (**Acc Crit** 5.0A). _____

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

6.6 Valve 2-FCV-63-6 Logic Test (continued)

[41] **DEPRESS AND**

HOLD the armature of relay K3 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[42] **PLACE** Hand Switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, to OPEN, **AND**

RETURN to NORMAL. _____

[43] **VERIFY** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, OPENS (**Acc Crit** 5.0A). _____

[44] **RELEASE** K3 relay armature. _____

[45] **OPEN** breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B. _____

[46] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[47] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[48] **CLOSE** breaker 2-BKR-63-6-B at compartment 11A on 480V RX MOV BD 2B1-B. _____

[49] **CLOSE** valve 2-FCV-63-6, SIS PUMP INLET TO CVCS CHG PUMP, by placing Hand Switch 2-HS-63-6C, SIS PUMP INLET TO CVCS CHG PMP, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.6 Valve 2-FCV-63-6 Logic Test (continued)

[50] **PLACE** Transfer Switch 2-XS-63-6, SIS PUMP INLET TO CVCS CHG PMP TRF, to NORMAL. _____

[51] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

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

6.7 Valve 2-FCV-63-48 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.7 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-48, [A10U/692] SIS PUMP 2B INLET VALVE. _____

[4] **ENSURE** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2223 _____

B. FD2224 _____

[6] **VERIFY** ICS point FD2224 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2223 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-48, SIS PUMP B-B INLET VLV, is in NORMAL.

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-48C, SIS PUMP B-B INLET VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, did NOT open (**Acc Crit.** 5.0P). _____

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

6.7 Valve 2-FCV-63-48 Logic Test (continued)

[12] **PLACE** Hand Switch 2-HS-63-48A, SI PMP B SUCTION, to OPEN, and while valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, is opening,

PLACE Hand Switch 2-HS-63-48A, SI PMP B SUCTION, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-48A, SI PMP B SUCTION, red light ON. _____

B. 2-HS-63-48A, SI PMP B SUCTION, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2224 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, did NOT close (**Acc Crit.** 5.0P). _____

[17] **PLACE** Hand Switch 2-HS-63-48A, SI PMP B SUCTION, to CLOSE, and while valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, is closing,

PLACE Hand Switch 2-HS-63-48A, SI PMP B SUCTION, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-48A, SI PMP B SUCTION, red light OFF. _____

B. 2-HS-63-48A, SI PMP B SUCTION, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.7 Valve 2-FCV-63-48 Logic Test (continued)

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-48, SIS PUMP B-B INLET VLV, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-48A, SI PMP B SUCTION, red light OFF. _____

B. 2-HS-63-48A, SI PMP B SUCTION, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-48A, SI PMP B SUCTION, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, did NOT open (**Acc. Crit.** 5.0P). _____

NOTE

Stop watch timing of valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, stroke time will be done from control switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, stroke. _____

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

6.7 Valve 2-FCV-63-48 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, OPEN stroke time.

Local

_____ seconds (less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-48C, SIS PUMP B-B INLET VLV, red light ON. _____

B. 2-HS-63-48C, SIS PUMP B-B INLET VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-48A, SI PMP B SUCTION, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, did NOT close (**Acc. Crit.** 5.0P). _____

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

6.7 Valve 2-FCV-63-48 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, stroke time will be done from control switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, to CLOSE, **AND**

RELEASE and simultaneously time valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, stroke. _____

[32] **RECORD** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, CLOSE stroke time.

Local

_____ seconds (less than or equal to 15 sec)

M&TE _____ Cal Due Date _____

_____

[34] **VERIFY** the following indications:

A. 2-HS-63-48C, SIS PUMP B-B INLET VLV, red light OFF. _____

B. 2-HS-63-48C, SIS PUMP B-B INLET VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.7 Valve 2-FCV-63-48 Logic Test (continued)

[35] **OPEN** breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2223 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B. _____

[40] **PLACE** Hand Switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, did NOT open (**Acc Crit** 5.0A). _____

[42] **DEPRESS AND**

HOLD the armature of relay K7 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-48C, SIS PUMP B-B INLET VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.7 Valve 2-FCV-63-48 Logic Test (continued)

[44] **VERIFY** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K7 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 2-BKR-63-48-B at compartment 12B on 480V RX MOV BD 2B1-B. _____

[50] **CLOSE** valve 2-FCV-63-48, SIS PUMP 2B INLET VALVE, by placing Hand Switch 2-HS-63-48C to CLOSE, **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-48, SIS PUMP B-B INLET VLV, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

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

6.8 Valve 2-FCV-63-153 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.8 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-153, [A11W/713] SIS PUMP 2B OUTLET VALVE. _____

[4] **ENSURE** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2232 _____

B. FD2233 _____

[6] **VERIFY** ICS point FD2233 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2232 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-153, SIS PMP B-B OUT FLOW CNTL VLV TRF, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, did NOT open (**Acc Crit.** 5.0P). _____

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

6.8 Valve 2-FCV-63-153 Logic Test (continued)

[12] **PLACE** Hand Switch 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, to OPEN, and while valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, is opening,

PLACE Hand Switch 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, red light ON. _____

B. 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2233 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, did NOT close (**Acc Crit.** 5.0P). _____

[17] **PLACE** hands witch 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, to CLOSE, and while valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, is closing,

PLACE Hand Switch 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, red light OFF. _____

B. 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.8 Valve 2-FCV-63-153 Logic Test (continued)

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-153, SIS PMP B-B OUT FLOW CNTL VLV TRF, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, red light OFF. _____

B. 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, did NOT open (**Acc. Crit.** 5.0P. _____

NOTE

Stop watch timing of valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, stroke time will be done from control switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL AND simultaneously time valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, stroke. _____

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

6.8 Valve 2-FCV-63-153 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, OPEN stroke time.

Local

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, red light ON. _____

B. 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-153A, SI PMP B TO CL 1-2-3-4, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, did NOT close (**Acc. Crit.** 5.0P). _____

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

6.8 Valve 2-FCV-63-153 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, stroke time will be done from control switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, stroke. _____

[32] **RECORD** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, CLOSE stroke time.

Local

_____ seconds (less than or equal to 12 sec)

M&TE _____ Cal Due Date _____

_____

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

6.8 Valve 2-FCV-63-153 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, red light OFF. _____

B. 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2232 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B. _____

[40] **PLACE** Hand Switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, did NOT open (**Acc Crit** 5.0A). _____

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

6.8 Valve 2-FCV-63-153 Logic Test (continued)

[42] **DEPRESS, AND**

HOLD the armature of relay K4 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K4 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 2-BKR-63-153-B at compartment 13A on 480V RX MOV BD 2B1-B. _____

[50] **CLOSE** valve 2-FCV-63-153, SIS PUMP 2B OUTLET VALVE, by placing Hand Switch 2-HS-63-153C, SIS PMP B-B OUT FLOW CNTL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.8 Valve 2-FCV-63-153 Logic Test (continued)

[51] **PLACE** Transfer Switch 2-XS-63-153, SIS PMP B-B OUT FLOW CNTL VLV TRF, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

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

6.9 Valve 2-FCV-63-94 Logic Test

CAUTION

Opening valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.9 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-94, [A11W/713] SIS TO REACTOR COOLANT LOOPS 1 & 4. _____

[4] **ENSURE** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2247 _____

B. FD2248 _____

[6] **VERIFY** ICS point FD2248 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2247 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-94, RHR TO RCS 1&4 FLOW CONTROL VLV TRF is in NORMAL. _____

[9] **PLACE** Hand Switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[10] **VERIFY** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, did NOT open. _____

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-94A, RHR TO CL 1 & 4, to OPEN and while valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, is opening,

PLACE Hand Switch 2-HS-63-94A, RHR TO CL 1 & 4, to CLOSE, **AND**

RELEASE. _____

[12] **VERIFY** the following indications:

A. 2-HS-63-94A, RHR TO CL 1 & 4, red light ON. _____

B. 2-HS-63-94A, RHR TO CL 1 & 4, green light OFF. _____

C. Valve is OPEN (Local). _____

[13] **VERIFY** ICS point FD2248 displays "OPEN". _____

[14] **PLACE** Hand Switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[15] **VERIFY** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, did NOT close. _____

[16] **PLACE** Hand Switch 2-HS-63-94A, RHR TO CL 1 & 4, to CLOSE and while valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, is closing,

PLACE Hand Switch 2-HS-63-94A, RHR TO CL 1 & 4, to OPEN, **AND**

RELEASE. _____

[17] **VERIFY** the following indications:

A. 2-HS-63-94A, RHR TO CL 1 & 4, red light OFF. _____

B. 2-HS-63-94A, RHR TO CL 1 & 4, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

[18] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[19] **PLACE** Transfer Switch 2-XS-63-94, RHR TO RCS 1&4 FLOW CONTROL VLV TRF, to AUX. _____

[20] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[21] **VERIFY** the following indications:

A. 2-HS-63-94A, RHR TO CL 1 & 4, red light OFF. _____

B. 2-HS-63-94A, RHR TO CL 1 & 4, green light OFF. _____

[22] **PLACE** Hand Switch 2-HS-63-94A, RHR TO CL 1 & 4, to OPEN, **AND**

RELEASE. _____

[23] **VERIFY** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, did **NOT** open. _____

NOTE

Stop watch timing of valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, stroke time will be done from control switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, and locally at the valve.

[24] **PLACE** Hand Switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, stroke. _____

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

[25] **RECORD** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[26] **RECORD** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, OPEN stroke time.

Local

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____

[27] **VERIFY** the following indications:

A. 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[28] **PLACE** Hand Switch 2-HS-63-94A, RHR TO CL 1 & 4, to CLOSE, **AND**

RELEASE. _____

[29] **VERIFY** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, did NOT close. _____

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, stroke time will be done from control switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, and locally at the valve.

[30] **PLACE** Hand Switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, stroke. _____

[31] **RECORD** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[32] **RECORD** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, CLOSE stroke time.

Local

_____ seconds (less than or equal to 40 sec)

M&TE _____ Cal Due Date _____

_____

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

[33] **VERIFY** the following indications:

A. 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, red light OFF. _____

B. 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[34] **DEPRESS, AND**

RELEASE 2-HS-63-94B OPEN pushbutton, and while the valve is opening,

DEPRESS, AND

RELEASE 2-HS-63-94B STOP pushbutton. _____

[35] **VERIFY** the following indications:

A. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, green light ON. _____

C. Valve mid-position (Local). _____

[36] **DEPRESS, AND**

RELEASE 2-HS-63-94B OPEN pushbutton. _____

[37] **VERIFY** the following indications:

A. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, green light OFF. _____

C. Valve OPEN (Local). _____

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

[38] **DEPRESS, AND**

RELEASE 2-HS-63-94B CLOSE pushbutton, and while the valve is closing,

DEPRESS, AND

RELEASE 2-HS-63-94B STOP pushbutton. _____

[39] **VERIFY** the following indications:

A. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, red light ON. _____

B. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, green light ON. _____

C. Valve mid-position (Local). _____

[40] **DEPRESS, AND**

RELEASE 2-HS-63-94B CLOSE pushbutton. _____

[41] **VERIFY** the following indications:

A. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, red light OFF. _____

B. 2-HS-63-94B, CRHR TO RCS 1&4 FLOW CONTROL VLV, green light ON. _____

C. Valve CLOSED (Local). _____

[42] **OPEN** breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B. _____

[43] **VERIFY** ICS point FD2247 displays "PWR OFF". _____

[44] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[45] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[46] **CLOSE** breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B. _____

[47] **PLACE** Hand Switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[48] **VERIFY** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, did NOT open (**Acc Crit** 5.0A). _____

[49] **DEPRESS, AND**

HOLD the armature of relay K4 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[50] **PLACE** Hand Switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[51] **VERIFY** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, OPENS (**Acc Crit** 5.0A). _____

[52] **RELEASE** K4 relay armature. _____

[53] **OPEN** breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B. _____

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

6.9 Valve 2-FCV-63-94 Logic Test (continued)

[54] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[55] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[56] **CLOSE** breaker 2-BKR-63-94-B at compartment 12E on 480V RX MOV BD 2B1-B. _____

[57] **CLOSE** valve 2-FCV-63-94, SIS TO REACTOR COOLANT LOOPS 1 & 4, by placing Hand Switch 2-HS-63-94C, CRHR TO RCS 1&4 FLOW CONTROL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[58] **PLACE** Transfer Switch 2-XS-63-94, RHR TO RCS 1&4 FLOW CONTROL VLV TRF, to NORMAL. _____

[59] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

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

6.10 Valve 2-FCV-63-157 Logic Test

CAUTION

Opening valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.10 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-157, [A11W/713] SIS TO HOT LEG LOOPS 2 & 4. _____

[4] **ENSURE** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2236 _____

B. FD2237 _____

[6] **VERIFY** ICS point FD2237 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2236 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-157, SIS PUMP OUT RCS LP 2&4 H L, is in NORMAL. _____

[9] **PLACE** Hand Switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, to OPEN, **AND**

RETURN to NORMAL. _____

[10] **VERIFY** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, did NOT open (**Acc Crit.** 5.0P). _____

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

6.10 Valve 2-FCV-63-157 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-157A, SI PMP B TO HL 2 & 4, to OPEN and while valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, is opening,

PLACE Hand Switch 2-HS-63-157A, SI PMP B TO HL 2 & 4, to CLOSE, **AND**

RELEASE. _____

[12] **VERIFY** the following indications:

A. 2-HS-63-157A, SI PMP B TO HL 2 & 4, red light ON. _____

B. 2-HS-63-157A, SI PMP B TO HL 2 & 4, green light OFF. _____

C. Valve is OPEN (Local). _____

[13] **VERIFY** ICS point FD2237 displays "NOT CLS". _____

[14] **PLACE** Hand Switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, to CLOSE, **AND**

RETURN to NORMAL. _____

[15] **VERIFY** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, did NOT close (**Acc Crit.** 5.0P). _____

[16] **PLACE** Hand Switch 2-HS-63-157A, SI PMP B TO HL 2 & 4, to CLOSE, and while valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, is closing,

PLACE Hand Switch 2-HS-63-157A, SI PMP B TO HL 2 & 4, to OPEN, **AND**

RELEASE. _____

[17] **VERIFY** the following indications:

A. 2-HS-63-157A, SI PMP B TO HL 2 & 4, red light OFF. _____

B. 2-HS-63-157A, SI PMP B TO HL 2 & 4, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.10 Valve 2-FCV-63-157 Logic Test (continued)

[18] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[19] **PLACE** Transfer Switch 2-XS-63-157, SIS PUMP OUT RCS LP 2&4 H L, to AUX. _____

[20] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[21] **VERIFY** the following indications:

A. 2-HS-63-157A, SI PMP B TO HL 2 & 4, red light OFF. _____

B. 2-HS-63-157A, SI PMP B TO HL 2 & 4, green light OFF. _____

[22] **PLACE** Hand Switch 2-HS-63-157A, SI PMP B TO HL 2 & 4, to OPEN, **AND**

RELEASE. _____

[23] **VERIFY** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, did NOT open (**Acc. Crit** 5.0P). _____

NOTE

Stop watch timing of valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, stroke time will be done from control switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, and locally at the valve.

[24] **PLACE** Hand Switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, stroke. _____

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

6.10 Valve 2-FCV-63-157 Logic Test (continued)

[25] **RECORD** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[26] **RECORD** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, OPEN stroke time.

Local

_____ seconds (less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____

[27] **VERIFY** the following indications:

A. 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, red light ON. _____

B. 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, green light OFF. _____

C. Valve is OPEN (Local). _____

[28] **PLACE** Hand Switch 2-HS-63-157A, SI PMP B TO HL 2 & 4, to CLOSE, **AND**

RELEASE. _____

[29] **VERIFY** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, did NOT close (**Acc. Crit** 5.0P). _____

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

6.10 Valve 2-FCV-63-157 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, stroke time will be done from control switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, and locally at the valve.

[30] **PLACE** Hand Switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, stroke. _____

[31] **RECORD** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[32] **RECORD** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, CLOSE stroke time.

Local

_____ seconds (less than or equal to 17 sec)

M&TE _____ Cal Due Date _____

_____

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

6.10 Valve 2-FCV-63-157 Logic Test (continued)

[33] **VERIFY** the following indications:

A. 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, red light OFF. _____

B. 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, green light ON. _____

C. Valve is CLOSED (Local). _____

[34] **OPEN** breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B. _____

[35] **VERIFY** ICS point FD2236 displays "PWR OFF". _____

[36] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[37] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[38] **CLOSE** breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B. _____

[39] **PLACE** Hand Switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, to OPEN, **AND**

RETURN to NORMAL. _____

[40] **VERIFY** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, did NOT open (**Acc Crit** 5.0A). _____

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

6.10 Valve 2-FCV-63-157 Logic Test (continued)

[41] **DEPRESS AND**

HOLD the armature of relay K7 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[42] **PLACE** Hand Switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, to OPEN, **AND**

RETURN to NORMAL. _____

[43] **VERIFY** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, OPENS (**Acc Crit** 5.0A). _____

[44] **RELEASE** K7 relay armature. _____

[45] **OPEN** breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B. _____

[46] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[47] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[48] **CLOSE** breaker 2-BKR-63-157-B at compartment 13B on 480V RX MOV BD 2B1-B. _____

[49] **CLOSE** valve 2-FCV-63-157, SIS TO HOT LEG LOOPS 2 & 4, by placing Hand Switch 2-HS-63-157C, SIS PUMP OUT RCS LP 2&4 H L, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.10 Valve 2-FCV-63-157 Logic Test (continued)

[50] **PLACE** Transfer Switch 2-XS-63-157, SIS PUMP OUT RCS LP 2&4 H L, to NORMAL. _____

[51] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

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

6.11 Valve 2-FCV-63-172 Logic Test

CAUTION

Opening valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.11 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-172, [A11W/713] RHR TO HOT LEG LOOPS 1 & 3. _____

[4] **ENSURE** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2234 _____

B. FD2235 _____

[6] **VERIFY** ICS point FD2235 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2234 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-172, RHR TO RCS HL 1&3 FLOW ISOL VLV, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, is in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.11 Valve 2-FCV-63-172 Logic Test (continued)

[11] **VERIFY** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, did NOT open. _____

[12] **PLACE** Hand Switch 2-HS-63-172A, RHR TO HL 1 & 3, to OPEN, and while valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, is opening,

PLACE Hand Switch 2-HS-63-172A, RHR TO HL 1 & 3, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-172A, RHR TO HL 1 & 3, red light ON. _____

B. 2-HS-63-172A, RHR TO HL 1 & 3, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2235 displays "NOT CLS". _____

[15] **PLACE** Hand Switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-172A, RHR TO HL 1 & 3, to CLOSE, and while valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, is closing,

PLACE Hand Switch 2-HS-63-172A, RHR TO HL 1 & 3, to OPEN, **AND**

RELEASE. _____

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

6.11 Valve 2-FCV-63-172 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-172A, RHR TO HL 1 & 3, red light OFF. _____

B. 2-HS-63-172A, RHR TO HL 1 & 3, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-172, RHR TO RCS HL 1&3 FLOW ISOL VLV, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-172A, RHR TO HL 1 & 3, red light OFF. _____

B. 2-HS-63-172A, RHR TO HL 1 & 3, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-172A, RHR TO HL 1 & 3, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, did NOT open. _____

NOTE

Stop watch timing of valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, stroke time will be done from control switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, stroke. _____

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

6.11 Valve 2-FCV-63-172 Logic Test (continued)

[26] **RECORD** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[27] **RECORD** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, OPEN stroke time.

Local

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, red light ON. _____

B. 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-172A, RHR TO HL 1 & 3, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, did NOT close. _____

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

6.11 Valve 2-FCV-63-172 Logic Test (continued)

NOTE

Stop watch timing of valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, stroke time will be done from control switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, stroke. _____

[32] **RECORD** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[33] **RECORD** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, CLOSE stroke time.

Local

_____ seconds (less than or equal to 120 sec)

M&TE _____ Cal Due Date _____

_____

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

6.11 Valve 2-FCV-63-172 Logic Test (continued)

[34] **VERIFY** the following indications:

A. 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, red light OFF. _____

B. 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2234 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B. _____

[40] **PLACE** Hand Switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, did NOT open (**Acc Crit** 5.0A). _____

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

6.11 Valve 2-FCV-63-172 Logic Test (continued)

[42] **DEPRESS AND**

HOLD the armature of relay K5 in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** K5 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 2-BKR-63-172-B at compartment 9B on 480V RX MOV BD 2B1-B. _____

[50] **CLOSE** valve 2-FCV-63-172, RHR TO HOT LEG LOOPS 1 & 3, by placing Hand Switch 2-HS-63-172C, RHR TO RCS HL 1&3 FLOW ISOL VLV, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.11 Valve 2-FCV-63-172 Logic Test (continued)

[51] **PLACE** Transfer Switch 2-XS-63-172, RHR TO RCS HL 1&3 FLOW ISOL VLV, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

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

6.12 Valve 2-FCV-63-73 Logic Test

CAUTION

Opening valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.12 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

CAUTION

2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, is located in the valve vault and requires a confined space entry permit and a safety observer.

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, CLOSED _____

B. 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, CLOSED _____

C. 2-FCV-74-21, [A10U/676] RHR B-B SUCTION ISOLATION, CLOSED _____

D. 2-FCV-72-41, [A11V/713] RHR SPRAY HDR B ISOLATION V, CLOSED _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2112 _____

B. FD2246 _____

[6] **VERIFY** ICS point FD2112 displays "CLOSED". _____

[7] **VERIFY** ICS point FD2246 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-73, CNTMT SUMP TO RHR PUMP B-B, is in NORMAL. _____

[9] **ENSURE** AUX CONTROL SWITCH 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, are in NORMAL. _____

[10] **PLACE** Hand Switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, CNTMT SUMP TO RHR PUMP B-B, to OPEN **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT open. _____

[12] **PLACE** Hand Switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to OPEN and while valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, is opening,

PLACE Hand Switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, red light ON. _____

B. 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, green light OFF. _____

C. Valve is OPEN (Local) (**Acc Crit** 5.0l) _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[14] **VERIFY** ICS point FD2112 displays "NOT CLS". _____

[15] **PLACE** Hand Switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to CLOSE, and while valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, is closing,

PLACE Hand Switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, red light OFF. _____

B. 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-73, CNTMT SUMP TO RHR PUMP B-B, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[22] **VERIFY** the following indications:

A. 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, red light OFF. _____

B. 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT open. _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, to OPEN, **AND**

RETURN to NORMAL and simultaneously time the valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, stroke. _____

[26] **RECORD** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[27] **RECORD** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, OPEN stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[28] **VERIFY** the following indications:

A. 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, red light ON. _____

B. 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT close. _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-72C, CNTMT SUMP TO RHR PUMP B-B, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, stroke. _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[32] **RECORD** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[33] **RECORD** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, CLOSE stroke time.

Local

_____ seconds (less than or equal to 60 sec)

M&TE _____ Cal Due Date _____

_____

[34] **VERIFY** the following indications:

A. 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, red light OFF. _____

B. 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2246 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B.

_____ 1st

_____ CV

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B. _____

[40] **PLACE** Hand Switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, to OPEN, **AND**

RETURN to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT open (**Acc Crit** 5.0A). _____

[42] **DEPRESS, AND**

HOLD the armature of the K4 relay in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, to OPEN, **AND**

RETURN to NORMAL. _____

[44] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** the K4 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B. _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) to the common terminal on the overload relay of breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[49] **CLOSE** breaker 2-BKR-63-73-B at compartment 12D on 480V RX MOV BD 2B1-B. _____

[50] **PLACE** Hand Switch 2-HS-63-73C to CLOSE, **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-73, CNTMT SUMP TO RHR PUMP B-B, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[53] **LOCATE** and **VERIFY** terminals TB631-9 and TB631-10 in Panel 2-R-51. _____ 1st _____ CV

[54] **INSTALL** a jumper across terminals TB631-9 and TB631-10 on the field side of the plastic isolators in Panel 2-R-51 (Simulate SI RESET), **AND**

DOCUMENT on Appendix E. _____

[55] **VERIFY** the SI RESET light on panel 2-M-6 is ON. _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[56] **LOCATE** and **VERIFY** terminals TB631-9 and TB631-10 in Panel 2-R-51.

_____ 1st

_____ CV

[57] **REMOVE** the jumper across terminals TB631-9 and TB631-10 on the field side of the plastic isolators in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[58] **VERIFY** the SI RESET light on panel 2-M-6 is OFF. _____

NOTE

Valves that are not part of system 63 may be opened or closed locally at the valve or from either handswitch. For step 6.12[59], 2-HS-74-21A, RHR B-B SUCTION ISOLATION, will operate the valve.

[59] **OPEN** valve 2-FCV-74-21, RHR B-B SUCTION ISOLATION. _____

[60] **PLACE** Transfer Switch 2-XS-74-21, RHR B-B SUCTION ISOLATION, to AUX. _____

[61] **PLACE** control switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to OPEN, **AND**

RELEASE. _____

[62] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT open. _____

[63] **LOCATE** and **VERIFY** terminals 12D02 and 12D03 on Panel 2-JB-292-2505-B [A11V/676].

_____ 1st

_____ CV

[64] **INSTALL** a jumper across terminals 12D02 and 12D03 on Panel 2-JB-292-2505-B (2-FCV-74-21 limit switch), **AND**

DOCUMENT on Appendix E. _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[65] **PLACE** control switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to OPEN, **AND**

RELEASE. _____

[66] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT open. _____

[67] **LOCATE** and **VERIFY** terminals 12D02 and 12D03 on Panel 2-JB-292-2505-B.

_____ 1st

_____ CV

[68] **REMOVE** the jumper across terminals 12D02 and 12D03 on Panel 2-JB-292-2505-B, (2-FCV-74-21 limit switch), **AND**

DOCUMENT on Appendix E. _____

[69] **LOCATE** and **VERIFY** terminals 12D03 and 12D06 on Panel 2-JB-292-2505-B.

_____ 1st

_____ CV

[70] **INSTALL** a jumper across terminals 12D03 and 12D06 on Panel 2-JB-292-2505-B (2-FCV-74-21 limit switch), **AND**

DOCUMENT on Appendix E. _____

[71] **PLACE** control switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to OPEN, **AND**

RELEASE. _____

[72] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, did NOT open. _____

[73] **LOCATE** and **VERIFY** terminals 12D03 and 12D06 on Panel 2-JB-292-2505-B.

_____ 1st

_____ CV

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[74] **REMOVE** the jumper across terminals 12D03 and 12D06 on Panel 2-JB-292-2505-B, (2-FCV-74-21 limit switch). _____

[75] **PLACE** Transfer Switch 2-XS-63-73, CNTMT SUMP TO RHR PUMP B-B, to AUX. _____

[76] **PLACE** Hand Switch 2-HS-63-73C, CNTMT SUMP TO RHR PUMP B-B, to OPEN **AND**

RETURN to NORMAL. _____

[77] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B-B, did NOT open. _____

[78] **PLACE** Transfer Switch 2-XS-63-73, CNTMT SUMP TO RHR PUMP B-B, to NORMAL. _____

[79] **LOCATE** and **VERIFY** terminals TB631-11 and TB631-12 in Panel 2-R-51. _____ 1st _____ CV

[80] **INSTALL** a jumper across terminals TB631-11 and TB631-12 on the field side of the plastic isolators in Panel 2-R-51 (Safety Injection Latch), **AND**

DOCUMENT on Appendix E. _____

[81] **PLACE** control switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to OPEN, **AND**

RELEASE. _____

[82] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B-B, opens (**Acc Crit** 5.0l). _____

[83] **PLACE** control switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to CLOSE, **AND**

RELEASE. _____

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

6.12 Valve 2-FCV-63-73 Logic Test (continued)

[84] **LOCATE** and **VERIFY** terminals TB631-1 and TB631-2 in Panel 2-R-51. _____ 1st _____ CV

> **NOTE**
>
> When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[85] **MOMENTARILY PLACE** a jumper across terminals TB631-1 and TB631-2 on the field side of the plastic insulators in Panel 2-R-51 (Auto Switchover). _____

[86] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, opens (**Acc Crit** 5.0J). _____

[87] **LOCATE** and **VERIFY** terminals TB631-11 and TB631-12 in Panel 2-R-51. _____ 1st _____ CV

[88] **REMOVE** the jumper across terminals TB631-11 and TB631-12 on the field side of the plastic isolators in Panel 2-R-51, **AND**

DOCUMENT on Appendix E. _____

[89] **VERIFY** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B, remains OPEN (**Acc Crit** 5.0J). _____

[90] **CLOSE** valve 2-FCV-74-21, RHR B-B SUCTION ISOLATION. _____

[91] **PLACE** control switch 2-HS-63-73A, CNTMT SUMP TO RHR PMP B SUCT, to CLOSE, **AND**

RELEASE. _____

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

6.13 Valve 2-FCV-63-11 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.13 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP. _____

[4] **ENSURE** the following valve positions:

A. 2-FCV-63-3, SIS PUMPS RECIRC TO RWST, CLOSED _____

B. 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF, CLOSED _____

C. 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV, CLOSED _____

D. 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, CLOSED _____

E. 2-FCV-74-21, RHR B-B SUCTION ISOLATION, CLOSED _____

[5] **OPEN** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B. _____

[6] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2227 _____

B. FD2228 _____

[7] **VERIFY** ICS point FD2228 displays "CLOSED". _____

[8] **VERIFY** ICS point FD2227 displays "PWR ON". _____

[9] **ENSURE** Transfer Switch 2-XS-63-11, RHR HTX B TO SIS PUMP is in NORMAL. _____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[10] **PLACE** Hand Switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, to OPEN, **AND**

RETURN to NORMAL. _____

[11] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT open. _____

[12] **PLACE** Hand Switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, and while the valve is opening,

PLACE Hand Switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[13] **VERIFY** the following indications:

A. 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, red light ON. _____

B. 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, green light OFF. _____

C. Valve is OPEN (Local). _____

[14] **VERIFY** ICS point FD2228 displays "NOT CLS". _____

[15] **PLACE** Hand Switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT close. _____

[17] **PLACE** Hand Switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to CLOSE, and while the valve is closing,

PLACE Hand Switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[18] **VERIFY** the following indications:

A. 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

[20] **PLACE** Transfer Switch 2-XS-63-11, RHR HTX B TO SIS PUMP, to AUX. _____

[21] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[22] **VERIFY** the following indications:

A. 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, red light OFF. _____

B. 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, green light OFF. _____

[23] **PLACE** Hand Switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[24] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT open. _____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, and locally at the valve.

[25] **PLACE** Hand Switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, stroke. _____

[26] **RECORD** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, OPEN stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[27] **RECORD** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, OPEN stroke time.

Local

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[28] **VERIFY** the following indications:

A. 2-HS-63-11C, RHR HTX B TO SIS PUMP, red light ON. _____

B. 2-HS-63-11C, RHR HTX B TO SIS PUMP, green light OFF. _____

C. Valve is OPEN (Local). _____

[29] **PLACE** Hand Switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[30] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT close. _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, and locally at the valve.

[31] **PLACE** Hand Switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, stroke. _____

[32] **RECORD** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[33] **RECORD** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 28 sec)

M&TE _____ Cal Due Date _____

_____

[34] **VERIFY** the following indications:

A. 2-HS-63-11C, RHR HTX B TO SIS PUMP, red light OFF. _____

B. 2-HS-63-11C, RHR HTX B TO SIS PUMP, green light ON. _____

C. Valve is CLOSED (Local). _____

[35] **OPEN** breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B. _____

[36] **VERIFY** ICS point FD2227 displays "PWR OFF". _____

[37] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[38] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[39] **CLOSE** breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B. _____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[40] **PLACE** Hand Switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, to OPEN, **AND**

RELEASE to NORMAL. _____

[41] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT open (**Acc Crit** 5.0A). _____

[42] **DEPRESS, AND**

HOLD the armature of the K3 relay in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[43] **PLACE** Hand Switch 2-HS-63-11C, RHR HTX B TO SIS PUMP, to OPEN, **AND**

RELEASE to NORMAL. _____

[44] **VERIFY** that valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, OPENS (**Acc Crit** 5.0A). _____

[45] **RELEASE** the K3 relay armature. _____

[46] **OPEN** breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B. _____

[47] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B.

_____ 1st

_____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[48] **RECONNECT** the wire (wire 2) to the common terminal on the overload relay of breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[49] **CLOSE** breaker 2-BKR-63-11-B at compartment 11B on 480V RX MOV BD 2B1-B. _____

[50] **CLOSE** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, by placing Hand Switch 2-HS-63-11C to CLOSE **AND**

RETURN to NORMAL. _____

[51] **PLACE** Transfer Switch 2-XS-63-11, RHR HTX B TO SIS PUMP, to NORMAL. _____

[52] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[53] **OPEN** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV. _____

[54] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[55] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, opens. _____

[56] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[57] **OPEN** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST. _____

[58] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[59] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT open. _____

[60] **CLOSE** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV. _____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[61] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[62] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, opens (**Acc Crit** 5.0H). _____

[63] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[64] **OPEN** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF. _____

[65] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[66] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT open. _____

[67] **OPEN** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV. _____

[68] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[69] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT open. _____

[70] **CLOSE** valve 2-FCV-63-3, SIS PUMPS RECIRC TO RWST. _____

[71] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[72] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, opens (**Acc Crit** 5.0H). _____

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

6.13 Valve 2-FCV-63-11 Logic Test (continued)

[73] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[74] **CLOSE** valve 2-FCV-63-175, SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV. _____

[75] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[76] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, opens. _____

[77] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to CLOSE, **AND**

RELEASE. _____

[78] **CLOSE** valve 2-FCV-63-4, SIS PUMP A-A DISCHARGE TO RWST SHUTOFF. _____

[79] **CLOSE** valve 2-FCV-63-73, CONTAINMENT SUMP TO RHR PUMP B. _____

[80] **PLACE** control switch 2-HS-63-11A, RHR PMP B TO SI PMPS SUCT, to OPEN, **AND**

RELEASE. _____

[81] **VERIFY** valve 2-FCV-63-11, RHR HEAT EXCHANGER B TO SIS PUMP, did NOT open. _____

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

6.14 Valve 2-FCV-63-5 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.14 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V Reactor MOV Board 2B1-B, and at valve 2-FCV-63-5, [A11U/692] RWST TO SIS PUMP. _____

[4] **ENSURE** valve 2-FCV-63-5, RWST TO SIS PUMP, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2221 _____

B. FD2222 _____

[6] **VERIFY** ICS point FD2222 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2221 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-5, RWST TO SIS PMP FLOW CONTROL VLV TRF is in NORMAL. _____

[9] **PLACE** Hand Switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, to OPEN, **AND**

RETURN to NORMAL. _____

[10] **VERIFY** valve 2-FCV-63-5, RWST TO SIS PUMP, did NOT open (**Acc. Crit**. 5.0P). _____

[11] **PLACE** Hand Switch 2-HS-63-5A, RWST TO SI PMPS SUCTION, to OPEN, and while the valve is opening,

PLACE Hand Switch 2-HS-63-5A, RWST TO SI PMPS SUCTION, to CLOSE, **AND**

RELEASE. _____

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

6.14 Valve 2-FCV-63-5 Logic Test (continued)

[12] **VERIFY** the following indications:

A. 2-HS-63-5A, RWST TO SI PMPS SUCTION, red light ON. _____

B. 2-HS-63-5A, RWST TO SI PMPS SUCTION, green light OFF. _____

C. Valve is OPEN (Local). _____

[13] **VERIFY** 2–XA–55–6D–133D, RWST TO SIP FCV-63-5 NOT OPEN ABOVE P-11, is CLEAR. _____

[14] **VERIFY** ICS point FD2222 displays "OPEN". _____

[15] **PLACE** Hand Switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, to CLOSE, **AND**

RETURN to NORMAL. _____

[16] **VERIFY** valve 2-FCV-63-5, RWST TO SIS PUMP, did NOT close (**Acc. Crit.** 5.0P). _____

[17] **PLACE** Hand Switch 2-HS-63-5A, RWST TO SI PMPS SUCTION, to CLOSE, and while the valve is closing,

PLACE Hand Switch 2-HS-63-5A, RWST TO SI PMPS SUCTION, to OPEN, **AND**

RELEASE. _____

[18] **VERIFY** the following indications:

A. 2-HS-63-5A, RWST TO SI PMPS SUCTION, red light OFF. _____

B. 2-HS-63-5A, RWST TO SI PMPS SUCTION, green light ON. _____

C. Valve is CLOSED (Local). _____

[19] **VERIFY** 2–XA–55–6D–133D, RWST TO SIP FCV-63-5 NOT OPEN ABOVE P-11, ALARMS. (**Acc Crit** 5.0N). _____

[20] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

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

6.14 Valve 2-FCV-63-5 Logic Test (continued)

[21] **PLACE** Transfer Switch 2-XS-63-5, RWST TO SIS PMP FLOW CONTROL VLV TRF, to AUX. _____

[22] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[23] **VERIFY** the following indications:

A. 2-HS-63-5A, RWST TO SI PMPS SUCTION, red light OFF. _____

B. 2-HS-63-5A, RWST TO SI PMPS SUCTION, green light OFF. _____

[24] **PLACE** Hand Switch 2-HS-63-5A, RWST TO SI PMPS SUCTION, to OPEN, **AND**

RELEASE. _____

[25] **VERIFY** valve 2-FCV-63-5, RWST TO SIS PUMP, did NOT open (**Acc. Crit.** 5.0P). _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, and locally at the valve.

[26] **PLACE** Hand Switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, to OPEN, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-5, RWST TO SIS PUMP, stroke. _____

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

6.14 Valve 2-FCV-63-5 Logic Test (continued)

[27] **RECORD** valve 2-FCV-63-5, RWST TO SIS PUMP, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 14 sec)

M&TE _____ Cal Due Date _____

_____ 1st

_____ CV

[28] **RECORD** valve 2-FCV-63-5, RWST TO SIS PUMP, OPEN stroke time.

Local

_____ seconds (less than or equal to 14 sec)

M&TE _____ Cal Due Date _____

_____

[29] **VERIFY** the following indications:

A. 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, red light ON. _____

B. 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, green light OFF. _____

C. Valve is OPEN (Local). _____

[30] **VERIFY** 2–XA–55–6D–133D, RWST TO SIP FCV-63-5 NOT OPEN ABOVE P-11, is CLEAR. _____

[31] **PLACE** Hand Switch 2-HS-63-5A, RWST TO SI PMPS SUCTION, to CLOSE, **AND**

RELEASE. _____

[32] **VERIFY** valve 2-FCV-63-5, RWST TO SIS PUMP, did NOT close (**Acc. Crit.** 5.0P). _____

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

6.14 Valve 2-FCV-63-5 Logic Test (continued)

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, and locally at the valve.

[33] **PLACE** Hand Switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time valve 2-FCV-63-5, RWST TO SIS PUMP, stroke. _____

[34] **RECORD** valve 2-FCV-63-5, RWST TO SIS PUMP, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 14 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[35] **RECORD** valve 2-FCV-63-5, RWST TO SIS PUMP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 14 sec)

M&TE _____ Cal Due Date _____

_____

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

6.14 Valve 2-FCV-63-5 Logic Test (continued)

[36] **VERIFY** the following indications:

A. 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, red light OFF. _____

B. 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, green light ON. _____

C. Valve is CLOSED (Local). _____

[37] **OPEN** breaker 2-BKR-63-5-B at compartment 10B at 480VRX MOV BD 2B1-B. _____

[38] **VERIFY** ICS point FD2221 displays "PWR OFF". _____

[39] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-5-B at compartment 10B at 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[40] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-5-B at compartment 10B at 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[41] **CLOSE** breaker 2-BKR-63-5-B at compartment 10B at 480V RX MOV BD 2B1-B. _____

[42] **PLACE** Hand Switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, to OPEN, **AND**

RETURN to NORMAL. _____

[43] **VERIFY** valve 2-FCV-63-5, RWST TO SIS PUMP, did NOT open (**Acc Crit** 5.0A). _____

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

6.14 Valve 2-FCV-63-5 Logic Test (continued)

[44] **DEPRESS AND**

HOLD the armature of the K7 relay in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate Overload Bypass. _____

[45] **PLACE** Hand Switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, to OPEN, **AND**

RETURN to NORMAL. _____

[46] **VERIFY** valve 2-FCV-63-5, RWST TO SIS PUMP, opens (**ACC CRIT** 5.0A). _____

[47] **RELEASE** the K7 relay armature. _____

[48] **OPEN** the breaker 2-BKR-63-5-B at compartment 10B at 480V RX MOV BD 2B1-B. _____

[49] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-5-B at compartment 10B at 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[50] **RECONNECT** the wire (wire 2) to the common terminal on the overload relay of breaker 2-BKR-63-5-B at compartment 10B at 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[51] **CLOSE** the breaker 2-BKR-63-5-B at compartment 10B at 480V RX MOV BD 2B1-B. _____

[52] **CLOSE** valve 2-FCV-63-5, RWST TO SIS PUMP, by placing Hand Switch 2-HS-63-5C, RWST TO SIS PMP FLOW CNTL VLV SW, to CLOSE, **AND**

RETURN to NORMAL. _____

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

6.14 Valve 2-FCV-63-5 Logic Test (continued)

[53] **PLACE** Transfer Switch 2-XS-63-5, RWST TO SIS PMP FLOW CONTROL VLV TRF, to NORMAL. _____

[54] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

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

6.15 Valve 2-FCV-63-22 Logic Test

CAUTION

Opening valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, may provide a direct flow path from the RWST to the Reactor Vessel.

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.15 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, 480V REACTOR MOV BOARD 2B1-B, and at valve 2-FCV-63-22, [A11W/713] SIS PUMP COLD LEG INJECTION. _____

[4] **ENSURE** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, is CLOSED. _____

[5] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. FD2229 _____

B. FD2230 _____

[6] **VERIFY** ICS point FD2230 displays "NOT OPE". _____

[7] **VERIFY** ICS point FD2229 displays "PWR ON". _____

[8] **ENSURE** Transfer Switch 2-XS-63-22, SIS PUMP COLD LEG INJ is in NORMAL. _____

[9] **PLACE** Hand Switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, to OPEN **AND**

RETURN to NORMAL. _____

[10] **VERIFY** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, did NOT open (**Acc Crit**. 5.0P). _____

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

6.15 Valve 2-FCV-63-22 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, to OPEN, and while the valve is opening,

PLACE Hand Switch 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, to CLOSE, **AND**

RELEASE. _____

[12] **VERIFY** the following indications:

A. 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, red light ON. _____

B. 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, green light OFF. _____

C. Valve is OPEN (Local). _____

[13] **VERIFY** ICS point FD2230 displays "OPEN". _____

[14] **PLACE** Hand Switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, to CLOSE, **AND**

RETURN to NORMAL. _____

[15] **VERIFY** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, did NOT close (**Acc Crit.** 5.0P). _____

[16] **PLACE** Hand Switch 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, to CLOSE, and while the valve is closing,

PLACE Hand Switch 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, to OPEN, **AND**

RELEASE. _____

[17] **VERIFY** the following indications:

A. 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, red light OFF. _____

B. 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, green light ON. _____

C. Valve is CLOSED (Local). _____

[18] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, is CLEAR. _____

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

6.15 Valve 2-FCV-63-22 Logic Test (continued)

[19] **PLACE** Transfer Switch 2-XS-63-22, SIS PUMP COLD LEG INJ, to AUX. _____

[20] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, ALARMS (**Acc Crit** 5.0C). _____

[21] **VERIFY** the following indications:

A. 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, red light OFF. _____

B. 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, green light OFF. _____

[22] **PLACE** Hand Switch 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, to OPEN, **AND**

RELEASE. _____

[23] **VERIFY** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, did NOT open (**Acc Crit.** 5.0P). _____

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, and locally at the valve.

[24] **PLACE** Hand Switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, to OPEN, **AND**

RETURN to NORMAL and simultaneously time the valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, stroke. _____

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

6.15 Valve 2-FCV-63-22 Logic Test (continued)

[25] **RECORD** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, OPEN stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[26] **RECORD** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, OPEN stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[27] **VERIFY** the following indications:

A. 2-HS-63-22C, SIS PUMP COLD LEG INJ, red light ON. _____

B. 2-HS-63-22C, SIS PUMP COLD LEG INJ, green light OFF. _____

C. Valve is OPEN (Local) _____

[28] **PLACE** Hand Switch 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, to CLOSE, **AND**

RELEASE. _____

[29] **VERIFY** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, did NOT close (**Acc Crit.** 5.0P). _____

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

6.15 Valve 2-FCV-63-22 Logic Test (continued)

NOTE

Stop watch timing of valve stroke time will be done from control switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, and locally at the valve.

[30] **PLACE** Hand Switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, to CLOSE, **AND**

RETURN to NORMAL and simultaneously time the valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, stroke. _____

[31] **RECORD** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[32] **RECORD** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, CLOSE stroke time.

Local

_____ seconds (less than equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[33] **VERIFY** the following indications:

A. 2-HS-63-22C, SIS PUMP COLD LEG INJ, red light OFF. _____

B. 2-HS-63-22C, SIS PUMP COLD LEG INJ, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.15 Valve 2-FCV-63-22 Logic Test (continued)

[34] **OPEN** breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B. _____

[35] **VERIFY** ICS point FD2229 displays "PWR OFF". _____

[36] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B. _____

1st

_____

CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[37] **LIFT** the wire (wire 2) off the common terminal on the overload relay from breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[38] **CLOSE** breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B. _____

[39] **PLACE** Hand Switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, to OPEN, **AND**

RETURN to NORMAL. _____

[40] **VERIFY** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, did not open (**Acc. Crit.** 5.0A). _____

[41] **DEPRESS AND**

HOLD the armature of the K3 relay in the back of Panel 16D on 480V RX MOV BD 2B1-B to simulate an overload bypass. _____

[42] **PLACE** Hand Switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, to OPEN, **AND**

RETURN to NORMAL. _____

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

6.15 Valve 2-FCV-63-22 Logic Test (continued)

[43] **VERIFY** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, OPENS (**Acc. Crit**. 5.0A). _____

[44] **RELEASE** the K3 relay armature. _____

[45] **OPEN** the breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B. _____

[46] **LOCATE** and **VERIFY** wire 2 off the common terminal on the overload relay from breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B. _____ 1st _____ CV

WARNING

Arc Flash PPE per TI-300 will be required for the following step.

[47] **RECONNECT** the wire (wire 2) on the common terminal on the overload relay of breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B, **AND**

DOCUMENT on Appendix E. _____

[48] **CLOSE** the breaker 2-BKR-63-22B-B at compartment 11D on 480V RX MOV BD 2B1-B. _____

[49] **CLOSE** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, by placing Hand Switch 2-HS-63-22C, SIS PUMP COLD LEG INJ, to CLOSE, **AND**

RETURN to NORMAL. _____

[50] **PLACE** Transfer Switch 2-XS-63-22, SIS PUMP COLD LEG INJ, to NORMAL. _____

[51] **VERIFY** 2–XA–55–6F–150C, 480 RX MOV BD 2B1-B/2B2-B XS IN AUX, CLEARS. _____

[52] **OPEN** the breaker in Compt 2F2 (2-BKR-63-22-A/B) at 480V RX MOV BD 2B1-B. _____

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

6.15 Valve 2-FCV-63-22 Logic Test (continued)

[53] **PLACE** Hand Switch 2-HS-63-22A, SI PMPS TO CL 1-2-3-4, to OPEN, **AND**

RELEASE. _____

[54] **VERIFY** valve 2-FCV-63-22, SIS PUMP COLD LEG INJECTION, did not open. _____

[55] **CLOSE** the breaker in Compt 2F2 (2-BKR-63-22-A/B) at 480V RX MOV BD 2B1-B. _____

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

6.16 Valve 2-FCV-63-64 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.16 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 Auxiliary Control Room, and at valve 2-FCV-63-64, [A11W/713] SIS ACCUM TANK NITROGEN HEADER INLET. _____

[4] **ENSURE** that valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-64, SIS ACCUM TANK N2 HDR INLET VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, is in CLOSE. _____

[7] **VERIFY** the following indications:

A. 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, red light OFF. _____

B. 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, green light OFF. _____

[8] **PLACE** Hand Switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, to OPEN. _____

[9] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, did NOT open (**Acc. Crit.** 5.0O). _____

[10] **PLACE** and **HOLD** Hand Switch 2-HS-63-64A, N2 HDR TO CL ACCUMS, to OPEN until 2-HS-63-64A, N2 HDR TO CL ACCUMS, green light is OFF. _____

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

6.16 Valve 2-FCV-63-64 Logic Test (continued)

[11] **VERIFY** the following indications:

A. 2-HS-63-64A, N2 HDR TO CL ACCUMS, red light ON. _____

B. 2-HS-63-64A, N2 HDR TO CL ACCUMS, green light OFF. _____

C. CISP 2-XX-55-6E Window 77, red light ON. _____

D. CISP 2-XX-55-6E Window 77, green light OFF. _____

E. Valve is OPEN (Local). _____

[12] **PLACE** Hand Switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, to CLOSE. _____

[13] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, did NOT close. _____

[14] **PLACE** Hand Switch 2-HS-63-64A, N2 HDR TO CL ACCUMS, to CLOSE. _____

[15] **VERIFY** the following indications:

A. 2-HS-63-64A, N2 HDR TO CL ACCUMS, red light OFF. _____

B. 2-HS-63-64A, N2 HDR TO CL ACCUMS, green light ON. _____

C. CISP 2-XX-55-6E Window 77, red light OFF. _____

D. CISP 2-XX-55-6E Window 77, green light ON. _____

E. Valve is CLOSED (Local). _____

[16] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, is CLEAR. _____

[17] **PLACE** Transfer Switch 2-XS-63-64, SIS ACCUM TANK N2 HDR INLET VLV TRF, to AUX. _____

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

6.16 Valve 2-FCV-63-64 Logic Test (continued)

[18] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, ALARMS. (**Acc Crit.** 5.0E). _____

[19] **VERIFY** the following indications:

A. 2-HS-63-64A, N2 HDR TO CL ACCUMS, red light OFF. _____

B. 2-HS-63-64A, N2 HDR TO CL ACCUMS, green light OFF. _____

C. CISP 2-XX-55-6E Window 77, red light OFF. _____

D. CISP 2-XX-55-6E Window 77, green light OFF. _____

[20] **PLACE, AND**

HOLD Hand Switch 2-HS-63-64A, N2 HDR TO CL ACCUMS, to OPEN. _____

[21] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, did NOT open (**Acc Crit.** 5.0O). _____

[22] **RELEASE** Hand Switch 2-HS-63-64A, N2 HDR TO CL ACCUMS. _____

NOTE

Time the valve stroke from control switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, and locally at the valve.

[23] **PLACE** Hand Switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, to OPEN and simultaneously time the valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, stroke. _____

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

6.16 Valve 2-FCV-63-64 Logic Test (continued)

[24] **RECORD** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, OPEN stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[25] **RECORD** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, OPEN stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[26] **VERIFY** the following indications:

A. 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, red light ON. _____

B. 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[27] **PLACE** Hand Switch 2-HS-63-64A, N2 HDR TO CL ACCUMS, to CLOSE. _____

[28] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, did NOT close. _____

[29] **ENSURE** Hand Switch 2-HS-63-64A, N2 HDR TO CL ACCUMS, to AUTO. _____

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

6.16 Valve 2-FCV-63-64 Logic Test (continued)

NOTE

Time the valve stroke from control switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, and locally at the valve.

[30] **PLACE** Hand Switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, to CLOSE and simultaneously time the valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, stroke. _____

[31] **RECORD** valve 2-FCV-62-64, SIS ACCUM TANK NITROGEN HEADER INLET, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[32] **RECORD** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, CLOSE stroke time.

Local

_____ seconds (less than equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[33] **VERIFY** the following indications:

A. 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, red light OFF. _____

B. 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.16 Valve 2-FCV-63-64 Logic Test (continued)

[34] **PLACE** Hand Switch 2-HS-63-64C, SIS ACCUM TANK N2 HDR INLET VLV, to OPEN. _____

[35] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, OPENS. _____

[36] **CLOSE** the air supply valve, 2-ISV-32-3184, **AND**

OPEN the petcock for valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET. _____

[37] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, CLOSES (**Acc. Crit.** 5.0Q). _____

[38] **CLOSE** the petcock, **AND**

OPEN the air supply valve, 2-ISV-32-3184, to 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET. _____

[39] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, OPENS. _____

[40] **LOCATE** and **VERIFY** fuse 0-FU-236-3/B13 from fuse column for 125V Vital Battery Board III. _____ 1st _____ CV

[41] **REMOVE** fuse 0-FU-236-3/B13 from fuse column for 125V Vital Battery Board III, **AND**

DOCUMENT on Appendix B. _____

[42] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, CLOSES (**Acc Crit** 5.0Q). _____

[43] **LOCATE** and **VERIFY** fuse 0-FU-236-3/B13 from fuse column for 125V Vital Battery Board III. _____ 1st _____ CV

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

6.16 Valve 2-FCV-63-64 Logic Test (continued)

NOTE

The fuse in the following step has a blown fuse indicator which must be oriented towards the annunciator circuit.

[44] **REINSTALL** fuse 0-FU-236-3/B13 from fuse column for 125V Vital Battery Board III, **AND**

DOCUMENT on Appendix B. _____

[45] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, OPENS. _____

[46] **LOCATE** and **VERIFY** terminals TB611-9 and TB611-10 in Panel 2-R-48. _____ 1st _____ CV

[47] **REMOVE** the jumper installed across terminals TB611-9 and TB611-10 in Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[48] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, did NOT CLOSE. _____

[49] **PLACE** Transfer Switch 2-XS-63-64, SIS ACCUM TANK N2 HDR INLET VLV TRF, to NORMAL. _____

[50] **VERIFY** 2–XA–55–6F–148B, ACR PNL 2-L-11A XS IN AUX, CLEARS. _____

[51] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, CLOSES (**Acc Crit** 5.0K). _____

[52] **VERIFY** the following indications:

A. CISP 2-XX-55-6E Window 77, red light OFF. _____

B. CISP 2-XX-55-6E Window 77, green light ON (**Acc Crit** 5.0R). _____

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

6.16 Valve 2-FCV-63-64 Logic Test (continued)

[53] **LOCATE** and **VERIFY** terminals TB611-9 and TB611-10 on the field side of the plastic isolators in Panel 2-R-48. _____ 1st _____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[54] **MOMENTARILY PLACE** a handheld jumper across terminals TB611-9 and TB611-10 on the field side of the plastic isolators in Panel 2-R-48. _____

[55] **VERIFY** valve 2-FCV-63-64, SIS ACCUM TANK NITROGEN HEADER INLET, remains CLOSED (**Acc Crit** 5.0K). _____

[56] **VERIFY** the following indications:

A. CISP 2-XX-55-6E window 77, red light OFF. _____

B. CISP 2-XX-55-6E window 77, green light ON (**Acc Crit** 5.0R). _____

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

6.17 Valve 2-FCV-63-185 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.17 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-185, [IC/734 AZ296] RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL. _____

[4] **ENSURE** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, is CLOSED. _____

[5] **PLACE, AND**

HOLD Hand Switch 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, until green light is OFF. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, red light ON. _____

B. 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, green light OFF. _____

C. CISP 2-XX-55-6E Window 79, red light ON. _____

D. CISP 2-XX-55-6E Window 79, green light OFF. _____

E. Valve is OPEN (Local). _____

[7] **PLACE** Hand Switch 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, to CLOSE. _____

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

6.17 Valve 2-FCV-63-185 Logic Test (continued)

[8] **VERIFY** the following indications:

A. 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, red light OFF. _____

B. 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, green light ON. _____

C. CISP 2-XX-55-6E Window 79, red light OFF. _____

D. CISP 2-XX-55-6E Window 79, green light ON. _____

E. Valve is CLOSED (Local). _____

NOTE

Time the valve stroke from control switch 2 -HS-63-185, RHR SUPPLY TEST LINE VALVE, and locally at the valve.

[9] **PLACE, AND**

HOLD Hand Switch 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, to OPEN and simultaneously time the valve stroke. _____

[10] **RELEASE** Hand Switch 2-HS-63-185, RHR SUPPLY TEST LINE VALVE. _____

[11] **RECORD** the valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

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

6.17 Valve 2-FCV-63-185 Logic Test (continued)

[12] **RECORD** the valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[13] **PLACE** Hand Switch 2-HS-63-185, RHR SUPPLY TEST LINE VALVE, to CLOSE and simultaneously time the valve stroke. _____

[14] **RECORD** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[15] **RECORD** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[16] **OPEN** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL. _____

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

6.17 Valve 2-FCV-63-185 Logic Test (continued)

[17] **CLOSE** the air supply valve, 2-ISV-32-3477, **AND**

OPEN the petcock for valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL. _____

[18] **VERIFY** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, CLOSES (**Acc. Crit.** 5.0Q). _____

[19] **CLOSE** the petcock, **AND**

OPEN the air supply valve, 2-ISV-32-3477, to 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL. _____

[20] **OPEN** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL. _____

[21] **LOCATE** and **VERIFY** fuse 0-FU-236-3/A19 from fuse column for 125V Vital Battery Board III. _____ 1st _____ CV

[22] **REMOVE** fuse 0-FU-236-3/A19 from fuse column for 125V Vital Battery Board III, **AND**

DOCUMENT on Appendix B. _____

[23] **VERIFY** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, CLOSES (**Acc Crit** 5.0Q). _____

NOTE

The fuse in the following step has a blown fuse indicator which must be oriented towards the annunciator circuit.

[24] **LOCATE** and **VERIFY** fuse 0-FU-236-3/A19 from fuse column for 125V Vital Battery Board III. _____ 1st _____ CV

[25] **REINSTALL** fuse 0-FU-236-3/A19 from fuse column for 125V Vital Battery Board III, **AND**

DOCUMENT on Appendix B. _____

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

6.17 Valve 2-FCV-63-185 Logic Test (continued)

[26] **OPEN** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL. _____

[27] **LOCATE** and **VERIFY** terminals TB618-11 and TB618-12 in Panel 2-R-48. _____ 1st _____ CV

[28] **REMOVE** the jumper installed across terminals TB618-11 and TB618-12 in Panel 2-R-48, **AND**

DOCUMENT on Appendix E. _____

[29] **VERIFY** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, CLOSES (**Acc Crit** 5.0K). _____

[30] **VERIFY** the following indications:

A. CISP 2-XX-55-6E Window 79, red light OFF. _____

B. CISP 2-XX-55-6E Window 79, green light ON (**Acc Crit** 5.0R). _____

[31] **LOCATE** and **VERIFY** terminals TB618-11 and TB618-12 on the field side of the plastic isolators in Panel 2-R-48. _____ 1st _____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[32] **MOMENTARILY PLACE** a handheld jumper across terminals TB618-11 and TB618-12 on the field side of the plastic isolators in Panel 2-R-48. _____

[33] **VERIFY** valve 2-FCV-63-185, RHR SUPPLY 2-FCV-74-2 LEAK TEST ISOL, remains CLOSED (**Acc Crit** 5.0K). _____

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

6.17 Valve 2-FCV-63-185 Logic Test (continued)

[34] **VERIFY** the following indications:

A. CISP 2-XX-55-6E Window 79, red light OFF. _____

B. CISP 2-XX-55-6E Window 79, green light ON (**Acc Crit** 5.0R). _____

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

6.18 Valve 2-FCV-63-65 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.18 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 Auxiliary Control Room, and at valve 2-FCV-63-65, [IC/716 AZ288] SIS ACCUM TANK N2 HDR VENT VLV. _____

[4] **ENSURE** Transfer Switch 2-XS-63-65, SIS ACCUM TANK N2 HDR VENT VLV TRF, in NORMAL. _____

[5] **ENSURE** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, is CLOSED. _____

[6] **INCREASE** the demand to 100 PCT on controller 2-HIC-63-65C, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER. _____

[7] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, remains closed. _____

[8] **INCREASE** the demand to approximately 50 PCT on controller 2-HIC-63-65A, CLA N2 VENT HDR CONTROL. _____

[9] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, is in an intermediate position. _____

[10] **INCREASE** the demand to 100 PCT on controller 2-HIC-63-65A, CLA N2 VENT HDR CONTROL. _____

[11] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, opens. _____

[12] **DECREASE** the demand to 0 PCT on controller 2-HIC-63-65C, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER. _____

[13] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, remains open. _____

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

6.18 Valve 2-FCV-63-65 Logic Test (continued)

[14] **DECREASE** the demand to approximately 50 PCT on controller 2-HIC-63-65A, CLA N2 VENT HDR CONTROL. _____

[15] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, is in an intermediate position. _____

[16] **DECREASE** the demand to 0 PCT on controller 2-HIC-63-65A, CLA N2 VENT HDR CONTROL. _____

[17] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, closes. _____

[18] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[19] **PLACE** Transfer Switch 2-XS-63-65, SIS ACCUM TANK N2 HDR VENT VLV TRF, in AUX. _____

[20] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[21] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, remains closed. _____

[22] **INCREASE** the demand to 100 PCT on controller 2-HIC-63-65A, CLA N2 VENT HDR CONTROL. _____

[23] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, remains closed. _____

[24] **INCREASE** the demand to approximately 50 PCT on controller 2-HIC-63-65C, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER. _____

[25] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, is in an intermediate position. _____

[26] **INCREASE** the demand to 100 PCT on controller 2-HIC-63-65C, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER. _____

[27] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, opens. _____

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

6.18 Valve 2-FCV-63-65 Logic Test (continued)

[28] **DECREASE** the demand to 0 PCT on controller 2-HIC-63-65A, CLA N2 VENT HDR CONTROL. _____

[29] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, remains open. _____

[30] **DECREASE** the demand to approximately 50 PCT on controller 2-HIC-63-65C, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER. _____

[31] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, is in an intermediate position. _____

[32] **DECREASE** the demand to 0 PCT on controller 2-HIC-63-65C, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER. _____

[33] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, closes. _____

[34] **PLACE** Transfer Switch 2-XS-63-65, SIS ACCUM TANK N2 HDR VENT VLV TRF, in NORMAL. _____

[35] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[36] **VERIFY** valve 2-FCV-63-65, SIS ACCUM TANK N2 HDR VENT VLV CONTROLLER, remains closed. _____

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

6.19 Valve 2-FCV-63-186 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.19 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-186, [IC/718 AZ297] RHR SUCTION VALVE LEAK TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-186, RHR SUPPLY TEST LINE, red light ON. _____

B. 2-HS-63-186, RHR SUPPLY TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-186, RHR SUPPLY TEST LINE, red light OFF. _____

B. 2-HS-63-186, RHR SUPPLY TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.19 Valve 2-FCV-63-186 Logic Test (continued)

NOTE

Time valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, stroke. _____

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

6.19 Valve 2-FCV-63-186 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-186, RHR SUCTION VALVE LEAK TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.20 Valve 2-FCV-63-187 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.20 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-187, [IC/720 AZ291] SIS CHECK VALVE LEAK TEST ISO. _____

[4] **ENSURE** valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-187, RHR SUPPLY TEST LINE, red light ON. _____

B. 2-HS-63-187, RHR SUPPLY TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-187, RHR SUPPLY TEST LINE, red light OFF. _____

B. 2-HS-63-187, RHR SUPPLY TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.20 Valve 2-FCV-63-187 Logic Test (continued)

NOTE

Time valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, stroke. _____

[10] **RECORD** valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, stroke. _____

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

6.20 Valve 2-FCV-63-187 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-187, SIS CHECK VALVE LEAK TEST ISO, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.21 Valve 2-FCV-63-188 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.21 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-188, [IC/728 AZ291] SIS CHECK VALVE LEAK TEST ISO. _____

[4] **ENSURE** valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-188, RHR SUPPLY TEST LINE, red light ON. _____

B. 2-HS-63-188, RHR SUPPLY TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-188, RHR SUPPLY TEST LINE, red light OFF. _____

B. 2-HS-63-188, RHR SUPPLY TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.21 Valve 2-FCV-63-188 Logic Test (continued)

NOTE

Time valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, stroke. _____

[10] **RECORD** valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, stroke. _____

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

6.21 Valve 2-FCV-63-188 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-188, SIS CHECK VALVE LEAK TEST ISO, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.22 Valve 2-FCV-63-167 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.22 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-167, [IC/735 AZ288] SIS PUMP OUTLET TEST LINE VALVE. _____

[4] **ENSURE** valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-167, SIS PUMP OUT TEST LINE, red light ON. _____

B. 2-HS-63-167, SIS PUMP OUT TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-167, SIS PUMP OUT TEST LINE, red light OFF. _____

B. 2-HS-63-167, SIS PUMP OUT TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.22 Valve 2-FCV-63-167 Logic Test (continued)

NOTE

Time valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, stroke. _____

[10] **RECORD** valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, stroke. _____

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

6.22 Valve 2-FCV-63-167 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-167, SIS PUMP OUTLET TEST LINE VALVE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.23 Valve 2-FCV-63-163 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.23 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-163, [IC/716 AZ40] RCS LOOP 1 HOT LEG TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-163, RCS LP 1 H L FEED TEST LINE, red light ON. _____

B. 2-HS-63-163, RCS LP 1 H L FEED TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-163, RCS LP 1 H L FEED TEST LINE, red light OFF. _____

B. 2-HS-63-163, RCS LP 1 H L FEED TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.23 Valve 2-FCV-63-163 Logic Test (continued)

NOTE
Time valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, stroke. _____

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

6.23 Valve 2-FCV-63-163 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-163, RCS LOOP 1 HOT LEG TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.24 Valve 2-FCV-63-96 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.24 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-96, [IC/723 AZ145] SIS ACC TANK 2 CHECK VALVE TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-96, SIS ACCUM TK 2 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-96, SIS ACCUM TK 2 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-96, SIS ACCUM TK 2 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-96, SIS ACCUM TK 2 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.24 Valve 2-FCV-63-96 Logic Test (continued)

NOTE

Time valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, stroke. _____

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

6.24 Valve 2-FCV-63-96 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-96, SIS ACC TANK 2 CHECK VALVE TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.25 Valve 2-FCV-63-97 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.25 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-97, [IC/723 AZ145] SIS ACC TANK 2 CHECK VALVE TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-97, SIS CL 2 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-97, SIS CL 2 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-97, SIS CL 2 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-97, SIS CL 2 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.25 Valve 2-FCV-63-97 Logic Test (continued)

NOTE

Time valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, stroke. _____

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

6.25 Valve 2-FCV-63-97 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-97, SIS ACC TANK 2 CHECK VALVE TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.26 Valve 2-FCV-63-112 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.26 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-112, [IC/735 AZ291] SIS CHECK VALVE LEAK TEST ISOLATION VALVE. _____

[4] **ENSURE** valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-112, SIS CHK VLV LEAK TEST ISOLATION VLV, red light ON. _____

B. 2-HS-63-112, SIS CHK VLV LEAK TEST ISOLATION VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-112, SIS CHK VLV LEAK TEST ISOLATION VLV, red light OFF. _____

B. 2-HS-63-112, SIS CHK VLV LEAK TEST ISOLATION VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.26 Valve 2-FCV-63-112 Logic Test (continued)

NOTE

Time valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, stroke. _____

[10] **RECORD** valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, stroke. _____

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

6.26 Valve 2-FCV-63-112 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-112, SIS CHECK VALVE LEAK TEST ISOLATION VALVE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.27 Valve 2-FCV-63-166 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.27 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-166, [IC/726 AZ360] RCS LOOP 4 HOT LEG TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-166, RCS LP 4 H L FEED TEST LINE, red light ON. _____

B. 2-HS-63-166, RCS LP 4 H L FEED TEST LINE, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-166, RCS LP 4 H L FEED TEST LINE, red light OFF. _____

B. 2-HS-63-166, RCS LP 4 H L FEED TEST LINE, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.27 Valve 2-FCV-63-166 Logic Test (continued)

NOTE

Time valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, stroke. _____

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

6.27 Valve 2-FCV-63-166 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-166, RCS LOOP 4 HOT LEG TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.28 Valve 2-FCV-63-121 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.28 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-121, [IC/734 AZ286] SIS COLD LEG CHECK VALVE TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-121, SIS FLOW TO C L CHECK VLV TEST, red light ON. _____

B. 2-HS-63-121, SIS FLOW TO C L CHECK VLV TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-121, SIS FLOW TO C L CHECK VLV TEST, red light OFF. _____

B. 2-HS-63-121, SIS FLOW TO C L CHECK VLV TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.28 Valve 2-FCV-63-121 Logic Test (continued)

NOTE

Time valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, stroke. _____

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

6.28 Valve 2-FCV-63-121 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B)..

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-121, SIS COLD LEG CHECK VALVE TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.29 Valve 2-FCV-63-68 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.29 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-68, [IC/728 AZ322] SIS ACC TANK 4 CHECK VALVE TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-68, SIS ACCUM TK 4 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-68, SIS ACCUM TK 4 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-68, SIS ACCUM TK 4 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-68, SIS ACCUM TK 4 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.29 Valve 2-FCV-63-68 Logic Test (continued)

NOTE

Time valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, and simultaneously time valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, stroke. _____

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

6.29 Valve 2-FCV-63-68 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-68, SIS ACC TANK 4 CHECK VALVE TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.30 Valve 2-FCV-63-69 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.30 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6 and at valve 2-FCV-63-69, [IC/730 AZ320] SIS ACC TANK 4 CHECK VALVE TEST LINE. _____

[4] **ENSURE** valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, is CLOSED. _____

[5] **DEPRESS** the front lens for valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[6] **VERIFY** the following indications:

A. 2-HS-63-69, SIS CL 4 CHECK VLV LEAK TEST, red light ON. _____

B. 2-HS-63-69, SIS CL 4 CHECK VLV LEAK TEST, green light OFF. _____

C. Valve is OPEN (Local). _____

[7] **DEPRESS** the front lens for valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST. _____

[8] **VERIFY** the following indications:

A. 2-HS-63-69, SIS CL 4 CHECK VLV LEAK TEST, red light OFF. _____

B. 2-HS-63-69, SIS CL 4 CHECK VLV LEAK TEST, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.30 Valve 2-FCV-63-69 Logic Test (continued)

NOTE

Time valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, stroke from the control switch and locally at the valve.

[9] **DEPRESS** the front lens for valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, AND simultaneously time valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, stroke. _____

[10] **RECORD** valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[11] **RECORD** valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[12] **DEPRESS** the front lens for valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, on switch module 2-XS-63-100, CKV LEAK TEST, AND simultaneously time valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, stroke. _____

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

6.30 Valve 2-FCV-63-69 Logic Test (continued)

[13] **RECORD** valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[14] **RECORD** valve 2-FCV-63-69, SIS ACC TANK 4 CHECK VALVE TEST LINE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

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

6.31 Valve 2-FCV-63-63 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.31 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-63, [IC/737 AZ304] SIS ACC TANK 4 N2 MAKEUP. _____

[4] **ENSURE** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-63, SIS ACCUM TANK 4 N2 MAKEUP VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, did NOT open (**Acc Crit.** 5.0O). _____

[9] **PLACE** Hand Switch 2-HS-63-63A, N2 TO CL ACCUM 4, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-63A, N2 TO CL ACCUM 4, red light ON. _____

B. 2-HS-63-63A, N2 TO CL ACCUM 4, green light OFF. _____

C. 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, red light OFF. _____

D. 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.31 Valve 2-FCV-63-63 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-63A, N2 TO CL ACCUM 4, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-63A, N2 TO CL ACCUM 4, red light OFF. _____

B. 2-HS-63-63A, N2 TO CL ACCUM 4, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-63, SIS ACCUM TANK 4 N2 MAKEUP VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-63A, N2 TO CL ACCUM 4, red light OFF. _____

B. 2-HS-63-63A, N2 TO CL ACCUM 4, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-63A, N2 TO CL ACCUM 4, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, did NOT open (**Acc. Crit**. 5.0O). _____

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

6.31 Valve 2-FCV-63-63 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, stroke from control switch 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, to OPEN and simultaneously time valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, stroke. _____

[22] **RECORD** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, OPEN stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, OPEN stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, red light ON. _____

B. 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-63A, N2 TO CL ACCUM 4, to CLOSE. _____

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

6.31 Valve 2-FCV-63-63 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, did NOT close. _____

NOTE

Time the valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, stroke from control switch 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, and locally at the valve.

[27] **PLACE** Hand Switch 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, to CLOSE and simultaneously time valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, stroke. _____

[28] **RECORD** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, CLOSE stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[29] **RECORD** valve 2-FCV-63-63, SIS ACC TANK 4 N2 MAKEUP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, red light OFF. _____

B. 2-HS-63-63C, SIS ACCUM TANK 4 N2 MAKEUP VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.31 Valve 2-FCV-63-63 Logic Test (continued)

[31] **PLACE** Transfer Switch 2-XS-63-63, SIS ACCUM TANK 4 N2 MAKEUP VLV TRF, to NORMAL. _____

[32] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, CLEARS. _____

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

6.32 Valve 2-FCV-63-107 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.32 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-107, [IC/725 AZ130] SIS ACC TANK 2 N2 MAKEUP. _____

[4] **ENSURE** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-107, SIS ACCUM TK 2 N2 MAKEUP VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, did NOT open (**Acc Crit**. 5.0O). _____

[9] **PLACE** Hand Switch 2-HS-63-107A, N2 TO CL ACCUM 2, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-107A, N2 TO CL ACCUM 2, red light ON. _____

B. 2-HS-63-107A, N2 TO CL ACCUM 2, green light OFF. _____

C. 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, red light OFF. _____

D. 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.32 Valve 2-FCV-63-107 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-107A, N2 TO CL ACCUM 2, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-107A, N2 TO CL ACCUM 2, red light OFF. _____

B. 2-HS-63-107A, N2 TO CL ACCUM 2, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-107, SIS ACCUM TK 2 N2 MAKEUP VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-107A, N2 TO CL ACCUM 2, red light OFF. _____

B. 2-HS-63-107A, N2 TO CL ACCUM 2, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-107A, N2 TO CL ACCUM 2, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, did NOT open (**Acc. Crit**. 5.0O). _____

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

6.32 Valve 2-FCV-63-107 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, stroke from control switch 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, to OPEN, and simultaneously time valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, stroke. _____

[22] **RECORD** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, OPEN stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, OPEN stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, red light ON. _____

B. 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-107A, N2 TO CL ACCUM 2, to CLOSE. _____

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

6.32 Valve 2-FCV-63-107 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, did NOT close. _____

NOTE

Time the valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, stroke from control switch 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, and locally at the valve.

[27] **PLACE** Hand Switch 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, to CLOSE, and simultaneously time valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, stroke. _____

[28] **RECORD** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, CLOSE stroke time.

Hand Switch

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[29] **RECORD** valve 2-FCV-63-107, SIS ACC TANK 2 N2 MAKEUP, CLOSE stroke time.

Local

_____ seconds (less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, red light OFF. _____

B. 2-HS-63-107C, SIS ACCUM TK 2 N2 MAKEUP VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.32 Valve 2-FCV-63-107 Logic Test (continued)

[31] **PLACE** Transfer Switch 2-XS-63-107, SIS ACCUM TK 2 N2 MAKEUP VLV TRF, to NORMAL. _____

[32] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, CLEARS. _____

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

6.33 Valve 2-FCV-63-66 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.33 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-66, [IC/720 AZ320] SIS ACC TANK 4 FLOW ISO VALVE. _____

[4] **ENSURE** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-66, SIS ACCUM TANK 4 DRAIN VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, did NOT open (**Acc Crit**. 5.0O). _____

[9] **PLACE** Hand Switch 2-HS-63-66A, CL ACCUM 4 DRAIN, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-66A, CL ACCUM 4 DRAIN, red light ON. _____

B. 2-HS-63-66A, CL ACCUM 4 DRAIN, green light OFF. _____

C. 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, red light OFF. _____

D. 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.33 Valve 2-FCV-63-66 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-66A, CL ACCUM 4 DRAIN, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-66A, CL ACCUM 4 DRAIN, red light OFF. _____

B. 2-HS-63-66A, CL ACCUM 4 DRAIN, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-66, SIS ACCUM TANK 4 DRAIN VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-66A, CL ACCUM 4 DRAIN, red light OFF. _____

B. 2-HS-63-66A, CL ACCUM 4 DRAIN, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-66A, CL ACCUM 4 DRAIN, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, did NOT open (**Acc. Crit.** 5.0O). _____

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

6.33 Valve 2-FCV-63-66 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, stroke from control switch 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, to OPEN, and simultaneously time valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, stroke. _____

[22] **RECORD** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, red light ON. _____

B. 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-66A, CL ACCUM 4 DRAIN, to CLOSE. _____

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

6.33 Valve 2-FCV-63-66 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, did NOT close. _____

[27] **PLACE** Hand Switch 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, to CLOSE, and simultaneously time valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, stroke. _____

[28] **RECORD** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, CLOSE stroke time (**Acc Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[29] **RECORD** valve 2-FCV-63-66, SIS ACC TANK 4 FLOW ISO VALVE, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, red light OFF. _____

B. 2-HS-63-66C, SIS ACCUM TANK 4 DRAIN VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[31] **PLACE** Transfer Switch 2-XS-63-66, SIS ACCUM TANK 4 DRAIN VLV TRF, to NORMAL. _____

[32] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, CLEARS. _____

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

6.34 Valve 2-FCV-63-70 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.34 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-70, [IC/734 AZ308] SIS ACC TANK 4 FILL VALVE. _____

[4] **ENSURE** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-70, SIS ACCUM TK 4 FILL VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, did NOT open (**Acc Crit.** 5.0O). _____

[9] **PLACE** Hand Switch 2-HS-63-70A, MAKEUP TO CL ACCUM 4, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-70A, MAKEUP TO CL ACCUM 4, red light ON. _____

B. 2-HS-63-70A, MAKEUP TO CL ACCUM 4, green light OFF. _____

C. 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, red light OFF. _____

D. 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.34 Valve 2-FCV-63-70 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-70A, MAKEUP TO CL ACCUM 4, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-70A, MAKEUP TO CL ACCUM 4, red light OFF. _____

B. 2-HS-63-70A, MAKEUP TO CL ACCUM 4, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-70, SIS ACCUM TK 4 FILL VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-70A, MAKEUP TO CL ACCUM 4, red light OFF. _____

B. 2-HS-63-70A, MAKEUP TO CL ACCUM 4, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-70A, MAKEUP TO CL ACCUM 4, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, did NOT open (**Acc. Crit.** 5.0O). _____

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

6.34 Valve 2-FCV-63-70 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, stroke from control switch 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, to OPEN, and simultaneously time the valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, stroke. _____

[22] **RECORD** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, red light ON. _____

B. 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-70A, MAKEUP TO CL ACCUM 4, to CLOSE. _____

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

6.34 Valve 2-FCV-63-70 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, did NOT close. _____

[27] **PLACE** Hand Switch 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, to CLOSE, and simultaneously time the valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, stroke. _____

[28] **RECORD** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, CLOSE stroke time (**Acc. Crit** 5.0B).

Hand Switch

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[29] **RECORD** valve 2-FCV-63-70, SIS ACC TANK 4 FILL VALVE, CLOSE stroke time.

Local

_____ seconds (greater than 5 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, red light OFF. _____

B. 2-HS-63-70C, SIS ACCUM TK 4 FILL VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

[31] **PLACE** Transfer Switch 2-XS-63-70, SIS ACCUM TK 4 FILL VLV TRF, to NORMAL. _____

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

6.34 Valve 2-FCV-63-70 Logic Test (continued)

[32] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, CLEARS. _____

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

6.35 Valve 2-FCV-63-95 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.35 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-95, [IC/716 AZ130] SIS ACC TANK 2 FILL VALVE. _____

[4] **ENSURE** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-95, SIS ACCUM TK 2 FILL VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, did NOT open (**Acc Crit.** 5.0O). _____

[9] **PLACE** Hand Switch 2-HS-63-95A, MAKEUP TO CL ACCUM 2, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-95A, MAKEUP TO CL ACCUM 2, red light ON. _____

B. 2-HS-63-95A, MAKEUP TO CL ACCUM 2, green light OFF. _____

C. 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, red light OFF. _____

D. 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.35 Valve 2-FCV-63-95 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-95A, MAKEUP TO CL ACCUM 2, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-95A, MAKEUP TO CL ACCUM 2, red light OFF. _____

B. 2-HS-63-95A, MAKEUP TO CL ACCUM 2, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-95, SIS ACCUM TK 2 FILL VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, ALARMS (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-95A, MAKEUP TO CL ACCUM 2, red light OFF. _____

B. 2-HS-63-95A, MAKEUP TO CL ACCUM 2, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-95A, MAKEUP TO CL ACCUM 2, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, did NOT open (**Acc. Crit** 5.0O). _____

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

6.35 Valve 2-FCV-63-95 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, stroke from control switch 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, to OPEN, and simultaneously time the valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, stroke. _____

[22] **RECORD** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, red light ON. _____

B. 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-95A, MAKEUP TO CL ACCUM 2, to CLOSE. _____

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

6.35 Valve 2-FCV-63-95 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, did NOT close. _____

[27] **PLACE** Hand Switch 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, to CLOSE, and simultaneously time the valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, stroke. _____

[28] **RECORD** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, CLOSE stroke time (**Acc. Crit**. 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[29] **RECORD** valve 2-FCV-63-95, SIS ACC TANK 2 FILL VALVE, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, red light OFF. _____

B. 2-HS-63-95C, SIS ACCUM TK 2 FILL VLV SW, green light ON. _____

C. Valve is CLOSED (Local). _____

[31] **PLACE** Transfer Switch 2-XS-63-95, SIS ACCUM TK 2 FILL VLV TRF, to NORMAL. _____

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

6.35 Valve 2-FCV-63-95 Logic Test (continued)

[32] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX, CLEARS. _____

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

6.36 Valve 2-FCV-63-110 Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.36 are completed. _____

[2] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[3] **ESTABLISH** communications between MCR Panel 2-M-6, Auxiliary Control Room, and at valve 2-FCV-63-110, [IC/716 AZ142] SIS ACC TANK 2 FLOW ISOLATION VALVE. _____

[4] **ENSURE** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, is CLOSED. _____

[5] **ENSURE** Transfer Switch 2-XS-63-110, SIS ACCUM TK 2 DRAIN VLV TRF, is in NORMAL. _____

[6] **ENSURE** Hand Switch 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, is in CLOSE. _____

[7] **PLACE** Hand Switch 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, to OPEN. _____

[8] **VERIFY** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, did NOT open (**Acc Crit.** 5.0O). _____

[9] **PLACE** Hand Switch 2-HS-63-110A, CL ACCUM 2 DRAIN, to OPEN. _____

[10] **VERIFY** the following indications:

A. 2-HS-63-110A, CL ACCUM 2 DRAIN, red light ON. _____

B. 2-HS-63-110A, CL ACCUM 2 DRAIN, green light OFF. _____

C. 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, red light OFF. _____

D. 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, green light OFF. _____

E. Valve is OPEN (Local). _____

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

6.36 Valve 2-FCV-63-110 Logic Test (continued)

[11] **PLACE** Hand Switch 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, to CLOSE. _____

[12] **VERIFY** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, did NOT close. _____

[13] **PLACE** Hand Switch 2-HS-63-110A, CL ACCUM 2 DRAIN, to CLOSE. _____

[14] **VERIFY** the following indications:

A. 2-HS-63-110A, CL ACCUM 2 DRAIN, red light OFF. _____

B. 2-HS-63-110A, CL ACCUM 2 DRAIN, green light ON. _____

C. Valve is CLOSED (Local). _____

[15] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, is CLEAR. _____

[16] **PLACE** Transfer Switch 2-XS-63-110, SIS ACCUM TK 2 DRAIN VLV TRF, to AUX. _____

[17] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, ALARMS. (**Acc Crit** 5.0D). _____

[18] **VERIFY** the following indications:

A. 2-HS-63-110A, CL ACCUM 2 DRAIN, red light OFF. _____

B. 2-HS-63-110A, CL ACCUM 2 DRAIN, green light OFF. _____

[19] **PLACE** Hand Switch 2-HS-63-110A, CL ACCUM 2 DRAIN, to OPEN. _____

[20] **VERIFY** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, did NOT open (**Acc. Crit.** 5.0O). _____

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

6.36 Valve 2-FCV-63-110 Logic Test (continued)

NOTE

Time the valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, stroke from control switch 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, and locally at the valve.

[21] **PLACE** Hand Switch 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, to OPEN, and simultaneously time the valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, stroke. _____

[22] **RECORD** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, OPEN stroke time.

Hand Switch

_____ seconds

M&TE _____ Cal Due Date _____

_____

[23] **RECORD** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, OPEN stroke time.

Local

_____ seconds

M&TE _____ Cal Due Date _____

_____

[24] **VERIFY** the following indications:

A. 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, red light ON. _____

B. 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, green light OFF. _____

C. Valve is OPEN (Local). _____

[25] **PLACE** Hand Switch 2-HS-63-110A, CL ACCUM 2 DRAIN, to CLOSE. _____

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

6.36 Valve 2-FCV-63-110 Logic Test (continued)

[26] **VERIFY** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, did NOT close. _____

[27] **PLACE** Hand Switch 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, to CLOSE, and simultaneously time the valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, stroke. _____

[28] **RECORD** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, CLOSE stroke time (**Acc. Crit.** 5.0B).

Hand Switch

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____
1st

_____
CV

[29] **RECORD** valve 2-FCV-63-110, SIS ACC TANK 2 FLOW ISOLATION VALVE, CLOSE stroke time.

Local

_____ seconds (greater than 1 sec and less than or equal to 10 sec)

M&TE _____ Cal Due Date _____

_____

[30] **VERIFY** the following indications:

A. 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, red light OFF. _____

B. 2-HS-63-110C, SIS ACCUM TK 2 DRAIN VLV, green light ON. _____

C. Valve is CLOSED (Local). _____

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

6.36 Valve 2-FCV-63-110 Logic Test (continued)

[31] **PLACE** Transfer Switch 2-XS-63-110, SIS ACCUM TK 2 DRAIN VLV TRF, to NORMAL. _____

[32] **VERIFY** 2–XA–55–6F–148C, ACR PNL 2-L-11B XS IN AUX XS IN AUX, CLEARS. _____

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

6.37 Safety Injection Pump B-B Logic Test

[1] **VERIFY** Prerequisites in Subsection 4.0 for Section 6.37 are completed. _____

[2] **LOCATE** and **VERIFY** the following relays in 6900V Shutdown Board 2B-B Logic Relay Panel:

A. SIP BOX Relay _____ 1st _____ CV

B. SIP BOY Relay _____ 1st _____ CV

C. SIP UVX Relay _____ 1st _____ CV

D. SIP UVY Relay _____ 1st _____ CV

E. SIATX Relay _____ 1st _____ CV

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[3] **ENSURE** the following relays in 6900V Shutdown Board 2B-B Logic Relay Panel are removed, **AND**

DOCUMENT on Appendix E:

A. SIP BOX Relay _____

B. SIP BOY Relay _____

C. SIP UVX Relay _____

D. SIP UVY Relay _____

E. SIATX Relay _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[4] **LOCATE** and **VERIFY** the following relay socket terminals in the rear of 6900V Shutdown Board 2B-B Logic Relay Panel:

A. 9C to 9D for relay SIP BOX _____ 1st _____ CV

B. 11C to 11D for relay SIP BOY _____ 1st _____ CV

C. 9C to 9F for relay SIP UVX _____ 1st _____ CV

D. 11C to 11F for relay SIP UVY _____ 1st _____ CV

E. 9A to 9D for relay SIP UVX _____ 1st _____ CV

F. 11A to 11D for relay SIP UVY _____ 1st _____ CV

G. 17A to 17D for relay SIATX _____ 1st _____ CV

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[5] **INSTALL** jumpers with test switches in the open position between the following relay socket terminals in the rear of 6900V Shutdown Board 2B-B Logic Relay Panel, **AND**

DOCUMENT on Appendix E

A. 9C to 9D for relay SIP BOX _____

B. 11C to 11D for relay SIP BOY _____

C. 9C to 9F for relay SIP UVX _____

D. 11C to 11F for relay SIP UVY _____

E. 9A to 9D for relay SIP UVX _____

F. 11A to 11D for relay SIP UVY _____

G. 17A to 17D for relay SIATX _____

[6] **CLOSE** the test switch for the following jumpers:

A. 9C to 9D for relay SIP BOX _____

B. 11C to 11D for relay SIP BOY _____

C. 9C to 9F for relay SIP UVX _____

D. 11C to 11F for relay SIP UVY _____

[7] **LOCATE** and **VERIFY** terminals TB619-7 and TB619-8 in cabinet 2-R-51. _____ 1st

_____ CV

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[8] **INSTALL** a jumper with test switch open across terminals TB619-7 and TB619-8 on the field side of the plastic isolators in cabinet 2-R-51 (SI signal), **AND**

DOCUMENT on Appendix E. _____

[9] **ENSURE** 480V CONT & AUX BLDG VENT BD 2B1-B breaker 8A (2-BKR-30-179-B) (SI pump 2B-B RM Cooler Fan) is OPEN. _____

[10] **PERFORM** the electrical lineup listed in Appendix D, identified for this test section. _____

[11] **ENSURE** 6.9kV SD Bd 2B-B Compt 15 breaker (2-BKR-63-15-B) is installed in the test position and OPEN (umbilical cord and test link installed). _____

[12] **ESTABLISH** communications between MCR Panel 2-M-6, 6.9kV SD Bd 2B-B, and 6900V Shutdown Board 2B-B Logic Relay Panel. _____

[13] **ENSURE** the following Integrated Computer System (ICS) points are in scan:

A. HD2042 _____

B. XD2027 _____

C. XD2078 _____

[14] **VERIFY** ICS point XD2078 displays "PWR OFF". _____

[15] **DEPRESS** the TEST CLOSE pushbutton on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[16] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker CLOSES by observing the red flag. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[17] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, red light OFF. _____

B. Compt 15 (2-BKR-63-15-B) green light OFF. _____

C. Compt 15 (2-BKR-63-15-B) red light ON. _____

D. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light OFF. _____

[18] **DEPRESS** the TEST TRIP pushbutton on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[19] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker OPENS by observing the green flag. _____

[20] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, red light OFF. _____

B. Compt 15 (2-BKR-63-15-B) green light ON. _____

C. Compt 15 (2-BKR-63-15-B) red light OFF. _____

D. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light OFF. _____

[21] **REMOVE** the umbilical cord, test link and breaker from 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B). _____

[22] **RAISE** 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) breaker elevator until elevator reaches full up position. _____

[23] **INSTALL** breaker in 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) into the test position. _____

[24] **INSTALL** umbilical cord on 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) breaker. _____

[25] **INSTALL** test link on 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) breaker. _____

[26] **VERIFY** ICS point XD2078 displays "PWR ON" (**Acc Crit** 5.0W). _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[27] **ESTABLISH** communications between MCR Panel 2-M-6, 6900V Shutdown Board 2B-B, SSPS cabinet 2-R-51, and the local control switch 2-HS-63-15B, SIS PUMP B-B MOTOR. _____

[28] **ENSURE** Transfer Switch 2-XS-63-15, SIS PUMP B-B MOTOR TRF, is in NORMAL. _____

[29] **ENSURE** Hand Switch 2-HS-63-15A, SI PMP B, is in STOP/PULL TO LOCK. _____

[30] **VERIFY** ICS point HD2042 displays "PULLT-L". _____

[31] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, green light ON. _____

B. 2-HS-63-15A, SI PMP B, red light OFF. _____

C. Compt 15 (2-BKR-63-15-B) green light ON. _____

D. Compt 15 (2-BKR-63-15-B) red light OFF. _____

E. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light OFF. _____

F. Compt 15 (2-BKR-63-15-B) breaker OPEN (green flag). _____

NOTE

Hand Switch 2-HS-63-15A, SI PMP B, spring returns to A AUTO.

[32] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to A AUTO. _____

[33] **VERIFY** ICS point HD2042 displays "NOT P-L" (**Acc Crit** 5.0W). _____

[34] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[35] **ENSURE** 2-HS-30-179, SIS PUMP ROOM COOLER, is in AUTO. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[36] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, green light ON. _____

B. 2-HS-63-15A, SI PMP B, red light OFF. _____

C. 2-HS-63-15A, SI PMP B, white light OFF. _____

D. Compt 15 (2-BKR-63-15-B) green light ON. _____

E. Compt 15 (2-BKR-63-15-B) red light OFF. _____

F. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light OFF. _____

G. Compt 15 (2-BKR-63-15-B) breaker OPEN (green flag). _____

[37] **ATTACH** a cool damp cloth (or a baggie of ice) to the bulb of the temperature sensor for cooler 2-PMCL-30-179, SIS PUMP ROOM COOLER. _____

[38] **VERIFY** cooler 2-PMCL-30-179, SIS PUMP ROOM COOLER, is OFF. _____

[39] **VERIFY** ICS point XD2027 displays "NOT RUN". _____

[40] **PUSH** 2-HS-63-15B START pushbutton, **AND**

RELEASE. _____

[41] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker CLOSES by observing the red flag. _____

[42] **VERIFY** cooler 2-PMCL-30-179, SIS PUMP ROOM COOLER, STARTS (**Acc. Crit**. 5.0Z). _____

[43] **VERIFY** ICS point XD2027 displays "RUNNING". (**Acc. Crit.** 5.0W). _____

[44] **PUSH** 2-HS-63-15B STOP pushbutton, **AND**

RELEASE. _____

[45] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker OPENS by observing the green flag. _____

[46] **VERIFY** ICS point XD2027 displays "NOT RUN". _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[47] **VERIFY** cooler 2-PMCL-30-179, SIS PUMP ROOM COOLER, STOPS. _____

[48] **PLACE** Hand Switch 2-HS-63-15C, SIS PUMP B-B MOTOR, to START, **AND**

RELEASE. _____

[49] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker did NOT close by observing the green flag (**Acc Crit** 5.0Y). _____

[50] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to START, **AND**

RELEASE. _____

[51] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is CLOSED by observing the red flag.

[52] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, green light OFF. _____

B. 2-HS-63-15A, SI PMP B, red light ON. _____

C. 2-HS-63-15A, SI PMP B, white light OFF. _____

D. Compt 15 (2-BKR-63-15-B) green light OFF. _____

E. Compt 15 (2-BKR-63-15-B) red light ON. _____

F. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light ON. (**Acc Crit** 5.0S). _____

[53] **PLACE** Hand Switch 2-HS-63-15C, SIS PUMP B-B MOTOR, to STOP, **AND**

RELEASE. _____

[54] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker did NOT open by observing the red flag (**Acc Crit** 5.0Y). _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[55] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[56] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by observing the green flag. _____

[57] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, green light ON. _____

B. 2-HS-63-15A, SI PMP B, red light OFF. _____

C. 2-HS-63-15A, SI PMP B, white light OFF. _____

D. Compt 15 (2-BKR-63-15-B) green light ON. _____

E. Compt 15 (2-BKR-63-15-B) red light OFF. _____

F. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light OFF. _____

[58] **ENSURE** 2–XA–55–6F–150A, 6.9 SD BD 2B-B XS IN AUX, is CLEAR. _____

[59] **PLACE** Transfer Switch 2-XS-63-15, SIS PUMP B-B MOTOR TRF, to AUX. _____

[60] **VERIFY** 2–XA–55–6F–150A, 6.9 SD BD 2B-B XS IN AUX, ALARMS (**Acc Crit** 5.0X). _____

[61] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to START, **AND**

RELEASE. _____

[62] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker did NOT close by observing the green flag (**Acc. Crit.** 5.0Y). _____

[63] **PLACE** Hand Switch 2-HS-63-15C, SIS PUMP B-B MOTOR, to START, **AND**

RELEASE. _____

[64] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is CLOSED by observing the red flag. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[65] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, green light OFF. _____

B. 2-HS-63-15A, SI PMP B, red light OFF. _____

C. 2-HS-63-15A, SI PMP B, white light OFF. _____

D. Compt 15 (2-BKR-63-15-B) green light OFF. _____

E. Compt 15 (2-BKR-63-15-B) red light ON. _____

F. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light ON. _____

[66] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[67] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker did NOT open by observing the red flag (**Acc. Crit** 5.0Y). _____

[68] **PLACE** Hand Switch 2-HS-63-15C, SIS PUMP B-B MOTOR, to STOP, **AND**

RELEASE. _____

[69] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by observing the green flag. _____

[70] **VERIFY** the following indications:

A. 2-HS-63-15A, SI PMP B, green light OFF. _____

B. 2-HS-63-15A, SI PMP B, red light OFF. _____

C. 2-HS-63-15A, SI PMP B, white light OFF. _____

D. Compt 15 (2-BKR-63-15-B) green light ON. _____

E. Compt 15 (2-BKR-63-15-B) red light OFF. _____

F. 6.9KV 2B-B Logic Panel SI Pump 2B-B red light OFF. _____

[71] **PLACE** Transfer Switch 2-XS-63-15, SIS PUMP B-B MOTOR TRF, to NORMAL. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[72] **VERIFY** 2–XA–55–6F–150A, 6.9 SD BD 2B-B XS IN AUX, CLEARS. _____

[73] **CLOSE** the test switch on jumper connecting 17A to 17D for relay SIATX on Shutdown Board 2B-B Logic Relay Panel. _____

[74] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is CLOSED by observing the red flag. _____

[75] **OPEN** the test switch on jumper connecting 17A to 17D for relay SIATX. _____

[76] **OPEN** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[77] **CLOSE** the test switch on jumper connecting terminals TB619-7 and TB619-8 on the field side of the plastic isolators in cabinet 2-R-51. _____

[78] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is CLOSED by observing the red flag (**Acc Crit** 5.0V). _____

[79] **OPEN** the test switch on jumper connecting terminals TB619-7 and TB619-8 on the field side of the plastic isolators in cabinet 2-R-51. _____

[80] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker remains CLOSED by observing the red flag (**Acc Crit** 5.0V). _____

[81] **CLOSE** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[82] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker remains CLOSED by observing the red flag. _____

[83] **OPEN** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[84] **CLOSE** the test switch connecting terminals 11A to 11D for relay SIP UVY. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[85] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker remains CLOSED by observing the red flag. _____

[86] **CLOSE** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[87] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by observing the green flag. _____

[88] **OPEN** the test switch connecting terminals 9A to 9D for relay SIP UVX. _____

[89] **OPEN** the test switch connecting terminals 11A to 11D for relay SIP UVY. _____

[90] **OPEN** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[91] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[92] **CLOSE** the test switch connecting terminals TB619-7 and TB619-8 on the field side in cabinet 2-R-51. _____

[93] **CLOSE** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[94] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is CLOSED by observing the red flag. _____

[95] **OPEN** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[96] **OPEN** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[97] **CLOSE** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[98] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is CLOSED by observing the red flag. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[99] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[100] **OPEN** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[101] **OPEN** the test switch connecting terminals 9C to 9D for relay SIP BOX. _____

[102] **OPEN** the test switch connecting terminals 11C to 11D for relay SIP BOY. _____

NOTE

Steps 6.37[103] through 6.37[115] will test breaker closing through time delay relay SIP/ST which has approximately a 10 sec delay time.

[103] **CLOSE** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[104] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker CLOSES after a short delay, by observing the red flag. _____

[105] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[106] **OPEN** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[107] **CLOSE** the test switch connecting terminals 9C to 9D for relay SIP BOX. _____

[108] **CLOSE** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[109] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker CLOSES after a short delay, by observing the red flag. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[110] **OPEN** the test switch connecting terminals 9C to 9F for relay SIP UVX. _____

[111] **OPEN** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[112] **OPEN** the test switch connecting terminals 9C to 9D for relay SIP BOX. _____

[113] **CLOSE** the test switch connecting terminals 11C to 11D for relay SIP BOY. _____

[114] **CLOSE** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[115] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker CLOSES after a short delay, by observing the red flag. _____

[116] **OPEN** the test switch connecting terminals 11C to 11F for relay SIP UVY. _____

[117] **OPEN** the test switch on jumper connecting terminals TB619-7 and TB619-8 on the field side of the plastic isolators in cabinet 2-R-51. _____

[118] **ENSURE** Annunciator 14-E, M-1 THRU M-6 MOTOR TRIPOUT, is CLEAR. _____

[119] **MANUALLY ACTUATE** the instantaneous over current relay 50 A∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B), **AND**

RELEASE. _____

[120] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by observing the green flag. _____

[121] **VERIFY** the trip target is actuated on instantaneous over current relay 50 A∅, on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[122] **VERIFY** 2-HS-63-15A, SI PMP B, white light is ON. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[123] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, ALARMS and audible buzzer sounds (**Acc Crit** 5.0T). _____

[124] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in Alarm. _____

[125] **RESET** the trip target on instantaneous over current relay 50 A∅, on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[126] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[127] **VERIFY** 2-HS-63-15A, SI PMP B, white light is OFF. _____

[128] **VERIFY** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT, is clear. _____

[129] **VERIFY** audible buzzer is silent. _____

[130] **VERIFY** Events Display Monitor indicates, 14E, M-1 THRU M-6 MOTOR TRIPOUT, is in clear. _____

[131] **CLOSE** 6.9kV SD Bd 1B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to START, **AND**

RELEASE. _____

[132] **MANUALLY ACTUATE** the instantaneous over current relay 50 C∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B), **AND**

RELEASE. _____

[133] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by observing the green flag. _____

[134] **VERIFY** the trip target is actuated on instantaneous over current relay 50 C∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[135] **RESET** the trip target on instantaneous over current relay 50 CØ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[136] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE.

[137] **VERIFY** 2-HS-63-15A, SI PMP B, white light is OFF. _____

[138] **CLEAR** 2–XA–55–1B–14E, M-1 THRU M-6 MOTOR TRIPOUT. _____

[139] **CLOSE** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to START, **AND**

RELEASE. _____

[140] **ENSURE** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, is CLEAR. _____

[141] **CLOSE** the contacts Relay 51/83 AØ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by manually rotating the disk, **AND**

HOLD. _____

[142] **VERIFY** 2-HS-63-15A, SI PMP B, white light is ON. _____

[143] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, ALARMS. _____

[144] **VERIFY** Events Display Monitor indicates, 14D, M-1 THRU M-6 MOTOR OVERLOAD, is in alarm. _____

[145] **RELEASE** the disk on Relay 51/83 AØ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[146] **VERIFY** 2-HS-63-15A, SI PMP B, white light is OFF. _____

[147] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, CLEARS. _____

[148] **VERIFY** Events Display Monitor indicates, 14D, M-1 THRU M-6 MOTOR OVERLOAD, is clear. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[149] **CLOSE** the contacts on Relay 51/83 A∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by manually rotating the disk, **AND**

HOLD. _____

[150] **LOCATE** and **VERIFY** terminals 9 and 10 on the back of Relay 51/83 A∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

1st

_____

CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[151] **MOMENTARILY PLACE** a jumper across terminals 9 and 10 on the back of Relay 51/83 A∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[152] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by verifying the green flag. _____

[153] **VERIFY** the trip target is actuated on Relay 51/83 A∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[154] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, ALARMS (**Acc Crit** 5.0U). _____

[155] **VERIFY** Events Display Monitor indicates, 14D, M-1 THRU M-6 MOTOR OVERLOAD, is in alarm. _____

[156] **VERIFY** 2-HS-63-15A, SI PMP B, white light is ON. _____

[157] **RELEASE** the disk on Relay 51/83 A∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[158] **VERIFY** 2-HS-63-15A, SI PMP B, white light is OFF. _____

[159] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[160] **RESET** the trip target on Relay 51/83 A∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[161] **VERIFY** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD, is CLEAR. _____

CAUTION

Enlist the help of the Relay Protection Group when manually rotating the induction disk so as to not bend or break the contacts.

[162] **CLOSE** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to START, **AND**

RELEASE. _____

[163] **CLOSE** the contacts on Relay 51/83 C∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by manually rotating the disk, **AND**

HOLD. _____

[164] **LOCATE** and **VERIFY** terminals 9 and 10 on the back of Relay 51/83 C∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____ 1st _____ CV

NOTE

When momentarily placing a jumper, place the jumper on the designated contacts and HOLD for a three count.

[165] **MOMENTARILY PLACE** a jumper across terminals 9 and 10 on the back of Relay 51/83 C∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[166] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by observing the green flag. _____

[167] **RELEASE** the disk on Relay 51/83 C∅ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[168] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[169] **RESET** the trip target on Relay 51/83 CØ on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker. _____

[170] **CLEAR** 2–XA–55–1B–14D, M-1 THRU M-6 MOTOR OVERLOAD. _____

[171] **CLOSE** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker by placing Hand Switch 2-HS-63-15A, SI PMP B, to START, **AND**

RELEASE. _____

[172] **MANUALLY ACTUATE** ground fault relay 50G on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B). _____

[173] **VERIFY** 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B) breaker is OPEN by observing the green flag. _____

[174] **VERIFY** ground fault relay 50G trip target is actuated on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B). _____

[175] **RESET** ground fault relay 50G trip target on 6.9kV SD Bd 2B-B Compt 15 (2-BKR-63-15-B). _____

[176] **PLACE** Hand Switch 2-HS-63-15A, SI PMP B, to STOP, **AND**

RELEASE. _____

[177] **REMOVE** damp cloth (or a baggie of ice) from the bulb of the temperature sensor for cooler 2-PMCL-30-179, SIS PUMP ROOM COOLER. _____

[178] **REMOVE** umbilical cord on 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) breaker. _____

[179] **REMOVE** test link on 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) breaker. _____

[180] **REMOVE** the breaker from 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[181] **LOWER** 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) breaker elevator until elevator reaches full down position. _____

[182] **REPLACE** the breaker into 6.9kV SD Bd 2B-B Compt. 15 (2-BKR-63-15-B) in the seismic position. _____

[183] **REMOVE** temporary jumpers from the following relay socket terminals in the rear of 6900V Shutdown Board 2B-B Logic Relay Panel, **AND**

DOCUMENT on Appendix E:

A. 9C to 9D for relay SIP BOX _____

B. 11C to 11D for relay SIP BOY _____

C. 9C to 9F for relay SIP UVX _____

D. 11C to 11F for relay SIP UVY _____

E. 9A to 9D for relay SIP UVX _____

F. 11A to 11D for relay SIP UVY _____

G. 17A to 17D for relay SIATX _____

[184] **LOCATE** and **VERIFY** terminals TB619-7 and TB619-8 in cabinet 2-R-51.

_____ 1st

_____ CV

[185] **REMOVE** the jumper across terminals TB619-7 and TB619-8 on the field side of the plastic isolators in cabinet 2-R-51, **AND**

DOCUMENT on Appendix E. _____

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

6.37 Safety Injection Pump B-B Logic Test (continued)

[186] **REINSTALL** the following relays in 6900V Shutdown Board 2B-B Logic Relay Panel or enter **N/A** for the relay and explain in the Test Log, **AND**

DOCUMENT on Appendix E:

A. SIP BOX Relay _____

B. SIP BOY Relay _____

C. SIP UVX Relay _____

D. SIP UVY Relay _____

E. SIATX Relay _____

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

7.0 POST PERFORMANCE ACTIVITY

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

[2] **VERIFY** that vibration was monitored and that all instances of excessive vibration have an associated TDN. _____

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

RECORD the results on Measuring and Test Equipment (M&TE) Log. _____

[4] **LOCATE** and **VERIFY** terminals TB602-11 and TB602-12 in Panel 2-R-51.

_____ 1st

_____ CV

[5] **REMOVE** the temporary jumper across terminals TB602-11 and TB602-12 in Panel 2-R-51 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

[6] **LOCATE** and **VERIFY** terminals TB620-11 and TB620-12 in Panel 2-R-51.

_____ 1st

_____ CV

[7] **REMOVE** the temporary jumper across terminals TB620-11 and TB620-12 in Panel 2-R-51 on the field side of the plastic insulators, **AND**

DOCUMENT on Appendix E. _____

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

7.0 POST PERFORMANCE ACTIVITY (continued)

[8] **LOCATE** and **VERIFY** terminals TB704-11 and TB704-12 in Panel 2-M-22.

_____ 1st

_____ CV

[9] **REMOVE** the temporary jumper across terminals TB704-11 and TB704-12 in Panel 2-M-22, **AND**

DOCUMENT on Appendix E. _____

[10] **LOCATE** and **VERIFY** terminals TB611-9 and TB611-10 in Panel 2-R-48.

_____ 1st

_____ CV

[11] **REMOVE** the temporary jumper across terminals TB611-9 and TB611-10 in Panel 2-R-48 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____

[12] **LOCATE** and **VERIFY** terminals TB618-11 and TB618-12 in Panel 2-R-48.

_____ 1st

_____ CV

[13] **REMOVE** the temporary jumper across terminals TB618-11 and TB618-12 in Panel 2-R-48 on the field side of the plastic isolators, **AND**

DOCUMENT on Appendix E. _____

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

8.0 RECORDS

A. QA Records

Completed Test Package

B. Non-QA Records

None

Appendix A
(Page 1 of 1)

TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW

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

Additional copies of this table may be made as necessary.

PROCEDURE/ INSTRUCTION	REVISION/CHANGES	INITIAL AND DATE. (N/A for no change)
FSAR Section 6.3 Section 14.2	Amendment 100	

Appendix B
(Page 1 of 1)

TEMPORARY CONDITION LOG

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

Additional copies of this table may be made as necessary.

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 6)

VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-3	SIS PUMPS RECIRC TO RWST	Closed		Normal	
2-FCV-63-4	SIS PUMP A-A DISCHARGE TO RWST SHUTOFF	Closed		Normal	
2-FCV-63-175	SIS PUMP B DISCHARGE TO RWST SHUTOFF VLV	Closed		Normal	
2-FCV-63-26	SIS BORON INJECTION TANK SHUTOFF VALVE	Closed		Normal	
2-FCV-63-25	SIS BORON INJECTION TANK SHUTOFF VALVE	Closed		Normal	
2-FCV-63-118	SIS ACCUMULATOR TANK 1 FLOW ISOL VLV	Open		Normal	
2-FCV-63-80	SIS ACCUMULATOR TANK 3 FLOW ISOL VLV	Open		Normal	
2-FCV-63-98	SIS ACCUMULATOR TANK 2 FLOW ISOL VLV	Open		Normal	
2-FCV-63-67	SIS ACCUMULATOR TANK 4 FLOW ISOL VLV	Open		Normal	
2-FCV-63-72	CONTAINMENT SUMP TO RHR PUMP A	Closed		Normal	
2-FCV-63-73	CONTAINMENT SUMP TO RHR PUMP B	Closed		Normal	
2-FCV-63-8	RHR HEAT EXCHANGER A TO CVCS CHG PUMP	Closed		Normal	
2-FCV-63-11	RHR HEAT EXCHANGER B TO SIS PUMP	Closed		Normal	
2-FCV-63-7	SIS PUMP INLET TO CVCS CHG PUMP	Closed		Normal	
2-FCV-63-6	SIS PUMP INLET TO CVCS CHG PUMP	Closed		Normal	
2-FCV-63-1	RWST TO RHR PUMP	Closed		Normal	

Appendix C
(Page 2 of 6)

VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-5	RWST TO SIS PUMP	Closed		Normal	
2-FCV-63-47	SIS PUMP 1A INLET VALVE	Closed		Normal	
2-FCV-63-48	SIS PUMP 1B INLET VALVE	Closed		Normal	
2-FCV-63-152	SIS PUMP 1A OUTLET VALVE	Closed		Normal	
2-FCV-63-153	SIS PUMP 1B OUTLET VALVE	Closed		Normal	
2-FCV-63-93	SIS TO REACTOR COOLANT LOOPS 2 & 3	Closed		Normal	
2-FCV-63-94	SIS TO REACTOR COOLANT LOOPS 1 & 4	Closed		Normal	
2-FCV-63-156	SIS TO HOT LEG LOOPS 1 & 3	Closed		Normal	
2-FCV-63-157	SIS TO HOT LEG LOOPS 2 & 4	Closed		Normal	
2-FCV-63-22	SIS PUMP COLD LEG INJECTION	Closed		Normal	
2-FCV-63-172	RHR TO HOT LEG LOOPS 1 & 3	Closed		Normal	
2-FCV-63-177	SIS PUMP INLET TO CVCS CHARGING PUMP	Closed		Normal	
2-FCV-63-64	SIS ACCUM TANK NITROGEN HEADER INLET	Closed		Normal	
2-FCV-63-71	SIS CHECK VALVE TEST LINE ISOL VALVE	Closed		Normal	
2-FCV-63-23	SIS ACCUM FILL LINE ISOL VALVE	Closed		N/A	
2-FCV-63-84	SIS CHECK VALVE TEST LINE ISOL VALVE	Closed		N/A	
2-FCV-63-65	SIS ACCUM TANK N2 HEADER VENT VALVE	Closed		Normal	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-158	RHR RETURN FROM SIS SAMPLE LINE VALVE	Closed		N/A	
2-FCV-63-165	RCS LOOP 2 HOT LEG TEST LINE VALVE	Closed		N/A	
2-FCV-63-78	SIS ACCUM TANK 3 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-79	SIS ACCUM TANK 3 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-167	SIS PUMP OUTLET TEST LINE VALVE	Closed		N/A	
2-FCV-63-116	SIS ACC TANK 1 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-117	SIS ACC TANK 1 OUTLET CHECK VALVE TEST	Closed		N/A	
2-FCV-63-163	RCS LOOP 1 HOT LEG TEST LINE	Closed		N/A	
2-FCV-63-96	SIS ACC TANK 2 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-97	SIS ACC TANK 2 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-21	SIS PUMP OUTLET TO SIS TEST LINE	Closed		N/A	
2-FCV-63-112	SIS CHECK VALVE LEAK TEST ISOLATION VALVE	Closed		N/A	
2-FCV-63-164	RCS LOOP 3 HOT LEG TEST LINE	Closed		N/A	
2-FCV-63-166	RCS LOOP 4 HOT LEG TEST LINE	Closed		N/A	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-121	SIS COLD LEG CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-68	SIS ACC TANK 4 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-69	SIS ACC TANK 4 CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-174	SIS CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-111	SIS CHECK VALVE TEST LINE	Closed		N/A	
2-FCV-63-63	SIS ACC TANK 4 N2 MAKEUP	Closed		Normal	
2-FCV-63-66	SIS ACC TANK 4 FLOW ISO VALVE	Closed		Normal	
2-FCV-63-70	SIS ACC TANK 4 FILL VALVE	Closed		Normal	
2-FCV-63-77	SIS ACC TANK 3 FILL VALVE	Closed		Normal	
2-FCV-63-67	SIS ACC TANK 3 N2 MAKEUP	Closed		Normal	
2-FCV-63-90	SIS ACC TANK 3 FLOW ISOLATION VALVE	Closed		Normal	
2-FCV-63-95	SIS ACC TANK 2 FILL VALVE	Closed		Normal	
2-FCV-63-107	SIS ACC TANK 2 N2 MAKEUP	Closed		Normal	
2-FCV-63-110	SIS ACC TANK 2 FLOW ISOLATION VALVE	Closed		Normal	
2-FCV-63-115	SIS ACC TANK 1 FILL VALVE	Closed		Normal	
2-FCV-63-127	SIS ACC TANK 1 N2 MAKEUP	Closed		Normal	
2-FCV-63-130	SIS ACC TANK 1 FLOW ISOLATION VALVE	Closed		Normal	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-FCV-63-24	SIS ACC FILL LINE ISO VALVE	Closed		Normal	
2-FCV-63-185	RHR SUCTION VALVE LEAK TEST LINE	Closed		N/A	
2-FCV-63-186	RHR SUCTION VALVE LEAK TEST LINE	Closed		N/A	
2-FCV-63-187	SIS CHECK VALVE LEAK TEST ISO	Closed		N/A	
2-FCV-63-188	SIS CHECK VALVE LEAK TEST ISO	Closed		N/A	
2-ISV-32-3184	CONTROL AIR TO 2-FCV-63-64	OPEN		N/A	
2-ISV-32-3477	CONTROL AIR TO 2-FCV-63-185	OPEN		N/A	
2-ISV-32-3519	CONTROL AIR TO 2-FCV-63-65	OPEN		N/A	
2-ISV-32-3478	CONTROL AIR TO 2-FCV-63-186	OPEN		N/A	
2-ISV-32-3479	CONTROL AIR TO 2-FCV-63-187	OPEN		N/A	
2-ISV-32-3480	CONTROL AIR TO 2-FCV-63-188	OPEN		N/A	
2-ISV-32-3482	CONTROL AIR TO 2-FCV-63-167	OPEN		N/A	
2-ISV-32-3623	CONTROL AIR TO 2-FCV-63-163	OPEN		N/A	
2-ISV-32-3568	CONTROL AIR TO 2-FCV-63-96	OPEN		N/A	
2-ISV-32-3570	CONTROL AIR TO 2-FCV-63-97	OPEN		N/A	
2-ISV-32-3489	CONTROL AIR TO 2-FCV-63-112	OPEN		N/A	
2-ISV-32-3537	CONTROL AIR TO 2-FCV-63-166	OPEN		N/A	

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VALVE CHECKLIST

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

Valve I.D.	Description	Position	Checked by Initials/Date	Transfer Switch Position	Checked by Initials/Date
2-ISV-32-3490	CONTROL AIR TO 2-FCV-63-121	OPEN		N/A	
2-ISV-32-3521	CONTROL AIR TO 2-FCV-63-68	OPEN		N/A	
2-ISV-32-3522	CONTROL AIR TO 2-FCV-63-69	OPEN		N/A	
2-ISV-32-3532	CONTROL AIR TO 2-FCV-63-63	OPEN		N/A	
2-ISV-32-3654	CONTROL AIR TO 2-FCV-63-107	OPEN		N/A	
2-ISV-32-3520	CONTROL AIR TO 2-FCV-63-66	OPEN		N/A	
2-ISV-32-3531	CONTROL AIR TO 2-FCV-63-70	OPEN		N/A	
2-ISV-32-3659	CONTROL AIR TO 2-FCV-63-95	OPEN		N/A	
2-ISV-32-3571	CONTROL AIR TO 2-FCV-63-110	OPEN		N/A	
2-LCV-62-135	CHARGING PUMP FLOW RWST	Closed		Normal	
2-LCV-62-136	CHARGING PUMP FLOW RWST	Closed		Normal	
2-FCV-74-3-A	RHR A-A SUCTION ISOLATION	Closed		Normal	
2-FCV-74-21-B	RHR B-B SUCTION ISOLATION	Closed		Normal	
2-ISV-77-886	SIS ACC N2 SUPPLY	Closed		N/A	

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
+480V RX MOV BD 2B1-B, COMPT 10A	VALVE 2-FCV-63-4-B 2-BKR-63-4-B	2-FU-213-B110/1N 2-FU-213-B110/1A	ON	6.1		
480V RX MOV BD 2A1-A, COMPT 11B	VALVE 2-FCV-63-8-A 2-BKR-63-8-A	2-FU-213-A111/11N 2-FU-213-A111/11A	ON	6.1		
480V RX MOV BD 2B1-B, COMPT 11B	VALVE 2-FCV-63-11-B 2-BKR-63-11-B	2-FU-213-B111/11N 2-FU-213-B111/11A	ON	6.1		
120V AC VIT BD 2-I BKR 10	RELAY 8804AX	2-FU-278-L10/H9 2-FU-278-L10/H10	CLOSED	6.1		
120V AC VIT BD 2-IV BKR 40	RELAY 8804AXB	2-FU-278-L11B/J9 2-FU-278-L11B/J10	CLOSED	6.1		
480V RX MOV BD 2B1-B, COMPT 13D	VALVE 2-FCV-63-175-B 2-BKR-63-175-B	2-FU-213-B113/31N 2-FU-213-B113/31A	ON	6.2		
480V RX MOV BD 2A1-A, COMPT 11B	VALVE 2-FCV-63-8-A 2-BKR-63-8-A	2-FU-213-A111/11N 2-FU-213-A111/11A	ON	6.2		
480V RX MOV BD 2B1-B, COMPT 11B	VALVE 2-FCV-63-11-B 2-BKR-63-11-B	2-FU-213-B111/11N 2-FU-213-B111/11A	ON	6.2		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
120V AC VIT BD 2-I BKR 10	RELAY 8804AX	2-FU-278-L10/H9 2-FU-278-L10/H10	CLOSED	6.2		
480V RX MOV BD 2B1-B, COMPT 11E	VALVE 2-FCV-63-25-B 2-BKR-63-25-B	2-FU-213-B111/41N 2-FU-213-B111/41A	ON	6.3		
480V RX MOV BD 2B1-B, COMPT 8D	VALVE 2-FCV-63-98-B 2-BKR-63-98-B/B	2-FU-213-B18/31N 2-FU-213-B18/31A 2-FU-213-B18/32	ON	6.4		
480V RX MOV BD 2B1-B, COMPT 3F2	VALVE 2-FCV-63-98-B 2-BKR-63-98-A/B	N/A	ON	6.4		
120V AC VIT BD 2-II BKR 44	RELAY P11BX1	2-FU-99-55/L15 2-FU-99-55/L16	CLOSED	6.4		
480V RX MOV BD 2B1-B, COMPT 7D	VALVE 2-FCV-63-67-B 2-BKR-63-67-B/B	2-FU-213-B17/31N 2-FU-213-B17/31A 2-FU-213-B17/32	ON	6.5		
480V RX MOV BD 2B1-B, COMPT 16F2	VALVE 2-FCV-63-67-B 2-BKR-63-67-A/B	N/A	ON	6.5		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
120V AC VIT BD 2-II BKR 44	RELAY P11BX1	2-FU-99-55/L15 2-FU-99-55/L16	CLOSED	6.5		
480V RX MOV BD 2B1-B, COMPT 11A	VALVE 2-FCV-63-6-B 2-BKR-63-6-B	2-FU-213-B111/1N 2-FU-213-B111/1A	ON	6.6		
480V RX MOV BD 2B1-B, COMPT 12B	VALVE 2-FCV-63-48-B 2-BKR-63-48-B	2-FU-213-B112/11N 2-FU-213-B112/11A	ON	6.7		
480V RX MOV BD 2B1-B, COMPT 13A	VALVE 2-FCV-63-153-B 2-BKR-63-153-B	2-FU-213-B113/1N 2-FU-213-B113/1A	ON	6.8		
480V RX MOV BD 2B1-B, COMPT 12E	VALVE 2-FCV-63-94-B 2-BKR-63-94-B	2-FU-213-B112/41N 2-FU-213-B112/41A	ON	6.9		
480V RX MOV BD 2B1-B, COMPT 13B	VALVE 2-FCV-63-157-B 2-BKR-63-157-B	2-FU-213-B113/11N 2-FU-213-B113/11A	ON	6.10		
480V RX MOV BD 2B1-B, COMPT 9B	VALVE 2-FCV-63-172-B 2-BKR-63-172-B	2-FU-213-B19/11N 2-FU-213-B19/11A	ON	6.11		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
480V RX MOV BD 2B1-B, COMPT 12D	VALVE 2-FCV-63-73-B 2-BKR-63-73-B	2-FU-213-B112/31N 2-FU-213-B112/31A	ON	6.12		
480V C&A VT BD 2B1-B, COMPT 7D	VALVE 2-FCV-74-21-B 2-BKR-74-21-B	2-FU-214-B17/31N-B 2-FU-214-B17/31A-B	ON	6.12		
480V RX MOV BD 2A1-A, COMPT 10B	VALVE 2-FCV-63-3-A 2-BKR-63-3-A	2-FU-213-A110/11N 2-FU-213-A110/11A	ON	6.13		
480V RX MOV BD 2B1-B, COMPT 10A	VALVE 2-FCV-63-4-B 2-BKR-63-4-B	2-FU-213-B110/1N 2-FU-213-B110/1A	ON	6.13		
480V RX MOV BD 2B1-B, COMPT 13D	VALVE 2-FCV-63-175-B 2-BKR-63-175-B	2-FU-213-B113/31N 2-FU-213-B113/31A	ON	6.13		
480V RX MOV BD 2B1-B, COMPT 12D	VALVE 2-FCV-63-73-B 2-BKR-63-73-B	2-FU-213-B112/31N 2-FU-213-B112/31A	ON	6.13		
480V RX MOV BD 2B1-B, COMPT 11B	VALVE 2-FCV-63-11-B 2-BKR-63-11-B	2-FU-213-B111/11N 2-FU-213-B111/11A	ON	6.13		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
120V AC VIT BD 2-I BKR 10	RELAY 8813X	2-FU-278-L10/H7 2-FU-278-L10/H8	CLOSED	6.13		
120V AC VIT BD 2-IV BKR 40	RELAY 8813XB	2-FU-278-L11B/J7 2-FU-278-L11B/J8	CLOSED	6.13		
480V RX MOV BD 2B1-B, COMPT 10B	VALVE 2-FCV-63-5-B 2-BKR-63-5-B	2-FU-213-B110/11N 2-FU-213-B110/11A	ON	6.14		
120V AC VIT BD 2-II BKR 44	RELAY P11BX1	2-FU-99-55/L15 2-FU-99-55/L16	CLOSED	6.14		
480V RX MOV BD 2B1-B, COMPT 11D	VALVE 2-FCV-63-22-B 2-BKR-63-22-B/B	2-FU-213-B111/31N 2-FU-213-B111/31A	ON	6.15		
480V RX MOV BD 2B1-B, COMPT 2F2	VALVE 2-FCV-63-22-B 2-BKR-63-22-A/B	N/A	ON	6.15		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
125V DC VITAL BAT BD III BKR 310 & 311	VALVE 2-FCV-63-64 BKR	0-FU-236-3/A13 0-FU-236-3/B13	CLOSED	6.16		
125V DC VITAL BAT BD III BKR 310	VALVE 2-FCV-63-185 BKR	0-FU-236-3/A19	CLOSED	6.17		
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-186 BKR	0-FU-236-3/D40	CLOSED	6.19		
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-187 BKR	0-FU-236-3/D42	CLOSED	6.20		
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-188 BKR	0-FU-236-3/D45	CLOSED	6.21		
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-167 BKR	0-FU-236-3/D37	CLOSED	6.22		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-163 BKR	0-FU-236-3/D31	CLOSED	6.23		
125V DC VITAL BAT BD IV BKR 217	VALVE 2-FCV-63-96 BKR	0-FU-236-4/D29	CLOSED	6.24		
125V DC VITAL BAT BD IV BKR 218	VALVE 2-FCV-63-97 BKR	0-FU-236-4/E30	CLOSED	6.25		
125V DC VITAL BAT BD IV BKR 217	VALVE 2-FCV-63-112 BKR	0-FU-236-4/D31	CLOSED	6.26		
125V DC VITAL BAT BD IV BKR 218	VALVE 2-FCV-63-166 BKR	0-FU-236-4/E20	CLOSED	6.27		
125V DC VITAL BAT BD III BKR 217	VALVE 2-FCV-63-121 BKR	0-FU-236-3/D32	CLOSED	6.28		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
125V DC VITAL BAT BD IV BKR 218	VALVE 2-FCV-63-68 BKR	0-FU-236-4/E26	CLOSED	6.29		
125V DC VITAL BAT BD IV BKR 217	VALVE 2-FCV-63-69 BKR	0-FU-236-4/D27	CLOSED	6.30		
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-63 BKR	0-FU-236-4/D8 0-FU-236-4/E8	CLOSED	6.31		
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-107 BKR	0-FU-236-4/D12 0-FU-236-4/E14	CLOSED	6.32		
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-66 BKR	0-FU-236-4/D9 0-FU-236-4/E9	CLOSED	6.33		
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-70 BKR	0-FU-236-4/D10 0-FU-236-4/E10	CLOSED	6.34		

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ELECTRICAL CHECKLIST

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

Device Number	Description	Fuses Installed	Position	Test Section	Checked by Initials/Date	CV Initials/Date
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-95 BKR	0-FU-236-4/E13 0-FU-236-4/D40	CLOSED	6.35		
125V DC VITAL BAT BD IV BKR 217 & 218	VALVE 2-FCV-63-110 BKR	0-FU-236-4/D14 0-FU-236-4/E15	CLOSED	6.36		
120V AC VIT BD 2-II BKR 6	RELAY 30B1	2-FU-275-R76/I15 2-FU-275-R76/I16	CLOSED	6.37		
120V AC VIT BD 2-II BKR 9	RELAY 51B1	2-FU-275-R75/I23 2-FU-275-R75/I24	CLOSED	6.37		
6.9KV Shutdown Power & Load Shed Logic	SI Pump 2A-A Breaker 6.9KV Bd 2A-A, Compt 15	2-FU-211-A15/1N-A 2-FU-211-A15/2N-A 2-FU-211-A15/3N-A 2-FU-211-A15/1A-A 2-FU-211-A15/2A-A 2-FU-211-A15/3A-A	OPEN	6.37		

Appendix E
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CONFIGURATION CONTROL LOG FOR WIRE LIFTS

CONFIGURATION CONTROL LOG FOR WIRE LIFTS	Sheet _____ of _____

NOTES

1. Any time wires are lifted and are left unattended, there must be a nonconductive tag attached to them identifying the work instruction that required the wire to be lifted.
2. Additional copies of this table may be made as necessary.
3. Torquing of wires shall be done in accordance with 25402-000-GPP-0000-N3304 or MAI-3.3.

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