

## WBN2Public Resource

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**From:** Boyd, Desiree L [dlboyd@tva.gov]  
**Sent:** Wednesday, August 15, 2012 2:21 PM  
**To:** Epperson, Dan; Wilson, George; Poole, Justin  
**Cc:** Arent, Gordon; Boyd, Desiree L; Hamill, Carol L  
**Subject:** TVA letter to NRC\_08-15-12\_2-PTI-077-03 R1 transmittal to NRC  
**Attachments:** 08-15-12\_2-PTI-077-03 R1 transmittal to NRC\_Final.pdf

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

*Thank You,*

~\*~\*~\*~\*~\*~\*~\*~\*~\*

*Desiree L. Boyd*

WBN Unit 2 Licensing

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August 15, 2012

U.S. Nuclear Regulatory Commission  
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Watts Bar Nuclear Plant, Unit 2  
NRC Docket No. 50-391

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

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

PTI NUMBER	Rev.	TITLE
2-PTI-077-03	1	Liquid Waste Collection

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

Respectfully,

A handwritten signature in black ink that reads "R.A. Hruby, Jr.".

Raymond A. Hruby, Jr.  
General Manager, Technical Services  
Watts Bar Unit 2

Enclosure

U.S. Nuclear Regulatory Commission  
Page 2  
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cc (Enclosure):

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NRC Resident Inspector Unit 2  
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Spring City, Tennessee 37381



U.S. Nuclear Regulatory Commission  
Page 3  
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bcc (Enclosure):

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Fred Brown, Deputy Regional Administrator for Construction  
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Region II  
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Atlanta, Georgia 30303-1257

**WATTS BAR NUCLEAR PLANT  
UNIT 2 PREOPERATIONAL TEST**

**TITLE:** Liquid Waste Collection

**Instruction No:** 2-PTI-077-03

**Revision No:** 1

**PREPARED BY:** Kurt McLormack [Signature] **DATE:** 7/24/12  
PRINT NAME / SIGNATURE

**REVIEWED BY:** Robert C. Evans II [Signature] **DATE:** 7-24-12  
PRINT NAME / SIGNATURE

**INSTRUCTION APPROVAL**

**JTG MEETING No:** 2-12-015  
**JTG CHAIRMAN:** [Signature] **DATE:** 7/26/12  
**APPROVED BY:** [Signature] **DATE:** 7/26/12  
PREOPERATIONAL STARTUP MANAGER

**TEST RESULTS APPROVAL**

**JTG MEETING No:** \_\_\_\_\_  
**JTG CHAIRMAN:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
**APPROVED BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
PREOPERATIONAL STARTUP MANAGER

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 2 of 148</b>
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### Revision Log

<b>Revision or Change Number</b>	<b>Effective Date</b>	<b>Affected Page Numbers</b>	<b>Description of Revision/Change</b>
0000	06-21-12	ALL	Initial issue created using 1-PTI-77-03 Rev 0.
0001	07-26-12	144-148	Added heading to pages 144 through 148 and added them to the table of contents.

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## **1.0 INTRODUCTION**

### **1.1 Test Objectives**

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

The objective of this test is to demonstrate the capability of the Liquid Waste Collection System to function according to design.

### **1.2 Scope**

A. Pump room compartment drains:

1. Residual Heat Removal Pump 2A Room
2. Residual Heat Removal Pump 2B Room
3. Containment Spray Pump 2A Room
4. Containment Spray Pump 2B Room

B. Containment Isolation Valves:

1. 2-FCV-77-127, RB SUMP DISCHARGE FLOW CONTROL
2. 2-FCV-77-128, RB SUMP DISCHARGE FLOW CONTROL

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## 1.2 Scope (continued)

### C. Flood Detection Instrumentation:

1. 2-LS-40-17
2. 2-LS-40-18
3. 2-LS-40-26
4. 2-LS-40-27
5. 2-LS-40-28
6. 2-LS-40-34
7. 2-LS-40-35
8. 2-LS-40-36
9. 2-LS-40-37
10. 2-LS-40-38
11. 2-LS-40-48
12. 2-LS-40-49
13. 2-LS-40-50

### D. Waste Disposal Pumps

1. 2-PMP-77-125A
2. 2-PMP-77-125B
3. 2-PMP-77-129
4. 2-PMP-77-410
5. 2-PMP-77-411

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## **2.0 REFERENCES**

### **2.1 Performance References**

- A. SMP-9.0, CONDUCT OF TEST
- B. SOI-77.01 Rev 69, Liquid Waste Disposal

### **2.2 Developmental References**

- A. Unit 2 Final Safety Analysis Report - Amendment 108
  - 1. Section 6.3.2.11.3
  - 2. Section 6.2.4
  - 3. Section 9.3.3
  - 4. Section 11.2
  - 5. Chapter 14 - Table 14.2-1 Sheets 12, 28, 83 of 89
- B. Drawings
  - 1. Flow Diagrams
    - a. 2-47W830-1 Rev 5, Waste Disposal System
    - b. 2-47W848-5 Rev 3, Control Air System
    - c. 2-47W848-9 Rev 5, Control Air System
    - d. 2-47W851-1 Rev 4, Floor & Equipment Drains System
      - (1) 53236-1 Rev 0
      - (2) 53236-2 Rev 0
      - (3) 53948-5 Rev 0
    - e. 47W852-1 Rev 10, Floor & Equipment Drains System
    - f. 2-47W852-5 Rev 3, Roof Drains & Flr Eqpt Drains System



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## 2.2 Developmental References (continued)

### 2. Electrical Control/Logic Diagrams

- a. 2-45B640-38 Rev 0, Contact Development of Selector Switches and Pushbuttons
- b. 2-45B640-55 Rev 0, Contact Development of Selector Switches and Pushbuttons
- c. 2-45B640-106 Rev 0, Contact Development of Control and Instrument Switches
- d. 2-45B640-261 Rev 0, Contact Development of Selector Switches and Pushbuttons
- e. 45B640-267 Rev 1, Contact Development of Selector Switches and Pushbuttons
- f. 2-47W610-40-1 Rev 1, Control Diagram Station Drainage System
- g. 2-47W610-77-4 Rev 3, Control Diagram Waste Disposal System
- h. 2-47W611-77-1 Rev 1, Logic Diagram Waste Disposal System
  - (1) 52339-17 Rev 0
  - (2) 52378-628 Rev 0
- i. 2-47W611-77-7 Rev 0, Logic Diagram Waste Disposal System

### 3. Electrical Wiring Diagrams

- a. 45N600-77-2 Rev 4, Waste Disposal System Schematic Diagrams
- b. 45W600-40 Rev 1, Station Drainage System Schematic Diagrams
- c. 2-45W600-57-7 Rev 2, Separation & Misc Aux Relays Schematic Diagrams
  - (1) 53296-74 Rev 0
- d. 2-45W600-77-2 Rev 0, Waste Disposal System Schematic Diagrams
  - (1) 52453-150 Rev 0

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## 2.2 Developmental References (continued)

- e. 2-45W600-77-6 Rev 1, Waste Disposal System Schematic Diagrams
  - (1) 52339-23 Rev 0
  - (2) 52453-156 Rev 0
- f. 2-45W760-77-3 Rev 0, Waste Disposal System Schematic Diagrams
  - (1) 52378-132 Rev 0
  - (2) 53287-148 Rev 2
  - (3) 53296-68 Rev 1
  - (4) 53296-69 Rev 1
- g. 2-45W760-77-6 Rev 0, Waste Disposal System Schematic Diagrams
  - (1) 52378-133 Rev 0
  - (2) 53291-13 Rev 1
- h. 45B774-6A Rev 4, 480V Aux Bldg Com MCC A Conn Diag- Compt 6A
  - (1) 53291-1 Rev 1
- i. 45B774-6B Rev 3, 480V Aux Bldg Com MCC A Conn Diag- Compt 6B
  - (1) 53291-2 Rev 1
- j. 45W774-3 Rev 4, 480V Aux Bldg Com MCC A Connection Diagrams
- k. 45W2673-8 Rev 7, Balance of Plant Instr Rack, Non-Div Connection Diagrams
  - (1) 52378-303 Rev 3
- l. 2-45N2676-4, Solid State Protection Sys Train A Connection Diagram  
Anticipated, used as constructed version of 45N2676-4
- m. 2-45N2677-4, Solid State Protection Sys Train A Connection Diagram  
Anticipated, used as constructed version of 45N2677-4

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## 2.2 Developmental References (continued)

- n. 0-45B2755-2A Rev 0, 480V Reactor Vent BD 2A-A Conn Diag- Compt 2A  
(1) 53296-1 Rev 1
- o. 2-45B2756-2A Rev 0, 480V Reactor Vent BD 2B-B Conn Diag- Compt 2A
- p. 2-45W744-2 Rev 0, 480V Auxiliary Bldg Com MCC A Single Line SH-2
- q. 45W744-3 Rev 13, 480V Auxiliary Bldg Com MCC B Single Line SH-1  
(1) 53291-26 Rev 0
- r. 45W744-5 Rev 11, 480V Auxiliary Bldg Com MCC C Single Line SH-1  
(1) 53291-27 Rev 0
- s. 2-45W755-2 Rev 0, 480V Reactor Vent BD 2A-A Single Line  
(1) 53296-84 Rev 0
- t. 2-45W755-3 Rev 0, 480V Reactor Vent BD 2B-B Single Line  
(1) 53296-89 Rev 0
- 4. Vendor/Other Diagrams
  - a. 2-45B655-E15A Rev 1, Annunciator Window Box XA-55-15A Engravings  
(1) 52378-241 Rev 0
  - b. 2-45B655-15A Rev 1, Main Control Room Annunciator Inputs Window Box XA-55-15A  
(1) 52378-229 Rev 0
  - c. 08F802403-FD-2855-1 R4, BOP RB FLR/EQ DRAIN SUMP LEVEL
  - d. 08F802403-FD-2855-2 R3, BOP RB FLR/EQ DRAIN SUMP LEVEL
  - e. 08F802403-FD-2855-3 R3, BOP RB FLR/EQ DRAIN SUMP LEVEL

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## 2.2 Developmental References (continued)

### C. Documents

1. 2-TSD-77-3 Rev 3, Station Drainage, Waste Drains, and Collection.
2. 2-TSD-88-5 Rev 2, Containment Isolation System.
3. N3-77C-4001, Rev 10, Liquid Waste Processing System
4. WBN2-77C-4001, Rev 1, Liquid Waste Processing System
5. SOI-77.01 Rev 69, Liquid Waste Disposal

To be verified against 2-SOI-77.01, Liquid Waste Disposal [Later] in Appendix A.

6. SSD-1-LPL-77-125 Rev 10, Reactor Building Floor & Equipment Drain Level

To be verified against SSD-2-LPL-77-125, Reactor Building Floor & Equipment Drain Level [Later] in Appendix A.

7. SSD-1-PI-77-256 Rev 0, Reactor Building Floor and Equipment Drain Sump Pressure

To be verified against SSD-2-PI-77-256, Reactor Building Floor and Equipment Drain Sump Pressure [Later] in Appendix A.

8. SSD-1-PI-77-255 Rev 0, Reactor Building Floor and Equipment Drain Sump Pressure

To be verified against SSD-2-PI-77-255, Reactor Building Floor and Equipment Drain Sump Pressure [Later] in Appendix A.

9. SSD-1-LPL-77-410 Rev 9, Reactor Building Aux Floor and Equip Drain Level

To be verified against SSD-2-LPL-77-410, Reactor Building Aux Floor and Equip Drain Level [Later] in Appendix A.

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### 3.0 PRECAUTIONS AND LIMITATIONS

- A. The Liquid Waste Collection System testing must be coordinated with Unit 1 to mitigate any adverse conditions. When obtaining permission from Unit 1 Supervisor, it is important to note that this test will be putting large amounts of water into common waste disposal sumps (Passive Sump, Auxiliary Building Floor and Equipment Drain Sump, Floor Drain Collector Tank, Tritiated Drain Collector Tank). Make sure that Unit 1 Operations is ready and has available capacity to receive and process water in those sumps.
- B. Ensure there are no adverse effects to the operation of Unit 1 structures, systems, or components.
- C. Standard precautions shall be followed for working around energized electrical equipment in accordance with TVA Safety Procedure 1021.
- D. 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.
- E. Discrepancies between component ID tags and the description in a procedure/instruction do not require a Test Deficiency Notice (TDN) in accordance with SMP-14.0, 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. 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.
- F. All wires removed/lifted from a terminal shall be identified and taped or covered with an insulator to prevent personnel or equipment hazard and possible spurious initiations. The wires should be grouped together and labeled with the work implementing document number that required them to be lifted if left unattended.
- G. All open problems are to be tracked by a corrective action document and entered on the appropriate system punchlist.
- H. Problems identified during the test shall be annotated on the CTL from SMP-9.0 including a description of the problem, the procedure step when/where the problem was identified, corrective action steps taken to resolve the problem, and the number of the corrective action document, if one was required.
- I. Observe all Radiation Protection (RP) requirements when working in or near radiological areas.

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### **3.0 PRECAUTIONS AND LIMITATIONS (continued)**

- J. Safety Related Valves will be stroke timed locally at the valve and remotely at the control switch in both the open and close directions. Local timing begins with the initiation signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.
- K. 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.
- L. If the vibration is determined to be excessive the Test Engineer shall initiate a Test Deficiency Notice (TDN).
- M. Handswitches should be allowed to return to their SPRING RETURN position after a particular instruction unless the step specifically directs to HOLD in place.
- N. Unnecessary drainage into sumps involved in flow path testing should be restricted.
- O. Caution shall be exercised when handling the drain test supply hose to avoid damaging any surrounding equipment.
- P. Equipment shall be operated in accordance with applicable instruction manuals and system operating instructions.
- Q. Entry into the Containment Pit Sump requires a Confined Space Entry permit.
- R. Entry into the Passive Sump requires a Confined Space Entry permit.

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#### 4.0 PREREQUISITE ACTIONS

##### NOTE

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

#### 4.1 Preliminary Actions

- [1] **EVALUATE** open items in Watts Bar Integrated Task Equipment List (WITEL), **AND**  
  
**ENSURE** that they will not adversely affect the test performance and results.
  - A. Subsection 6.1 \_\_\_\_\_
  - B. Subsection 6.2 \_\_\_\_\_
  - C. Subsection 6.3 \_\_\_\_\_
  - D. Subsection 6.4 \_\_\_\_\_
  - E. Subsection 6.5 \_\_\_\_\_
  - F. Subsection 6.6 \_\_\_\_\_
  - G. Subsection 6.7 \_\_\_\_\_
- [2] **ENSURE** changes to the references listed on Appendix A have been reviewed, and determined NOT to adversely affect the test performance. \_\_\_\_\_
- [3] **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 this data package \_\_\_\_\_
- [4] **VERIFY** the test/performance copy of this PTI is the current revision in BSL including any change notices and as needed, each test person assisting in this test has the current revision including any change notices. \_\_\_\_\_

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#### 4.1 Preliminary Actions (continued)

[5] **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 \_\_\_\_\_

[6] **ENSURE** outstanding Design Change Notices (DCN's), Engineering Document Construction Releases (EDCR's) or Temporary Alterations (TA's) do NOT adversely impact testing, **AND**

**ATTACH** documentation of DCN's, EDCR's and TA's that were reviewed to the data package. \_\_\_\_\_

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

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

**RECORD** in Appendix B, Temporary Condition Log if required. \_\_\_\_\_

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

**ATTACH** to this PTI for use during the performance of this PTI. \_\_\_\_\_

[10] **ENSURE** all piping supports required for testing are installed and adjusted as required. \_\_\_\_\_



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Date \_\_\_\_\_

#### 4.1 Preliminary Actions (continued)

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

A. Subsection 6.1

\_\_\_\_\_

B. Subsection 6.2

\_\_\_\_\_

C. Subsection 6.4

\_\_\_\_\_

D. Subsection 6.5

\_\_\_\_\_

E. Subsection 6.7

\_\_\_\_\_

[12] **VERIFY** plant instruments, listed in Appendix C, Permanent Plant Instrumentation Log, are placed in service and are within their calibration interval.

\_\_\_\_\_

[13] **VERIFY** Measuring and Test Equipment (M&TE) required for test performance has been (as required) filled, vented , placed in service and recorded on Measuring and Test Equipment Log (from SMP-9.0).

A. Subsection 6.1

\_\_\_\_\_

B. Subsection 6.2

\_\_\_\_\_

C. Subsection 6.3

\_\_\_\_\_

D. Subsection 6.4

\_\_\_\_\_

E. Subsection 6.5

\_\_\_\_\_

F. Subsection 6.7

\_\_\_\_\_

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#### 4.1 Preliminary Actions (continued)

- [14] **VERIFY** M&TE calibration due dates will support the completion of this test performance.
- 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 \_\_\_\_\_
- [15] **ENSURE** that the Liquid Waste Disposal System is in service to the extent necessary to support performance of this test. \_\_\_\_\_
- [16] **VERIFY** System 55, Annunciator and Sequential Events Recording System applicable terminal block switches are ON, the applicable Master Switches are ON, and window software input(s) are ENABLED for the following Annunciator windows.
- A. 2-XA-55-6F/148C \_\_\_\_\_
  - B. 2-XA-55-15A/159C \_\_\_\_\_
  - C. 2-XA-55-15A/159D \_\_\_\_\_
  - D. 2-XA-55-15A/160C \_\_\_\_\_
  - E. 2-XA-55-15A/160D \_\_\_\_\_
- [17] **ENSURE** the following systems are operational and have been placed in service to the extent necessary to perform this test:
- A. System 32, Control Air. \_\_\_\_\_
  - B. System 55, Annunciator System \_\_\_\_\_
  - C. System 59, Demin Water & Cask Decontamination \_\_\_\_\_
  - D. System 98, Foxboro I/A \_\_\_\_\_

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#### 4.1 Preliminary Actions (continued)

E. System 99, Solid State Protection System. \_\_\_\_\_

F. System 208, Auxiliary Building Common Motor Control. \_\_\_\_\_

G. System 232, Reactor Vent Power. \_\_\_\_\_

H. System 237, 120V AC Instrument Power. \_\_\_\_\_

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

#### NOTE

When conducting the pretest briefing, it is important to note that this test will be putting large amounts of water into common waste disposal sumps (Passive Sump, Auxiliary Building Floor and Equipment Drain Sump, Floor Drain Collector Tank, Tritiated Drain Collector Tank). Make sure that Unit 1 Operations is notified of this and will have available capacity to receive and process water in those sumps.

[19] **CONDUCT** a pretest briefing with Test and Operations personnel in accordance with SMP-9.0. \_\_\_\_\_

[20] **ENSURE** communications are available in areas where testing is to be conducted. \_\_\_\_\_

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

[1] **ENSURE** the following or equivalent are available: \_\_\_\_\_

- Test jumpers with single pole switches (~6)  
(Subsection 6.2-6.4).
- Temporary hoses and valves (Subsection 6.1, 6.7).

[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. 0-60 min. stopwatch (2) ( $\pm 0.1$  sec.) (Subsection 6.3)
- B. Ultrasonic flowmeter (4) ( $\pm 2\%$  of range)  
(Subsection 6.3-6.5)
- C. Pressure gauge (3) 0-250 PSIG (Subsection 6.4-6.5)
- D. Inline flowmeter (1) 10-100 GPM (Subsection 6.1, 6.7)
- E. Digital Multimeter (1) (Subsection 6.2)

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### 4.3 Field Preparations

<p style="text-align: center;"><b>CAUTION</b></p> <p>Follow standard precautions in TVA Safety Procedure 1021 for working around energized electrical equipment during the following step.</p>
--

[1] **LIFT** the following leads, **AND**

**INSTALL** a temporary CLOSED single pole test switch (TS) in the following locations, **AND**

**LABEL** as indicated:

A. **LIFT** white field wire WBT3 from terminal TB610-6, in Solid State Protection System (SSPS) Train A output cabinet 2-R-48 (2-45N2676-4)(EL 708 C8/P). (Subsection 6.3)

\_\_\_\_\_  
1st  
\_\_\_\_\_  
CV

B. **INSTALL** CLOSED test switch TS-1 between terminal TB610-5 and white wire WBT3, lifted in step 4.3[1]A above, SSPS Train A output cabinet 2-R-48, for simulation of Containment Isolation ØA signal to 2-FCV-77-128. (Subsection 6.3)

\_\_\_\_\_  
1st  
\_\_\_\_\_  
CV

C. **LIFT** white field wire WCL5 from terminal TB610-6, in SSPS Train B output cabinet 2-R-51 (2-45N2677-4)(EL 708C8/P). (Subsection 6.3)

\_\_\_\_\_  
1st  
\_\_\_\_\_  
CV

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**4.3 Field Preparations (continued)**

- D. **INSTALL** CLOSED test switch TS-2 between terminal TB610-5 and white wire WCL5, lifted in step 4.3[1]C above, SSPS Train B output cabinet 2-R-51, for simulation of Containment Isolation ØA signal to 2-FCV-77-127. (Subsection 6.3)

\_\_\_\_\_

1st

\_\_\_\_\_

CV
  
- E. **LIFT** white field wire 2AA10 from terminal TB620-6, in SSPS Train A output cabinet 2-R-48. (Subsection 6.2)

\_\_\_\_\_

1st

\_\_\_\_\_

CV
  
- F. **INSTALL** CLOSED test switch TS-3 between terminal TB620-5 and white wire 2AA10, lifted in step 4.3[1]E above, SSPS Train A output cabinet 2-R-48, for simulation of Safety Injection (SI) to Reactor Building Floor and Equipment Drain Sump Pump 2A. (Subsection 6.2)

\_\_\_\_\_

1st

\_\_\_\_\_

CV
  
- G. **LIFT** white field wire 2AB10 from terminal TB620-6, in SSPS Train B output cabinet 2-R-51. (Subsection 6.2)

\_\_\_\_\_

1st

\_\_\_\_\_

CV
  
- H. **INSTALL** CLOSED test switch TS-4 between terminal TB620-5 and white wire 2AB10, lifted in step 4.3[1]G above, SSPS Train B output cabinet 2-R-51, for simulation of SI to Reactor Building Floor and Equipment Drain Sump Pump 2B. (Subsection 6.2)

\_\_\_\_\_

1st

\_\_\_\_\_

CV

[2] **ENSURE** 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP, hatch plug has been removed (RB 702/AZ240).  
Subsection 6.2.

\_\_\_\_\_

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#### 4.3 Field Preparations (continued)

- [3] **ENSURE** the Liquid Waste Collection System is operating in accordance with 2-SOI-77.01, Liquid Waste Disposal. \_\_\_\_\_
- [4] **ENSURE** an M&TE ultrasonic flowmeter has been installed to the sump pumps common discharge piping.
- A. Subsection 6.2.  
M&TE ID# \_\_\_\_\_ \_\_\_\_\_
- B. Subsection 6.4.  
M&TE ID# \_\_\_\_\_ \_\_\_\_\_
- C. Subsection 6.5.  
M&TE ID# \_\_\_\_\_ \_\_\_\_\_
- [5] **ENSURE** an M&TE pressure gauge has been installed downstream of the following valves (Subsection 6.4):
- A. 2-VTV-77-1048  
M&TE ID# \_\_\_\_\_ \_\_\_\_\_
- B. 2-VTV-77-1049  
M&TE ID# \_\_\_\_\_ \_\_\_\_\_
- [6] **ENSURE** that the Reactor Building Floor and Equipment Drain Pumps are secured during the performance of Subsection 6.3 to preclude pump operation in the dead head condition, when the containment isolation valves are CLOSED.
- A. 2-PMP-77-125A \_\_\_\_\_
- B. 2-PMP-77-125B \_\_\_\_\_
- [7] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Containment Spray Pump and Residual Heat Removal Pump rooms Flood Level Drains (Subsection 6.1).
- M&TE ID# \_\_\_\_\_ \_\_\_\_\_

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#### 4.3 Field Preparations (continued)

- [8] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Reactor Building Floor and Equipment Drain Sump Drains (Subsection 6.7).

M&TE ID# \_\_\_\_\_

- [9] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Reactor Building Floor and Equipment Drain Pocket Sump Drains (Subsection 6.7).

M&TE ID# \_\_\_\_\_

- [10] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Passive Sump Drains (Subsection 6.7).

M&TE ID# \_\_\_\_\_

- [11] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Auxiliary Building Floor and Equipment Drain Sump Drains (Subsection 6.7).

M&TE ID# \_\_\_\_\_

- [12] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Additional Equipment Building Floor and Equipment Drain Sump Drains (Subsection 6.7).

M&TE ID# \_\_\_\_\_

- [13] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Floor Drain Collector Tank Drains (Subsection 6.7).

M&TE ID# \_\_\_\_\_



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#### 4.3 Field Preparations (continued)

- [14] **ENSURE** a temporary source of demin water is connected to the M&TE 100 gpm inline flowmeter and the discharge hose(s) is/are available for the Tritiated Drain Collector Tank Drains (Subsection 6.7).

M&TE ID# \_\_\_\_\_

- [15] **ENSURE** temporary equipment is in place to remove water from the Passive Sump.

- [16] **INSTALL** M&TE pressure gauge on discharge of Containment Pit Sump Ejector Pump (Subsection 6.5)

M&TE ID# \_\_\_\_\_

- [17] **OBTAIN** a caution order for the following handswitches that will prevent unauthorized operation of the pumps during testing:

A. 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A  
Caution Tag # \_\_\_\_\_

B. 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B  
Caution Tag # \_\_\_\_\_

C. 2-HS-77-410, POCKET SUMP PMP A  
Caution Tag # \_\_\_\_\_

D. 2-HS-77-411, POCKET SUMP PMP B  
Caution Tag # \_\_\_\_\_

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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.

\_\_\_\_\_  
US/SRO/SM Signature Date

#### NOTE

When obtaining permission from Unit 1 Supervisor, it is important to note that this test will be putting large amounts of water into common waste disposal sumps (Passive Sump, Auxiliary Building Floor and Equipment Drain Sump, Floor Drain Collector Tank, Tritiated Drain Collector Tank). Make sure that Unit 1 Operations is ready and has available capacity to receive and process water in those sumps.

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

\_\_\_\_\_  
US/SRO/SM Signature Date

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## 5.0 ACCEPTANCE CRITERIA

- [1] The Residual Heat Removal (RHR) and Containment Spray (CS) pump room floor drains provide drainage as follows:
  - A. RHR Pump 2A Room floor drain provides  $\geq 50$  gpm of drainage for approximately 4 minutes. (Step 6.1[4])
  - B. RHR Pump 2B Room floor drain provides  $\geq 50$  gpm of drainage for approximately 4 minutes. (Step 6.1[8])
  - C. CS Pump 2A Room floor drain provides  $\geq 50$  gpm of drainage for approximately 4 minutes. (Step 6.1[12])
  - D. CS Pump 2B Room floor drain provides  $\geq 50$  gpm of drainage for approximately 4 minutes. (Step 6.1[16])
- [2] The following valves can be operated from the Main Control Room (MCR). Indicating lights indicate the correct valve position in the MCR:
  - A. 2-FCV-77-127 (Subsection 6.3)
  - B. 2-FCV-77-128 (Subsection 6.3)
- [3] Valve 2-FCV-77-127 can be operated from the Auxiliary Control Room (ACR) (Subsection 6.3)
- [4] Indicating lights indicate the correct valve position in the ACR for valve 2-FCV-77-127 (Subsection 6.3)
- [5] The following valves close on a simulated Phase A Containment Isolation signal:
  - A. 2-FCV-77-127 (Step 6.3[18]).
  - B. 2-FCV-77-128 (Step 6.3[36])
- [6] The following valves remain closed upon reset of a Phase A Containment Isolation Signal:
  - A. 2-FCV-77-127 (Step 6.3[19]).
  - B. 2-FCV-77-128 (Step 6.3[37])

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## 5.0 ACCEPTANCE CRITERIA (continued)

- [7] The Containment Isolation Status Panel Train A or B indicates that each of the following valves close upon receipt of a Phase A Containment Isolation Signal and remain closed upon signal reset:
  - A. 2-FCV-77-127 (Steps 6.3[18] and 6.3[19]).
  - B. 2-FCV-77-128 (Steps 6.3[36] and 6.3[37])
- [8] The measured closing stroke times of the following valves is less than or equal to 10 seconds:
  - A. 2-FCV-77-127 (Steps 6.3[29] and 6.3[30])
  - B. 2-FCV-77-128 (Steps 6.3[47] and 6.3[48])
- [9] The following Containment Isolation Valves fail in the closed position upon a loss of control air:
  - A. 2-FCV-77-127 (Step 6.3[22])
  - B. 2-FCV-77-128 (Step 6.3[40])
- [10] The Reactor Building Floor and Equipment Drain Sump Pumps 2A & 2B control circuits de-energize in response to a simulated SI signal. (Steps 6.2[54]A, 6.2[54]B, 6.2[54]C, 6.2[86]A, 6.2[86]B & 6.2[86]C)
- [11] The Reactor Building Floor and Equipment Drain Sump Pumps direct drainage to the following:
  - A. Floor Drain Collector Tank. (Steps 6.2[144] & 6.2[150])
  - B. Tritiated Drain Collector Tank. (Steps 6.2[121] & 6.2[127])
- [12] Reactor Building Floor and Equipment Drain Pocket Sump Pumps discharge to the Reactor Building Floor and Equipment Drain Sump. (Steps 6.4[25] & 6.4[30])
- [13] Reactor Building Containment Pit Sump Ejector Pump discharges to the Reactor Building Floor and Equipment Drain Pocket Sump. (Step 6.5[8])

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## **5.0 ACCEPTANCE CRITERIA (continued)**

- [14] The following pumps can be operated from the respective hand switch from the local control station:
  - A. Containment Pit Sump Ejector Pump (Subsection 6.5)
  - B. Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B (Subsection 6.2)
- [15] The following pumps can be operated from their respective hand switch from the MCR:
  - A. Reactor Building Floor and Equipment Drain Pocket Sump Pump 2A and 2B (Subsection 6.4)
  - B. Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B (Subsection 6.2)
- [16] Indicating lights indicate correct pump status for the following pumps:
  - A. Containment Pit Sump Ejector Pump (Subsection 6.5)
  - B. Reactor Building Floor and Equipment Drain Pocket Sump Pump 2A and 2B (Subsection 6.4)
  - C. Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B (Subsection 6.2)
- [17] HI and LO level annunciators on MCR panel function correctly for the following sumps:
  - A. Reactor Building Floor and Equipment Drain Pocket Sump Level HI (Steps 6.4[12] and 6.4[15])
  - B. Reactor Building Floor and Equipment Drain Sump Level HI (Steps 6.2[131] and 6.2[134])
  - C. Reactor Building Floor and Equipment Drain Sump Level LO (Steps 6.2[110] and 6.2[113])

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## 5.0 ACCEPTANCE CRITERIA (continued)

- [18] Reactor Building Floor and Equipment Drain Pocket Sump Pump 2A and 2B function as follows:
  - A. Both pumps stop on LO level setpoint.  
(Steps 6.4[27]B and 6.4[32]B)
  - B. All lights respond to their appropriate input signal correctly  
(Subsection 6.4)
- [19] Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B function as follows:
  - A. First pump starts on HI level setpoint with associated handswitch in proper position. (Steps 6.2[36]A, 6.2[40]A, 6.2[68]A, 6.2[72]A)
  - B. Second pump starts on HI-HI level setpoint when first pump running with associated handswitch in proper position. (Steps 6.2[125] and 6.2[148])
  - C. Both pumps stop on LO level setpoint.  
(Steps 6.2[38]B and 6.2[70]B)
  - D. All lights respond to their appropriate input signal correctly  
(Subsection 6.2)
  - E. Pump alternation feature operates correctly.  
(Step 6.2[143])

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## 5.0 ACCEPTANCE CRITERIA (continued)

[20] Each Pump Performs as follows:

- A. Containment Pit Sump Ejector Pump
  - $\geq 10$  gpm at  $\geq 70$  FT TDH (Step 6.5[9])
- B. Reactor Building Floor and Equipment Drain Pocket Sump Pumps
  - $\geq 120$  gpm at  $\geq 40$  FT TDH  
(Steps 6.4[26] and 6.4[31])
- C. Reactor Building Floor and Equipment Drain Sump Pumps
  - $\geq 50$  gpm at  $\geq 70$  FT TDH  
(Steps 6.2[122] and 6.2[145])

[21] The following Station Drainage Water Detector Level switches and associated alarms function as listed below:

Alarms operate on high level.

Indicating lights on local control station and annunciator in MCR indicate high level.

The MCR alarm will not clear when a local indicator panel light clears. The MCR annunciator can only be cleared by operator reset.

Local indicating lights clear when the water level drops below the set point.

- A. 2-LS-40-17, RB AZ182 FLOOD MODE LEVEL.  
(Step 6.6[14]D, 6.6[14]F, 6.6[14]H)
- B. 2-LS-40-18, RB AZ13 FLOOD MODE LEVEL.  
(Step 6.6[15]D, 6.6[15]F, 6.6[15]H)
- C. 2-LS-40-26, CNTMT SPRAY PUMP RM 2B FLOOD MODE LEVEL. (Step 6.6[3]D, 6.6[3]F, 6.6[3]H)
- D. 2-LS-40-27, CNTMT SPRAY PUMP RM 2A FLOOD MODE LEVEL. (Step 6.6[4]D, 6.6[4]F, 6.6[4]H)

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## **5.0 ACCEPTANCE CRITERIA (continued)**

- E. 2-LS-40-28, RHR PUMP RM 2B FLOOD MODE LEVEL. (Step 6.6[5]D, 6.6[5]F, 6.6[5]H)
- F. 2-LS-40-34, U2 PD CHG PMP RM FLOOD MODE LEVEL. (Step 6.6[6]D, 6.6[6]F, 6.6[6]H)
- G. 2-LS-40-35, CHARGING PUMP RM 2B FLOOD MODE LEVEL. (Step 6.6[7]D, 6.6[7]F, 6.6[7]H)
- H. 2-LS-40-36, CHARGING PUMP RM 2A FLOOD MODE LEVEL. (Step 6.6[8]D, 6.6[8]F, 6.6[8]H)
- I. 2-LS-40-37, SAFETY INJ PUMP RM 2B FLOOD MODE LEVEL. (Step 6.6[9]D, 6.6[9]F, 6.6[9]H)
- J. 2-LS-40-38, SAFETY INJ PUMP RM 2A FLOOD MODE LEVEL. (Step 6.6[10]D, 6.6[10]F, 6.6[10]H)
- K. 2-LS-40-48, VOLUME CNTL TNK RM 2A FLOOD MODE LEVEL. (Step 6.6[11]D, 6.6[11]F, 6.6[11]H)
- L. 2-LS-40-49, CVCS SEAL WTR HX RM FLOOD MODE LEVEL. (Step 6.6[12]D, 6.6[12]F, 6.6[12]H)
- M. 2-LS-40-50, CS/RHR HEAT EXCH RM 2B FLOOD MODE LEVEL. (Step 6.6[13]D, 6.6[13]F, 6.6[13]H)



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## 5.0 ACCEPTANCE CRITERIA (continued)

- [22] Drains to Auxiliary Building Floor and Equipment Drain Sump drain at a rate of  $\geq 16.4$  gpm for approximately 4 minutes. (Step 6.7[5])
- [23] Drains to the Passive Sump drain at a rate of  $\geq 16.4$  gpm for approximately 4 minutes. (Step 6.7[4])
- [24] Drains to Reactor Building Floor and Equipment Drain Pocket Sump drain at a rate of  $\geq 16.4$  gpm for approximately 4 minutes. (Step 6.7[3])
- [25] Drains to Reactor Building Floor and Equipment Drain Sump drain at a rate of  $\geq 16.4$  gpm for approximately 4 minutes. (Step 6.7[2])
- [26] Drains to Tritiated Drain Collector Tank drain at a rate of  $\geq 16.4$  gpm for approximately 4 minutes. (Step 6.7[7])
- [27] Drains to Floor Drain Collector Tank drain at a rate of  $\geq 16.4$  gpm for approximately 4 minutes. (Step 6.7[6])

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## 6.0 PERFORMANCE

### 6.1 RHR and Containment Spray Pump Compartment Drain Test

- [1] **VERIFY** all prerequisites listed in Section 4.0 for Subsection 6.1 are complete. \_\_\_\_\_
- [2] **PLACE** a temporary demin water source from the 100 gpm inline flowmeter to the Flood Level Drain in RHR Pump 2A Room (EL 676). \_\_\_\_\_
- [3] **ADJUST** the demin water flowrate to  $\geq 50$  gpm, **THEN**  
**RECORD** flowrate.  
Flow \_\_\_\_\_ gpm ( $\geq 50$  gpm)  
M&TE ID# \_\_\_\_\_
- [4] **VERIFY** that RHR Pump 2A room floor drainage from the room is  $\geq 50$  gpm for approximately 4 minutes. (**ACC CRIT**) \_\_\_\_\_
- [5] **STOP** demin water flow to the RHR Pump 2A Room Flood Level Drain. \_\_\_\_\_
- [6] **PLACE** a temporary demin water source from the 100 gpm inline flowmeter to the Flood Level Drain in RHR Pump 2B Room (EL 676). \_\_\_\_\_
- [7] **ADJUST** the demin water flowrate to  $\geq 50$  gpm, **THEN**  
**RECORD** flowrate.  
Flow \_\_\_\_\_ gpm ( $\geq 50$  gpm)  
M&TE ID# \_\_\_\_\_
- [8] **VERIFY** that RHR Pump 2B room floor drainage from the room is  $\geq 50$  gpm for approximately 4 minutes. (**ACC CRIT**) \_\_\_\_\_
- [9] **STOP** demin water flow to the RHR Pump 2B Room Flood Level Drain. \_\_\_\_\_

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**6.1 RHR and Containment Spray Pump Compartment Drain Test (continued)**

[10] **PLACE** a temporary demin water source from the 100 gpm inline flowmeter to the Flood Level Drain in Containment Spray Pump 2A Room (EL 676). \_\_\_\_\_

[11] **ADJUST** the demin water flowrate to  $\geq 50$  gpm, **THEN**  
**RECORD** flowrate.

Flow \_\_\_\_\_gpm ( $\geq 50$  gpm)

M&TE ID# \_\_\_\_\_

[12] **VERIFY** that Containment Spray Pump 2A room floor drainage from the room is  $\geq 50$  gpm for approximately 4 minutes.  
**(ACC CRIT)** \_\_\_\_\_

[13] **STOP** demin water flow to the Containment Spray Pump 2A Room Flood Level Drain. \_\_\_\_\_

[14] **PLACE** a temporary demin water source from the 100 gpm inline flowmeter to the Flood Level Drain in Containment Spray Pump 2B Room (EL 676). \_\_\_\_\_

[15] **ADJUST** the demin water flowrate to  $\geq 50$  gpm, **THEN**  
**RECORD** flowrate.

Flow \_\_\_\_\_gpm ( $\geq 50$  gpm)

M&TE ID# \_\_\_\_\_

[16] **VERIFY** that Containment Spray Pump 2B room floor drainage from the room is  $\geq 50$  gpm for approximately 4 minutes.  
**(ACC CRIT)** \_\_\_\_\_

[17] **STOP** demin water flow to the Containment Spray Pump 2B Room Flood Level Drain. \_\_\_\_\_

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**6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test**

[1] **VERIFY** all prerequisites for Subsection 6.2 are complete. \_\_\_\_\_

<b>NOTES</b>	
1)	Foxboro I/A workstations will be used to help perform some of the following steps. Ensure Foxboro I/A System Engineer or a qualified individual is available for this portion of the test.
2)	2-LS-77-125G and 2-LS-77-126G (opposite pump) HI-HI level bistable actuation logic are verified during the level transmitter loop calibrations. This test simulates these bistable contact actuations for the purposes of circuit logic and wiring verification. The HI, HI-HI, and LO level bistables are functionally verified during the pump operation test

[2] **ENSURE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, in the STOP/PULL-TO-LOCK position at 2-M-15. \_\_\_\_\_

[3] **ENSURE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, in the STOP/PULL-TO-LOCK position at 2-M-15. \_\_\_\_\_

[4] **PLACE** 480V REACTOR VENT BOARD 2A-A (EL 772 A10/S) Compt. 2A, 2-BKR-77-125A, RB FLR/EQ DRN SUMP PUMP 2A (2-PMP-77-125A), to OFF. \_\_\_\_\_

[5] **REMOVE** the penetration fuses (3) from 480V REACTOR VENT BOARD 2A-A Compt. 2A \_\_\_\_\_

1st

CV

[6] **PLACE** 480V REACTOR VENT BOARD 2B-B (EL 772 A10/S) Compt. 2A, 2-BKR-77-125B, RB FLR/EQ DRN SUMP PUMP 2B (2-PMP-77-125B), to OFF. \_\_\_\_\_

[7] **REMOVE** the penetration fuses (3) from 480V REACTOR VENT BOARD 2B-B Compt. 2A \_\_\_\_\_

1st

CV

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**6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)**

- [8] **ENSURE** W2BOP\_077:2LS0770125E in AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [9] **ENSURE** W2BOP\_077:2LS0770125F in AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [10] **PLACE** W2BOP\_077:2LS0770125A to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [11] **PLACE** W2BOP\_077:2LS0770125B to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [12] **PLACE** W2BOP\_077:2LS0770125D to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [13] **PLACE** W2BOP\_077:2LS0770125G to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [14] **PLACE** W2BOP\_077:2LS0770126A to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

- [15] **PLACE** W2BOP\_077:2LS0770126B to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [16] **PLACE** W2BOP\_077:2LS0770126D to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [17] **PLACE** W2BOP\_077:2LS0770126G to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [18] **PLACE** 480V REACTOR VENT BOARD 2A-A Compt. 2A, 2-BKR-77-125A, RB FLR/EQ DRN SUMP PUMP 2A (2-PMP-77-125A), to ON.

- [19] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the IN/MAN position at 2-M-15.

- [20] **PLACE** 480V REACTOR VENT BOARD 2B-B Compt. 2A, 2-BKR-77-125B, RB FLR/EQ DRN SUMP PUMP 2B (2-PMP-77-125B), to ON.

- [21] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the IN/MAN position at 2-M-15.

### NOTE

If the sump LOW level alarm is actuated in the MCR, water may be added to the sump via temporary makeup water, to clear the alarm.

- [22] **VERIFY** Annunciator Window 159D, RX BLDG F&EQ SUMP LEVEL LO, at 2-XA-55-15A is CLEAR.

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

### NOTE

Steps 6.2[23] through 6.2[59] test Reactor Building Floor and Equipment Drain Sump Pump 2A control circuit.

- [23] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, START pushbutton locally (702/AZ240). \_\_\_\_\_
  - A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is ON. \_\_\_\_\_
  - B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is OFF. \_\_\_\_\_
- [24] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, STOP pushbutton locally (702/AZ240). \_\_\_\_\_
  - A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF. \_\_\_\_\_
  - B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. \_\_\_\_\_
- [25] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the PULL/A-P AUTO position at 2-M-15. \_\_\_\_\_
- [26] **TOGGLE** W2BOP\_077:2LS0770125A to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level start signal. \_\_\_\_\_
  - A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF. \_\_\_\_\_
  - B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. \_\_\_\_\_
- [27] **TOGGLE** W2BOP\_077:2LS0770125A to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level reset signal. \_\_\_\_\_
  - A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS OFF. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS ON. \_\_\_\_\_
- [28] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, START pushbutton locally (702/AZ240). \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON. \_\_\_\_\_
  - B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is OFF. \_\_\_\_\_
- [29] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, STOP pushbutton locally (702/AZ240). \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is OFF. \_\_\_\_\_
  - B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is ON. \_\_\_\_\_
- [30] **OPEN** TS-4, in SSPS Output cabinet 2-R-51, to simulate an SI signal to REAC BLDG FL & EQ DR SMP PUMP B control circuit. \_\_\_\_\_
- [31] **TOGGLE** W2BOP\_077:2LS0770125A to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level start signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF. \_\_\_\_\_
  - B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. \_\_\_\_\_
- [32] **TOGGLE** W2BOP\_077:2LS0770125A to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level reset signal. \_\_\_\_\_
- [33] **CLOSE** TS-4, in SSPS Output cabinet 2-R-51, to simulate an SI reset signal. \_\_\_\_\_



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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

- [34] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, START pushbutton locally (702/AZ240). \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is OFF. \_\_\_\_\_
- [35] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, STOP pushbutton locally (702/AZ240). \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is OFF. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is ON. \_\_\_\_\_
- [36] **TOGGLE** W2BOP\_077:2LS0770125A to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level start signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is ON. (**ACC CRIT**) \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is OFF. \_\_\_\_\_
- [37] **TOGGLE** W2BOP\_077:2LS0770125A to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level reset signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS ON. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS OFF. \_\_\_\_\_
- [38] **TOGGLE** W2BOP\_077:2LS0770125D to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-125D LO level stop signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light OFF. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP  
A, green light ON. (**ACC CRIT**) \_\_\_\_\_
- [39] **TOGGLE** W2BOP\_077:2LS0770125D to the ON position  
using a Foxboro I/A workstation to simulate a 2-LS-77-125D  
LO level reset signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP  
A, red light REMAINS OFF. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP  
A, green light REMAINS ON. \_\_\_\_\_
- [40] **TOGGLE** W2BOP\_077:2LS0770125B to the ON position  
using a Foxboro I/A workstation to simulate a 2-LS-77-125B  
HI-HI level start signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP  
A, red light is ON. (**ACC CRIT**) \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP  
A, green light is OFF. \_\_\_\_\_
- [41] **TOGGLE** W2BOP\_077:2LS0770125B to the OFF position  
using a Foxboro I/A workstation to simulate a 2-LS-77-125B  
HI-HI level reset signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP  
A, red light REMAINS ON. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP  
A, green light REMAINS OFF. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[42] **TOGGLE** W2BOP\_077:2LS0770125D to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125D LO level stop signal.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF.

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON.

[43] **TOGGLE** W2BOP\_077:2LS0770125D to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125D LO level reset signal.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS OFF.

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS ON.

[44] **TOGGLE** W2BOP\_077:2LS0770125G to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125G HI-HI level start signal.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is ON.

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is OFF.

[45] **TOGGLE** W2BOP\_077:2LS0770125G to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-125G HI-HI level reset signal.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS ON.

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS OFF.

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[46] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the IN/MAN position at 2-M-15. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS OFF. \_\_\_\_\_

[47] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the STOP position at 2-M-15. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. \_\_\_\_\_

[48] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, START pushbutton locally (702/AZ240), **AND**

**VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON. \_\_\_\_\_

[49] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, STOP pushbutton locally (702/AZ240), **AND**

**VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is OFF. \_\_\_\_\_

[50] **TOGGLE** W2BOP\_077:2LS0770125A to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level start signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS ON. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[51] **TOGGLE** W2BOP\_077:2LS0770125A to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-125A HI level reset signal.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS OFF.

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS ON.

[52] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the START position at 2-M-15.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is ON.

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is OFF.

[53] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the PULL/A-P AUTO position at 2-M-15.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS ON.

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS OFF.

[54] **OPEN** TS-3, in SSPS Output cabinet 2-R-48, to simulate an SI signal to REAC BLDG FL & EQ DR SMP PUMP A control circuit.

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF. (**ACC CRIT**)

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. (**ACC CRIT**)

C. **VERIFY** Relay 3A, coil is DE-ENERGIZED, by an absence of voltage between 480V REACTOR VENT BOARD 2A-A, Compt. 2 rear section, Terminals 2AA4 and 2AAY. (**ACC CRIT**)

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

- [55] **CLOSE** TS-3, in SSPS Output cabinet 2-R-48, to simulate an SI reset signal to REAC BLDG FL & EQ DR SMP PUMP A control circuit. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light OFF. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. \_\_\_\_\_
- C. **VERIFY** Relay 3A, coil REMAINS DE-ENERGIZED, by an absence of voltage between 480V REACTOR VENT BOARD 2-A-A, Compt. 2 rear section, Terminals 2AA4 and 2AAY. \_\_\_\_\_
- [56] **TOGGLE** W2BOP\_077:2LS0770125G to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-125G HI-HI level start signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light REMAINS OFF. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light REMAINS ON. \_\_\_\_\_
- [57] **TOGGLE** W2BOP\_077:2LS0770125G to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-125G HI-HI level reset signal. \_\_\_\_\_
- [58] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the IN/MAN position at 2-M-15. \_\_\_\_\_
- [59] **VERIFY** Annunciator Window 159D, RX BLDG F&EQ SUMP LEVEL LO, at 2-XA-55-15A is CLEAR. \_\_\_\_\_

### NOTE

Steps 6.2[60] through 6.2[89] test Reactor Building Floor and Equipment Drain Sump Pump 2B control circuit.

- [60] **VERIFY/PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the IN/MAN position at 2-M-15. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[61] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, START pushbutton locally (702/AZ240). \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is OFF. \_\_\_\_\_

[62] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, STOP pushbutton locally (702/AZ240). \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is ON. \_\_\_\_\_

[63] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the PULL/A-P AUTO position at 2-M-15. \_\_\_\_\_

[64] **TOGGLE** W2BOP\_077:2LS0770126A to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126A HI level start signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS ON. \_\_\_\_\_

[65] **TOGGLE** W2BOP\_077:2LS0770126A to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126A HI level reset signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS ON. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[66] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, START pushbutton locally (702/AZ240). \_\_\_\_\_

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is OFF. \_\_\_\_\_

[67] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, STOP pushbutton locally (702/AZ240). \_\_\_\_\_

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. \_\_\_\_\_

[68] **TOGGLE** W2BOP\_077:2LS0770126A to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126A HI level start signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON. (**ACC CRIT**) \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is OFF. \_\_\_\_\_

[69] **TOGGLE** W2BOP\_077:2LS0770126A to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126A HI level reset signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS OFF. \_\_\_\_\_



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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

- [70] **TOGGLE** W2BOP\_077:2LS0770126D to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126D LO level stop signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light OFF. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light ON. (**ACC CRIT**) \_\_\_\_\_
- [71] **TOGGLE** W2BOP\_077:2LS0770126D to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126D LO level reset signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS OFF. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS ON. \_\_\_\_\_
- [72] **TOGGLE** W2BOP\_077:2LS0770126B to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126B HI-HI level start signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON. (**ACC CRIT**) \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is OFF. \_\_\_\_\_
- [73] **TOGGLE** W2BOP\_077:2LS0770126B to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126B HI-HI level reset signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS ON. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS OFF. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[74] **TOGGLE** W2BOP\_077:2LS0770126D to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126D LO level stop signal.

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is OFF.

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is ON.

[75] **TOGGLE** W2BOP\_077:2LS0770126D to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126D LO level reset signal.

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS OFF.

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS ON.

[76] **TOGGLE** W2BOP\_077:2LS0770126G to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126G HI-HI level start signal.

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON.

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is OFF.

[77] **TOGGLE** W2BOP\_077:2LS0770126G to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126G HI-HI level reset signal.

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS ON.

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS OFF.

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**6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)**

[78] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the IN/MAN position at 2-M-15. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS OFF. \_\_\_\_\_

[79] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the STOP position at 2-M-15. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is ON. \_\_\_\_\_

[80] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, START pushbutton locally (702/AZ240) \_\_\_\_\_

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is OFF. \_\_\_\_\_

[81] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, STOP pushbutton locally (702/AZ240) \_\_\_\_\_

A. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, red light is OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, green light is ON. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 51 of 148</b>
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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[82] **TOGGLE** W2BOP\_077:2LS0770126A to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126A HI level start signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS ON. \_\_\_\_\_

[83] **TOGGLE** W2BOP\_077:2LS0770126A to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126A HI level reset signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS OFF. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS ON. \_\_\_\_\_

[84] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the START position at 2-M-15. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is OFF. \_\_\_\_\_

[85] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the PULL/A-P AUTO position at 2-M-15. \_\_\_\_\_

A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS ON. \_\_\_\_\_

B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS OFF. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[86] **OPEN** TS-4, in SSPS Output cabinet 2-R-51, to simulate an SI signal to REAC BLDG FL & EQ DR SMP PUMP B control circuit.

- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light is OFF. (**ACC CRIT**)
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is ON. (**ACC CRIT**)
- C. **VERIFY** Relay 3B, coil is DE-ENERGIZED, by an absence of voltage between 480V REACTOR VENT BOARD 2B-B, Compt. 2 rear section, Terminals 2AB4 and 2ABY. (**ACC CRIT**)

[87] **CLOSE** TS-4, in SSPS Output cabinet 2-R-51, to simulate an SI reset signal to REAC BLDG FL & EQ DR SMP PUMP B control circuit.

- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light OFF.
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light is ON.
- C. **VERIFY** Relay 3B coil REMAINS DE-ENERGIZED, by an absence of voltage between 480V REACTOR VENT BOARD 2B-B (EL 772 A10/S), Compt. 2 rear section, Terminals 2AB4 and 2ABY.

[88] **TOGGLE** W2BOP\_077:2LS0770126G to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-126G HI-HI level start signal.

- A. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, red light REMAINS OFF.
- B. **VERIFY** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, green light REMAINS ON.

[89] **TOGGLE** W2BOP\_077:2LS0770126G to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-126G HI-HI level reset signal.

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

### NOTE

Steps 6.2[90] through 6.2[168] test Reactor Building Floor and Equipment Drain Sump Pumps 2A and 2B pump operation.

[90] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the STOP/PULL-TO-LOCK position at 2-M-15.

\_\_\_\_\_

[91] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the STOP/PULL-TO-LOCK position at 2-M-15.

\_\_\_\_\_

[92] **PLACE** W2BOP\_077:2LS0770125A to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

[93] **PLACE** W2BOP\_077:2LS0770125B to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

[94] **PLACE** W2BOP\_077:2LS0770125D to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

[95] **PLACE** W2BOP\_077:2LS0770125G to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

[96] **PLACE** W2BOP\_077:2LS0770126A to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 54 of 148</b>
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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[97] **PLACE** W2BOP\_077:2LS0770126B to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[98] **PLACE** W2BOP\_077:2LS0770126D to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[99] **PLACE** W2BOP\_077:2LS0770126G to AUTO in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[100] **PLACE** 480V REACTOR VENT BOARD 2A-A Compt. 2A, 2-BKR-77-125A, RB FLR/EQ DRN SUMP PUMP 2A (2-PMP-77-125A), to OFF.

[101] **INSTALL** the penetration fuses (3) at 480V REACTOR VENT BOARD 2A-A Compt. 2A.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[102] **PLACE** 480V REACTOR VENT BOARD 2B-B Compt. 2A, 2-BKR-77-125B, RB FLR/EQ DRN SUMP PUMP 2B (2-PMP-77-125B), to OFF.

[103] **INSTALL** the penetration fuses (3) at 480V REACTOR VENT BOARD 2B-B Compt. 2A.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[104] **PLACE** 480V REACTOR VENT BOARD 2A-A Compt. 2A, 2-BKR-77-125A, RB FLR/EQ DRN SUMP PUMP 2A (2-PMP-77-125A), to ON.

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[105] **PLACE** 480V REACTOR VENT BOARD 2B-B Compt. 2A, 2-BKR-77-125B, RB FLR/EQ DRN SUMP PUMP 2B (2-PMP-77-125B), to ON. \_\_\_\_\_

[106] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the IN/MAN position at 2-M-15. \_\_\_\_\_

[107] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the IN/MAN position at 2-M-15. \_\_\_\_\_

A. **OPEN** 2-ISV-77-908, RB SUMP PUMP DISCH HDR TO TDCT ISOL. \_\_\_\_\_

B. **CLOSE** 2-ISV-77-907, RB SUMP PUMP DISCH HDR TO FDCT ISOL. \_\_\_\_\_

### NOTES

- 1) If the sump LO level alarm is actuated in the MCR, water may be added to the sump via temporary makeup water, to clear the alarm.
- 2) The RB Floor & Equipment Drain Pump(s) may be operated in accordance with 2-SOI-77.01 to ensure the sump level is at the normal LO trip setpoint.

[108] **VERIFY** Annunciator Window 159D, RX BLDG F&EQ SUMP LEVEL LO, at 2-XA-55-15A is CLEAR. \_\_\_\_\_

### NOTE

During the performance of steps 6.2[109] through 6.2[158] visual observation of transient and steady state vibrations is required.

### CAUTION

The following step operates the sump pump until receipt of the sump low level alarm, the sump pump must be stopped immediately upon receipt of the alarm.

[109] **PLACE** and **HOLD** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the START position at 2-M-15. \_\_\_\_\_

A. **VERIFY** locally that 2-PMP-77-125A, RB FLR&EQ DRAIN SUMP PUMP 2A (EL702/AZ242), STARTS. \_\_\_\_\_



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**6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)**

- [110] **VERIFY** Annunciator Window 159D, RX BLDG F&EQ SUMP LEVEL LO, ALARMS at 2-XA-55-15A. (**ACC CRIT**) \_\_\_\_\_
- [111] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the STOP position at 2-M-15. \_\_\_\_\_
  - A. **VERIFY** locally that 2-PMP-77-125A, RB FLR&EQ DRAIN SUMP PUMP 2A, STOPS. \_\_\_\_\_
- [112] **START** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP until Annunciator Window 159D, RB BLDG.FL&EQ SUMP LEVEL LO, is CLEAR at 2-XA-55-15A. \_\_\_\_\_
- [113] **VERIFY** Annunciator Window 159D, RX BLDG F&EQ SUMP LEVEL LO is CLEAR at 2-XA-55-15A. (**ACC CRIT**) \_\_\_\_\_
- [114] **PLACE** Handswitch 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the PULL/A-P AUTO position at 2-M-15. \_\_\_\_\_
- [115] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, START pushbutton locally (702/AZ240). \_\_\_\_\_
  - A. **VERIFY** locally that 2-PMP-77-125B, RB FLR&EQ DRAIN SUMP PUMP 2B, STARTS (EL702/AZ242). \_\_\_\_\_
- [116] **PRESS** 2-HS-77-125B2, RB FLR/EQ DRAIN SUMP PUMP 2B, STOP pushbutton locally (702/AZ240). \_\_\_\_\_
  - A. **VERIFY** locally that 2-PMP-77-125B, RB FLR&EQ DRAIN SUMP PUMP 2B, STOPS (EL702/AZ242). \_\_\_\_\_
- [117] **PLACE** Handswitch 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the PULL/A-P AUTO position at 2-M-15. \_\_\_\_\_
- [118] **VERIFY** Annunciator Window 159C, RB BLDG.FL&EQ SUMP LEVEL HI, is CLEAR at 2-XA-55-15A. \_\_\_\_\_
- [119] **BEGIN ADDING** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP. \_\_\_\_\_
- [120] **VERIFY** 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A, STARTS by 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, light indication at 2-M-15. \_\_\_\_\_

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**6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)**

[121] **VERIFY** 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A, DISCHARGES to the TDCT by flow indication at M&TE flowmeter (EL702/AZ242) (**ACC CRIT**). \_\_\_\_\_

A. **RECORD** sump level from 2-LT-77-125. \_\_\_\_\_

\_\_\_\_\_ in \_\_\_\_\_

B. **RECORD** flow for 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A from M&TE flowmeter.

FLOW: \_\_\_\_\_ GPM

M&TE ID#: \_\_\_\_\_

C. **RECORD** the discharge pressure for 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A from 2-PI-77-256.

\_\_\_\_\_ PSIG \_\_\_\_\_

**NOTE**

At test director's discretion, step 6.2[122] may be completed at a later time to minimize the amount of time spent field testing.

[122] **COMPLETE** Appendix D \_\_\_\_\_

[122.1] **VERIFY** adjusted flowrate from Appendix D for 2-PMP-77-125A is  $\geq 50$  gpm. (**ACC CRIT**) \_\_\_\_\_

[122.2] **VERIFY** adjusted TDH from Appendix D for 2-PMP-77-125A is  $\geq 70$  FT. (**ACC CRIT**) \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

### NOTE

The throttled position of 2-ISV-77-902A and 2-ISV-77-902B may be adjusted as required, during the following pump operation logic testing. The pump should not be dead headed unless TD instructs to do so.

[123] **THROTTLE CLOSE** 2-ISV-77-902A, RB FLR/EQ DRN SUMP PUMP 2A DISCH ISOL (EL702/AZ250), to restrict Pump A effluent flowrate to obtain Pump B start signal at HI-HI level. \_\_\_\_\_

[124] **CONTINUE ADDING** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP to obtain 2B sump pump start signal. \_\_\_\_\_

[125] **VERIFY** 2-PMP-77-125B RB FLR/EQ DRAIN SUMP PUMP 2B, STARTS by 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, light indication at 2-M-15. (**ACC CRIT**) \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

### CAUTION

The following step places the RB FLR/EQ DRAIN SUMP PUMP 2A in a shutoff head condition. This is required to obtain the B pump flowrate. Steps 6.2[126] through 6.2[128] should be completed expeditiously to minimize time at shutoff.

[126] **CLOSE** 2-ISV-77-902A, RB FLR/EQ DRAIN SUMP PUMP 2A DISCH ISOL. \_\_\_\_\_

[127] **VERIFY** 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B, DISCHARGES to the TDCT by flow indication at M&TE flowmeter. (**ACC CRIT**) \_\_\_\_\_

A. **RECORD** flow for 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B from M&TE flowmeter.

FLOW: \_\_\_\_\_ GPM

M&TE ID#: \_\_\_\_\_

[128] **THROTTLE OPEN** 2-ISV-77-902A, RB FLR/EQ DRN SUMP PUMP 2A DISCH ISOL. \_\_\_\_\_

[129] **THROTTLE CLOSE** 2-ISV-77-902B, RB FLR/EQ DRN SUMP PUMP 2B DISCH ISOL (EL702/AZ250), to restrict Pump B effluent flowrate to obtain the HI level annunciator alarm. \_\_\_\_\_

[130] **CONTINUE ADDING** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP, until HI level alarm actuation. \_\_\_\_\_

[131] **VERIFY** Annunciator Window 159C, RB BLDG.FL&EQ SUMP LEVEL HI, ALARMS at 2-XA-55-15A. (**ACC CRIT**) \_\_\_\_\_

[132] **OPEN** 2-ISV-77-902A, RB FLR/EQ DRN SUMP PUMP 2A DISCH ISOL. \_\_\_\_\_

[133] **OPEN** 2-ISV-77-902B, RB FLR/EQ DRN SUMP PUMP 2B DISCH ISOL. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

- [134] **VERIFY** Annunciator Window 159C, RB BLDG.FL&EQ SUMP LEVEL HI, is CLEAR at 2-XA-55-15A. (**ACC CRIT**) \_\_\_\_\_

### NOTE

The order 2A and 2B sump pumps will trip off, at low sump level, is based on 2-LT-77-125, and 2-LT-77-126 calibration setpoints, respectively. Step 6.2[136] and 6.2[137] may be signed as they occur.

- [135] **VERIFY** Annunciator Window 159D, RB BLDG.FL&EQ SUMP LEVEL LO, ALARMS at 2-XA-55-15A. \_\_\_\_\_

- [136] **VERIFY** 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A, STOPS by 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, light indication at 2-M-15. \_\_\_\_\_

- [137] **VERIFY** 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B, STOPS by 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, light indication at 2-M-15. \_\_\_\_\_

- [138] **OPEN** 2-ISV-77-907, RB SUMP PUMP DISCH HDR TO FDCT ISOL. \_\_\_\_\_

- [139] **CLOSE** 2-ISV-77-908, RB SUMP PUMP DISCH HDR TO TDCT ISOL. \_\_\_\_\_

- [140] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, START pushbutton locally (702/AZ240). \_\_\_\_\_

- A. **VERIFY** locally that 2-PMP-77-125A, RB FLR&EQ DRAIN SUMP PUMP 2A (EL702/AZ242), STARTS. \_\_\_\_\_

- [141] **PRESS** 2-HS-77-125A2, RB FLR/EQ DRAIN SUMP PUMP 2A, STOP pushbutton locally (702/AZ240). \_\_\_\_\_

- A. **VERIFY** locally that 2-PMP-77-125A, RB FLR&EQ DRAIN SUMP PUMP 2A (EL702/AZ242), STOPS. \_\_\_\_\_

- [142] **BEGIN ADDING** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP to raise sump level for alternation start of sump pumps. \_\_\_\_\_

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**6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)**

[143] **VERIFY** 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B STARTS by 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, light indication at 2-M-15. (**ACC CRIT**) \_\_\_\_\_

[144] **VERIFY** 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B, DISCHARGES effluent to the FDCT by flow indication at M&TE flowmeter. (**ACC CRIT**) \_\_\_\_\_

A. **RECORD** sump level from 2-LT-77-125.

\_\_\_\_\_ in \_\_\_\_\_

B. **RECORD** flow for 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B from M&TE flowmeter.

FLOW: \_\_\_\_\_ GPM

M&TE ID#: \_\_\_\_\_

C. **RECORD** the discharge pressure for 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B from 2-PI-77-255.

\_\_\_\_\_ PSIG \_\_\_\_\_

**NOTE**

At test director's discretion, step 6.2[145] may be completed at a later time to minimize the amount of time spent field testing.

[145] **COMPLETE** Appendix E \_\_\_\_\_

[145.1] **VERIFY** adjusted flowrate from Appendix E for 2-PMP-77-125B is  $\geq 50$  gpm. (**ACC CRIT**) \_\_\_\_\_

[145.2] **VERIFY** adjusted TDH from Appendix E for 2-PMP-77-125B is  $\geq 70$  FT. (**ACC CRIT**) \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

### NOTE

The throttled position of 2-ISV-77-902A and 2-ISV-77-902B may be adjusted as required, during the following pump operation logic testing. The pump should not be dead headed unless TD instructs to do so.

[146] **THROTTLE CLOSE** 2-ISV-77-902B, RB FLR/EQ DRN SUMP PUMP 2B DISCH ISOL, to restrict Pump B effluent flowrate to obtain Pump A start signal at HI-HI level. \_\_\_\_\_

[147] **CONTINUE ADDING** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP to obtain sump pump HI-HI level start signal. \_\_\_\_\_

[148] **VERIFY** 2-PMP-77-125A RB FLR/EQ DRAIN SUMP PUMP 2A, STARTS by 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, light indication at 2-M-15. (**ACC CRIT**) \_\_\_\_\_

### CAUTION

The following step places the RB FLR/EQ DRAIN SUMP PUMP 2B in a shutoff head condition. This is required to obtain the A pump flowrate. Steps 6.2[149] through 6.2[151]A should be completed expeditiously to minimize time at shutoff.

[149] **CLOSE** 2-ISV-77-902B, RB FLR/EQ DRAIN SUMP PUMP 2B DISCH ISOL. \_\_\_\_\_

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[150] **VERIFY** 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A, DISCHARGES to the FDCT by flow indication at M&TE flowmeter. (**ACC CRIT**) \_\_\_\_\_

[151] **RECORD** flow for 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A from M&TE flowmeter.

FLOW: \_\_\_\_\_ GPM

M&TE ID#: \_\_\_\_\_

A. **OPEN** 2-ISV-77-902B, RB FLR/EQ DRN SUMP PUMP 2B DISCH ISOL. \_\_\_\_\_

[152] **THROTTLE CLOSE** 2-ISV-77-902A, RB FLR/EQ DRN SUMP PUMP 2A DISCH ISOL, to restrict Pump A effluent flowrate to obtain the HI level annunciator alarm. \_\_\_\_\_

[153] **CONTINUE ADDING** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP, until HI level alarm actuation. \_\_\_\_\_

[154] **VERIFY** Annunciator Window 159C, RB BLDG.FL&EQ SUMP LEVEL HI, ALARMS at 2-XA-55-15A. \_\_\_\_\_

[155] **OPEN** 2-ISV-77-902A, RB FLR/EQ DRN SUMP PUMP 2A DISCH ISOL. \_\_\_\_\_

[156] **VERIFY** Annunciator Window 159C, RB BLDG.FL&EQ SUMP LEVEL HI, is CLEAR at 2-XA-55-15A. \_\_\_\_\_

### NOTE

The order 2A and 2B sump pumps will trip off, at low sump level, is based on 2-LT-77-125, and 2-LT-77-126 calibration setpoints, respectively. Step 6.2[157] and 6.2[158] may be signed as they occur.

[157] **VERIFY** 2-PMP-77-125B, RB FLR/EQ DRAIN SUMP PUMP 2B, STOPS by 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, light indication at 2-M-15. \_\_\_\_\_



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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[158] **VERIFY** 2-PMP-77-125A, RB FLR/EQ DRAIN SUMP PUMP 2A, STOPS by 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, light indication at 2-M-15.

\_\_\_\_\_

[159] **STOP** temporary makeup water to 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP.

\_\_\_\_\_

[160] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the STOP/PULL-TO-LOCK position at 2-M-15.

\_\_\_\_\_

[161] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the STOP/PULL-TO-LOCK position at 2-M-15.

\_\_\_\_\_

[162] **PLACE** 480V REACTOR VENT BOARD 2A-A Compt. 2A, 2-BKR-77-125A, RB FLR/EQ DRN SUMP PUMP 2A (2-PMP-77-125A), to OFF.

\_\_\_\_\_

[163] **PLACE** 480V REACTOR VENT BOARD 2B-B Compt. 2A, 2-BKR-77-125B, RB FLR/EQ DRN SUMP PUMP 2B (2-PMP-77-125B), to OFF.

\_\_\_\_\_

[164] **REMOVE** CLOSED test switch TS-3 between terminal TB620-5 and white wire 2AA10, in SSPS Train A output cabinet 2-R-48.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

[165] **LAND** white field wire 2AA10 from terminal TB620-6, in SSPS Train A output cabinet 2-R-48.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

[166] **REMOVE** CLOSED test switch TS-4 between terminal TB620-5 and white wire 2AB10, in SSPS Train B output cabinet 2-R-51.

\_\_\_\_\_

1st

\_\_\_\_\_

CV

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## 6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)

[167] **LAND** white field wire 2AB10 from terminal TB620-6, in SSPS Train B output cabinet 2-R-51.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

### NOTE

Consult with Operations before performing steps 6.2[168] and 6.2[169]. Steps may be marked "N/A" if Operations require one or both valves to remain open following testing.

[168] **CLOSE** 2-ISV-77-907, RB SUMP PUMP DISCH TO FDCT ISOL (EL713/A11W).

[169] **CLOSE** 2-ISV-77-908, RB SUMP PUMP DISCH TO TDCT ISOL (EL713/A11W).

[170] **PLACE** 480V REACTOR VENT BOARD 2A-A Compt. 2A, 2-BKR-77-125A, RB FLR/EQ DRN SUMP PUMP 2A (2-PMP-77-125A), to ON.

[171] **PLACE** 480V REACTOR VENT BOARD 2B-B Compt. 2A, 2-BKR-77-125B, RB FLR/EQ DRN SUMP PUMP 2B (2-PMP-77-125B), to ON.

[172] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to START, at 2-M-15 (Re-energizes 3A relay).

[173] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to STOP at 2-M-15.

[174] **PLACE** 2-HS-77-125A1, RX BLDG F & EQ SUMP PMP A, to the PULL/A-P AUTO position at 2-M-15.

[175] **PLACE** 2-HS-77-125B1, RX BLDG F & EQ SUMP PMP B, to the PULL/A-P AUTO position at 2-M-15.

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**6.2 Reactor Building Floor and Equipment Drain Sump Pump 2A and 2B Logic and Operational Test (continued)**

[176] **REMOVE** M&TE flowmeter from common discharge piping of RB Floor and Equipment Drain Pumps.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

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

[178] **VERIFY** the successful completion of this Subsection 6.2 (ACC CRIT )

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### 6.3 Containment Sump Pump Discharge Valve Logic Test

- [1] **VERIFY** all prerequisites for Subsection 6.3 are complete. \_\_\_\_\_
- [2] **ENSURE** 2-XS-77-127, RX BLDG F & EQ SUMP TO TDCT, in the NOR position on 2-L-11B (U2 Aux Control Room). \_\_\_\_\_
- [3] **ENSURE** 2-HS-77-127C, RX BLDG F&E SUMP to TDCT, in the CLOSE position at 2-L-10 (U2 Aux Control Room). \_\_\_\_\_
- [4] **ENSURE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, in the CLOSE position at 2-M-15, **AND**  
**VERIFY:**
  - A. Red light OFF at 2-HS-77-127A. \_\_\_\_\_
  - B. Green light ON at 2-HS-77-127A. \_\_\_\_\_
  - C. Red light OFF at Containment Isolation Status Panel (CISP) 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_
  - D. Green light ON at CISP 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_
  - E. By local verification at 2-FCV-77-127, RB SUMP DISCHARGE FLOW CONTROL is CLOSED (716/AZ293). \_\_\_\_\_
- [5] **PLACE** 2-HS-77-127C, RX BLDG F&E SUMP to TDCT, to the OPEN position at 2-L-10, **AND**  
**VERIFY** 2-FCV-77-127 REMAINS CLOSED by light indication on 2-HS-77-127A at 2-M-15. \_\_\_\_\_
- [6] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, to the OPEN position until 2-FCV-77-127 is FULLY OPEN, **THEN RELEASE**. \_\_\_\_\_

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**6.3 Containment Sump Pump Discharge Valve Logic Test  
(continued)**

- [7] **VERIFY** the following indications for 2-FCV-77-127 :
- A. Red light ON at 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT. \_\_\_\_\_
  - B. Green light OFF at 2-HS-77-127A. \_\_\_\_\_
  - C. Red light ON at CISP 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_
  - D. Green light OFF at CISP 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_
  - E. By local verification at 2-FCV-77-127, RB SUMP DISCHARGE FLOW CONTROL is OPEN (716/AZ293). \_\_\_\_\_
- [8] **PLACE** 2-HS-77-127C, RX BLDG F&E SUMP to TDCT, to the CLOSE position at 2-L-10, **AND**
- VERIFY** 2-FCV-77-127 REMAINS OPEN by light indication on 2-HS-77-127A at 2-M-15. \_\_\_\_\_
- [9] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, to the CLOSE position. \_\_\_\_\_
- [10] **ENSURE** Annunciator 2-XA-55-6F Window 148C, ACR PNL 2-L-11B, at 2-M-6 is CLEAR. \_\_\_\_\_
- [11] **VERIFY** the light status at 2-HS-77-127C, RX BLDG F&E SUMP TO TDCT, on 2-L-10:
- A. Red light OFF. \_\_\_\_\_
  - B. Green light OFF. \_\_\_\_\_

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### 6.3 Containment Sump Pump Discharge Valve Logic Test (continued)

[12] **PLACE** 2-XS-77-127, RX BLDG F & EQ SUMP TO TDCT, to the AUX position on 2-L-11B, **AND**

**VERIFY:**

- A. Red Light OFF at 2-HS-77-127C, RB F&E SUMP TO TDCT. \_\_\_\_\_
- B. Green Light ON at 2-HS-77-127C. \_\_\_\_\_
- C. Red Light OFF at 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT. \_\_\_\_\_
- D. Green Light OFF at 2-HS-77-127A. \_\_\_\_\_
- E. Red light OFF at CISP 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_
- F. Green light OFF at CISP 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_
- G. Annunciator 2-XA-55-6F Window 148C, ACR PNL 2-L-11B, at 2-M-6 ALARMS. \_\_\_\_\_

[13] **PLACE** 2-HS-77-127C, RX BLDG F&E SUMP to TDCT, to the OPEN position at 2-L-10, **AND**

**VERIFY:**

- A. Red light ON (2-HS-77-127C). \_\_\_\_\_
- B. Green light OFF (2-HS-77-127C). \_\_\_\_\_
- C. 2-FCV-77-127 is OPEN (local). \_\_\_\_\_

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### 6.3 Containment Sump Pump Discharge Valve Logic Test (continued)

- [14] **PLACE** 2-HS-77-127C, RX BLDG F&E SUMP to TDCT, to the CLOSE position at 2-L-10, **AND**

**VERIFY:**

A. Red light OFF (2-HS-77-127C). \_\_\_\_\_

B. Green light ON (2-HS-77-127C). \_\_\_\_\_

C. 2-FCV-77-127 is CLOSED (local). \_\_\_\_\_

- [15] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, to the OPEN position **AND**

**VERIFY** 2-FCV-77-127 REMAINS CLOSED (local). \_\_\_\_\_

- [16] **PLACE** 2-XS-77-127, RX BLDG F & EQ SUMP TO TDCT, to the NORMAL position on 2-L-11B, **AND**

**VERIFY:**

A. Red Light OFF at 2-HS-77-127C, RB F&E SUMP TO TDCT. \_\_\_\_\_

B. Green Light OFF at 2-HS-77-127C. \_\_\_\_\_

C. Red Light OFF at 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT. \_\_\_\_\_

D. Green Light ON at 2-HS-77-127A. \_\_\_\_\_

E. Red light OFF at CISP 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_

F. Green light ON at CISP 2-XX-55-6F, Window 106, FCV-77-127. \_\_\_\_\_

G. Annunciator 2-XA-55-6F Window 148C, ACR PNL 2-L-11B, at 2-M-6 CLEARS. \_\_\_\_\_

- [17] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, to the OPEN position, **AND**

**VERIFY** 2-FCV-77-127 is FULLY OPEN. \_\_\_\_\_

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### 6.3 Containment Sump Pump Discharge Valve Logic Test (continued)

#### NOTE

Steps 6.3[18] and 6.3[19] will verify that 2-FCV-77-127 closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

- [18] **PLACE** Test Switch TS-2 in SSPS Train B Output Cabinet, 2-R-51 to the OPEN position, **AND**

#### VERIFY:

- A. Red light OFF at CISP 2-XX-55-6F, Window 106, FCV-77-127 (**ACC CRIT**). \_\_\_\_\_
- B. Green light ON at CISP 2-XX-55-6F, Window 106, FCV-77-127 (**ACC CRIT**). \_\_\_\_\_
- C. 2-FCV-77-127 CLOSES by light indication at 2-M-15. (**ACC CRIT**) \_\_\_\_\_

- [19] **PLACE** Test Switch TS-2 to the CLOSED position, **AND**

#### VERIFY:

- A. Red light OFF at CISP 2-XX-55-6F, Window 106, FCV-77-127 (**ACC CRIT**). \_\_\_\_\_
- B. Green light ON at CISP 2-XX-55-6F, Window 106, FCV-77-127 (**ACC CRIT**). \_\_\_\_\_
- C. 2-FCV-77-127 REMAINS CLOSED by light indication at 2-M-15. (**ACC CRIT**) \_\_\_\_\_

- [20] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, to the OPEN position, **AND**

**VERIFY** 2-FCV-77-127 is FULLY OPEN. \_\_\_\_\_

- [21] **CLOSE** 2-ISV-32-3518, CONTROL AIR ISOLATION VALVE TO 2-FCV-77-127 (EL716/AZ296). \_\_\_\_\_



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**6.3 Containment Sump Pump Discharge Valve Logic Test  
(continued)**

[22] **VENT** control air at Pressure Regulator 2-PREG-77-127,  
CONTROL AIR REG FOR 2-FCV-77-127, **AND**

**VERIFY** 2-FCV-127 CLOSES (Locally) (**ACC CRIT**). \_\_\_\_\_

[23] **CLOSE** the vent at Pressure Regulator 2-PREG-77-127. \_\_\_\_\_

[24] **OPEN** 2-ISV-32-3518, CONTROL AIR ISOLATION VALVE TO  
2-FCV-77-127. \_\_\_\_\_

**NOTES**

- 1) The following steps require valve stroke timing locally at the valve and remotely at the control switch in both the open and closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.

[25] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT  
CIV-ØA IN CNTMT, to the OPEN position until 2-FCV-77-127  
is FULLY OPEN. \_\_\_\_\_

[26] **RECORD** remote opening time at 2-HS-77-127A, RB FL&EQ  
SUMP PMPS TO TDCT CIV-ØA IN CNTMT

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

\_\_\_\_\_ seconds

[27] **RECORD** local opening time at 2-FCV-77-127, RB SUMP  
DISCHARGE FLOW CONTROL.

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

\_\_\_\_\_ seconds

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**6.3 Containment Sump Pump Discharge Valve Logic Test  
(continued)**

[28] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, to the CLOSE position. \_\_\_\_\_

[29] **RECORD** remote closing time at 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT. (**ACC CRIT**)

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

\_\_\_\_\_ seconds (≤ 10 seconds)

[30] **RECORD** local closing time at 2-FCV-77-127, RB SUMP DISCHARGE FLOW CONTROL. (**ACC CRIT**)

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

\_\_\_\_\_ seconds (≤ 10 seconds)

[31] **REMOVE** CLOSED Test Switch TS-2 between Terminal TB610-5 and white field wire WCL5 in SSPS Train B Output Cabinet 2-R-51.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[32] **LAND** white field wire WCL5 on Terminal TB610-6 in SSPS Train B Output Cabinet 2-R-51.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 74 of 148</b>
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Date \_\_\_\_\_

### 6.3 Containment Sump Pump Discharge Valve Logic Test (continued)

- [33] **ENSURE** 2-HS-77-128A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, in the CLOSE position at 2-M-15, **AND**

**VERIFY:**

- A. Red light OFF at 2-HS-77-128A. \_\_\_\_\_
- B. Green light ON at 2-HS-77-128A. \_\_\_\_\_
- C. Red light OFF at CISP 2-XX-55-6E, Window 106, FCV-77-128. \_\_\_\_\_
- D. Green light ON at CISP 2-XX-55-6E, Window 106, FCV-77-128. \_\_\_\_\_
- E. By local verification at 2-FCV-77-128, RB SUMP DISCHARGE FLOW CONTROL is CLOSED (713/A12W). \_\_\_\_\_

- [34] **PLACE** 2-HS-77-128A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA OUT CNTMT, to the OPEN position until 2-FCV-77-128 is FULLY OPEN, **THEN**

**RELEASE.**

- [35] **VERIFY** the following indications for 2-HS-77-128A:

- A. Red light ON at 2-HS-77-128A. \_\_\_\_\_
- B. Green light OFF at 2-HS-77-128A. \_\_\_\_\_
- C. Red light ON at CISP 2-XX-55-6E, Window 106, FCV-77-128. \_\_\_\_\_
- D. Green light OFF at CISP 2-XX-55-6E, Window 106, FCV-77-128. \_\_\_\_\_
- E. By local verification at 2-FCV-77-128, RB SUMP DISCHARGE FLOW CONTROL is OPEN (713/A12W). \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 75 of 148</b>
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Date \_\_\_\_\_

### 6.3 Containment Sump Pump Discharge Valve Logic Test (continued)

#### NOTE

Steps 6.3[36] and 6.3[37] will verify that 2-FCV-77-128 closes on a simulated Phase A Containment Isolation Signal and stays closed upon resetting the signal.

- [36] **PLACE** Test Switch TS-1 in SSPS Train A Output Cabinet, 2-R-48 to the OPEN position, **AND**

#### VERIFY:

- A. Red light OFF at CISP 2-XX-55-6E, Window 106, FCV-77-128 (**ACC CRIT**). \_\_\_\_\_
- B. Green light ON at CISP 2-XX-55-6E, Window 106, FCV-77-128 (**ACC CRIT**). \_\_\_\_\_
- C. 2-FCV-77-128 CLOSES by light indication at 2-M-15. (**ACC CRIT**) \_\_\_\_\_

- [37] **PLACE** Test Switch TS-1 to the CLOSED position, 2-R-48, **AND**

#### VERIFY:

- A. Red light OFF at CISP 2-XX-55-6E, Window 106, FCV-77-128 (**ACC CRIT**). \_\_\_\_\_
- B. Green light ON at CISP 2-XX-55-6E, Window 106, FCV-77-128 (**ACC CRIT**). \_\_\_\_\_
- C. 2-FCV-77-128 REMAINS CLOSED by light indication at 2-M-15 (**ACC CRIT**). \_\_\_\_\_

- [38] **PLACE** 2-HS-77-128A, RB FL&EQ SUMP PMPS TO TDCT CIV-ØA IN CNTMT, to the OPEN position, **AND**

**VERIFY** 2-FCV-77-128 is FULLY OPEN. \_\_\_\_\_

- [39] **CLOSE** 2-ISV-32-3180, CONTROL AIR ISOLATION VALVE TO 2-FCV-77-128. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 76 of 148</b>
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Date \_\_\_\_\_

### 6.3 Containment Sump Pump Discharge Valve Logic Test (continued)

[40] **VENT** control air at Pressure Regulator 2-PREG-77-128,  
CONTROL AIR REG FOR 2-FCV-77-128, **AND**

**VERIFY** 2-FCV-128 CLOSSES (Locally) (**ACC CRIT**). \_\_\_\_\_

[41] **CLOSE** the vent at Pressure Regulator 2-PREG-77-128. \_\_\_\_\_

[42] **OPEN** 2-ISV-32-3180, CONTROL AIR ISOLATION VALVE TO  
2-FCV-77-128. \_\_\_\_\_

#### NOTES

- 1) The following steps require valve stroke timing locally at the valve and remotely at the control switch in both the open and closed positions.
- 2) Local timing begins with the initiating signal and is concluded with the completion of valve stem movement. Remote timing begins with the initiating signal and is concluded with the position indication lights status change. Stroke time acceptance criteria will be based on the movement to the safety function final position of the valve.

[43] **PLACE** 2-HS-77-128A, RB FL&EQ SUMP PMPS TO TDCT  
CIV-ØA IN CNTMT, to the OPEN position until 2-FCV-77-128  
is FULLY OPEN. \_\_\_\_\_

[44] **RECORD** remote opening time at 2-HS-77-128A, RB FL&EQ  
SUMP PMPS TO TDCT CIV-ØA IN CNTMT.

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

\_\_\_\_\_ seconds

[45] **RECORD** local opening time at 2-FCV-77-128, RB SUMP  
DISCHARGE FLOW CONTROL.

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_

\_\_\_\_\_ seconds

[46] **PLACE** 2-HS-77-128A, RB FL&EQ SUMP PMPS TO TDCT  
CIV-ØA IN CNTMT, to the CLOSE position. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 77 of 148</b>
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Date \_\_\_\_\_

### 6.3 Containment Sump Pump Discharge Valve Logic Test (continued)

- [47] **RECORD** remote closing time at 2-HS-77-128A, RB FL&EQ  
SUMP PMPS TO TDCT CIV-ØA IN CNTMT. (**ACC CRIT**)

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_  
\_\_\_\_\_ seconds (≤ 10 seconds)  
\_\_\_\_\_

- [48] **RECORD** local closing time at 2-FCV-77-128, RB SUMP  
DISCHARGE FLOW CONTROL. (**ACC CRIT**)

M&TE \_\_\_\_\_ Cal Due Date \_\_\_\_\_  
\_\_\_\_\_ seconds (≤ 10 seconds)  
\_\_\_\_\_

- [49] **REMOVE** CLOSED Test Switch TS-1 between Terminal  
TB610-5 and white field wire WBT3 in SSPS Train A Output  
Cabinet 2-R-48.

\_\_\_\_\_  
1st  
\_\_\_\_\_  
CV

- [50] **LAND** white field wire WBT3 on Terminal TB610-6, in SSPS  
Train A Output Cabinet 2-R-48.

\_\_\_\_\_  
1st  
\_\_\_\_\_  
CV

- [51] **PLACE** 2-HS-77-127A, RB FL&EQ SUMP PMPS TO TDCT  
CIV-ØA OUT CNTMT, to the OPEN position until  
2-FCV-77-127 is FULLY OPEN.

\_\_\_\_\_

- [52] **PLACE** 2-HS-77-128A, RB FL&EQ SUMP PMPS TO TDCT  
CIV-ØA OUT CNTMT, to the OPEN position until  
2-FCV-77-128 is FULLY OPEN.

\_\_\_\_\_

- [53] **VERIFY** the successful completion of this Subsection 6.3  
(**ACC CRIT**).

\_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 78 of 148</b>
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Date \_\_\_\_\_

#### 6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump 2A and 2B Logic and Operation Test

- [1] **VERIFY** all prerequisites for Subsection 6.4 are complete. \_\_\_\_\_

##### NOTES

- 1) Foxboro I/A workstations will be used to help perform some of the following steps. Ensure Foxboro I/A System Engineer or a qualified individual is available for this portion of the test.
- 2) The RB Floor and Equipment Drain Pocket Sump Pumps may be operated in accordance with 2-SOI-77.01 to ensure the sump level is at the normal LO trip setpoint.

- [2] **ENSURE** the following for POCKET SUMP PMP 2A on  
handswitch 2-HS-77-410 at 2-M-15:

- A. Green Light ON \_\_\_\_\_
- B. Red Light OFF \_\_\_\_\_

- [3] **ENSURE** the following for POCKET SUMP PMP 2B on  
handswitch 2-HS-77-411 at 2-M-15:

- A. Green Light ON \_\_\_\_\_
- B. Red Light OFF \_\_\_\_\_

- [4] **VERIFY** Annunciator Window 160C, RX BLDG POCKET  
SUMP LEVEL HI, at 2-XA-55-15A, is CLEAR. \_\_\_\_\_

- [5] **PLACE** W2BOP\_077:2LS0770410A to MANUAL in FoxSelect  
using a Foxboro I/A workstation. \_\_\_\_\_

1st

CV

- [6] **PLACE** W2BOP\_077:2LS0770410B to MANUAL in FoxSelect  
using a Foxboro I/A workstation. \_\_\_\_\_

1st

CV

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 79 of 148</b>
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Date \_\_\_\_\_

**6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump  
2A and 2B Logic and Operation Test (continued)**

- [7] **PLACE** W2BOP\_077:2LS0770411B to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [8] **PLACE** W2BOP\_077:2LS0770410D to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [9] **PLACE** W2BOP\_077:2LS0770411D to MANUAL in FoxSelect using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

- [10] **VERIFY** Annunciator Window 160C, RX BLDG POCKET SUMP LEVEL HI, at 2-XA-55-15A, is CLEAR.

- [11] **START** temporary makeup water to 2-SUMP-77-410, AUX RB FL & EQUIP DRAIN SUMP until Annunciator Window 160C, RX BLDG POCKET SUMP LEVEL HI, alarms at 2-XA-55-15A  
**THEN**

**STOP** makeup water.

- [12] **VERIFY** Annunciator Window 160C. RX BLDG POCKET SUMP LEVEL HI is in ALARM at 2-XA-55-15A. (**ACC CRIT**)

**NOTE**

Temporary makeup water to sump may be adjusted to facilitate a continuous flow while testing pumps and level alarms.

- [13] **ADJUST** temporary makeup water flow rate to 2-SUMP-77-410, AUX RB FL & EQUIP DRAIN SUMP.



<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 80 of 148</b>
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Date \_\_\_\_\_

#### 6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump 2A and 2B Logic and Operation Test (continued)

- [14] **PLACE** 2-HS-77-410, POCKET SUMP PMP A, to the START position at 2-M-15. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, red light is ON, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, green light is OFF, at 2-M-15. \_\_\_\_\_
- C. **VERIFY** locally that 2-PMP-77-410, RB FLR/EQ DRN POCKET SUMP PMP 2A (EL702/AZ243), is RUNNING. \_\_\_\_\_
- [15] **VERIFY** Annunciator Window 160C. RX BLDG POCKET SUMP LEVEL HI, CLEARS at 2-XA-55-15A. (**ACC CRIT**) \_\_\_\_\_
- [16] **PLACE** 2-HS-77-410, POCKET SUMP PMP A, to the STOP position at 2-M-15. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, red light is OFF, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, green light is ON, at 2-M-15. \_\_\_\_\_
- C. **VERIFY** locally that 2-PMP-77-410, RB FLR/EQ DRN POCKET SUMP PMP 2A, is not RUNNING. \_\_\_\_\_
- [17] **STOP** temporary makeup water to 2-SUMP-77-410, AUX RB FL & EQUIP DRAIN SUMP. \_\_\_\_\_
- [18] **PLACE** W2BOP\_077:2LS0770410A to AUTO in FoxSelect using a Foxboro I/A workstation. \_\_\_\_\_
- 1st
- CV
- [19] **START** temporary makeup water to 2-SUMP-77-410, AUX RB FL & EQUIP DRAIN SUMP until Annunciator Window 160C, RX BLDG POCKET SUMP LEVEL HI, alarms at 2-XA-55-15A  
**THEN**
- STOP** makeup water. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 81 of 148</b>
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Date \_\_\_\_\_

**6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump  
2A and 2B Logic and Operation Test (continued)**

- [20] **VERIFY** Annunciator Window 160C. RX BLDG POCKET  
SUMP LEVEL HI, ALARMS at 2-XA-55-15A. \_\_\_\_\_
- [21] **PLACE** 2-HS-77-411, POCKET SUMP PMP B, to the START  
position at 2-M-15. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, red light  
is ON, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, green  
light is OFF, at 2-M-15. \_\_\_\_\_
- C. **VERIFY** locally that 2-PMP-77-411, RB FLR/EQ DRN  
POCKET SUMP PMP 2B (EL702/AZ243), is RUNNING. \_\_\_\_\_
- [22] **VERIFY** Annunciator Window 160C. RX BLDG POCKET  
SUMP LEVEL HI, CLEARS at 2-XA-55-15A. \_\_\_\_\_
- [23] **PLACE** 2-HS-77-411, POCKET SUMP PMP B, to the STOP  
position at 2-M-15. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, red light  
is OFF, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, green  
light is ON, at 2-M-15. \_\_\_\_\_
- C. **VERIFY** locally that 2-PMP-77-411, RB FLR/EQ DRN  
POCKET SUMP PMP 2B, is not RUNNING. \_\_\_\_\_

**NOTE**

During the performance of steps 6.4[24] through 6.4[32], visual observation of transient and steady state vibrations is required.

- [24] **PLACE** 2-HS-77-410, POCKET SUMP PMP A, to the START  
position **AND**
- VERIFY** pump is RUNNING by light indication at 2-M-15. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 82 of 148</b>
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Date \_\_\_\_\_

**6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump  
2A and 2B Logic and Operation Test (continued)**

[25] **VERIFY** 2-PMP-77-410, RB FLR/EQ DRN POCKET SUMP PUMP 2A, DISCHARGES to 2-SUMP-77-125 FLOOR & EQUIP DRAIN SUMP, by increased flow indication at M&TE flowmeter. (**ACC CRIT**) \_\_\_\_\_

A. **RECORD** sump level from 2-LT-77-410. \_\_\_\_\_

\_\_\_\_\_ in \_\_\_\_\_

B. **RECORD** flow for 2-PMP-77-410, RB FLR/EQ DRN POCKET SUMP PUMP 2A, from M&TE flowmeter.

FLOW: \_\_\_\_\_ GPM

M&TE ID#: \_\_\_\_\_

C. **RECORD** the discharge pressure for 2-PMP-77-410, RB FLR/EQ DRN POCKET SUMP PUMP 2A from M&TE pressure gauge installed downstream of 2-VTV-67-1048.

\_\_\_\_\_ PSIG

\_\_\_\_\_ M&TE ID \_\_\_\_\_

**NOTE**

At test director's discretion, step 6.4[26] may be completed at a later time to minimize the amount of time spent field testing.

[26] **COMPLETE** Appendix F \_\_\_\_\_

[26.1] **VERIFY** adjusted flowrate from Appendix F for 2-PMP-77-410 is  $\geq 120$  gpm. (**ACC CRIT**) \_\_\_\_\_

[26.2] **VERIFY** adjusted TDH from Appendix F for 2-PMP-77-410 is  $\geq 40$  FT. (**ACC CRIT**) \_\_\_\_\_

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Date \_\_\_\_\_

**6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump  
2A and 2B Logic and Operation Test (continued)**

[27] **TOGGLE** W2BOP\_077:2LS0770410B to the OFF position  
using a Foxboro I/A workstation to simulate a 2-LS-77-410B  
LO Level Trip Signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, red light  
is OFF, at 2-M-15. \_\_\_\_\_

B. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, green  
light is ON, at 2-M-15. (**ACC CRIT**) \_\_\_\_\_

[28] **TOGGLE** W2BOP\_077:2LS0770410B to the ON position  
using a Foxboro I/A workstation to simulate a 2-LS-77-410B  
LO Level Reset Signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, red light  
REMAINS OFF, at 2-M-15. \_\_\_\_\_

B. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, green  
light REMAINS ON, at 2-M-15. \_\_\_\_\_

[29] **PLACE** 2-HS-77-411, POCKET SUMP PMP B, to the START  
position at 2-M-15. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 84 of 148</b>
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**6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump  
2A and 2B Logic and Operation Test (continued)**

[30] **VERIFY** 2-PMP-77-411, RB FLR/EQ DRN POCKET SUMP PUMP 2B, DISCHARGES to 2-SUMP-77-125 FLOOR & EQUIP DRAIN SUMP, by increased flow indication at M&TE flowmeter. (**ACC CRIT**) \_\_\_\_\_

A. **RECORD** sump level from 2-LT-77-410. \_\_\_\_\_

\_\_\_\_\_ in \_\_\_\_\_

B. **RECORD** flow for 2-PMP-77-411, RB FLR/EQ DRN POCKET SUMP PUMP 2B, from M&TE flowmeter.

FLOW: \_\_\_\_\_ GPM

M&TE ID#: \_\_\_\_\_

C. **RECORD** the discharge pressure for 2-PMP-77-411, RB FLR/EQ DRN POCKET SUMP PUMP 2B from M&TE pressure gauge installed downstream of 2-VTV-67-1049.

\_\_\_\_\_ PSIG

\_\_\_\_\_ M&TE ID \_\_\_\_\_

**NOTE**

At test director's discretion, step 6.4[31] may be completed at a later time to minimize the amount of time spent field testing.

[31] **COMPLETE** Appendix G \_\_\_\_\_

[31.1] **VERIFY** adjusted flowrate from Appendix G for 2-PMP-77-411 is  $\geq 120$  gpm. (**ACC CRIT**) \_\_\_\_\_

[31.2] **VERIFY** adjusted TDH from Appendix G for 2-PMP-77-411 is  $\geq 40$  FT. (**ACC CRIT**) \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 85 of 148</b>
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Date \_\_\_\_\_

#### 6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump 2A and 2B Logic and Operation Test (continued)

- [32] **TOGGLE** W2BOP\_077:2LS0770410D to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-410D LO Level Trip Signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, red light is OFF, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, green light is ON, at 2-M-15. (**ACC CRIT**) \_\_\_\_\_
- [33] **TOGGLE** W2BOP\_077:2LS0770410D to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-410D LO Level Reset Signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, red light REMAINS OFF, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, green light REMAINS ON, at 2-M-15. \_\_\_\_\_
- [34] **PLACE** 2-HS-77-410, POCKET SUMP PMP A, to the START position, **AND**
- VERIFY** pump is RUNNING by light indication at 2-M-15. \_\_\_\_\_
- [35] **TOGGLE** W2BOP\_077:2LS0770411B to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-411B Low Level Trip Signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, red light is OFF, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, green light is ON, at 2-M-15. \_\_\_\_\_
- [36] **TOGGLE** W2BOP\_077:2LS0770411B to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-411B Low Level Reset Signal. \_\_\_\_\_
- A. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, red light REMAINS OFF, at 2-M-15. \_\_\_\_\_
- B. **VERIFY** 2-HS-77-410, POCKET SUMP PMP A, green light REMAINS ON, at 2-M-15. \_\_\_\_\_

<b>WBN Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03 Rev. 0001 Page 86 of 148</b>
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Date \_\_\_\_\_

#### 6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump 2A and 2B Logic and Operation Test (continued)

[37] **PLACE** 2-HS-77-411, POCKET SUMP PMP B, to the START position, **AND**

**VERIFY** pump is RUNNING by light indication at 2-M-15. \_\_\_\_\_

[38] **TOGGLE** W2BOP\_077:2LS0770411D to the OFF position using a Foxboro I/A workstation to simulate a 2-LS-77-411D Low Level Trip Signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, red light is OFF, at 2-M-15. \_\_\_\_\_

B. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, green light is ON, at 2-M-15. \_\_\_\_\_

[39] **TOGGLE** W2BOP\_077:2LS0770411D to the ON position using a Foxboro I/A workstation to simulate a 2-LS-77-411D Low Level Reset Signal. \_\_\_\_\_

A. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, red light REMAINS OFF, at 2-M-15. \_\_\_\_\_

B. **VERIFY** 2-HS-77-411, POCKET SUMP PMP B, green light REMAINS ON, at 2-M-15. \_\_\_\_\_

[40] **PLACE** 2-HS-77-410, POCKET SUMP PMP A, to the STOP position at 2-M-15. \_\_\_\_\_

[41] **PLACE** 2-HS-77-411, POCKET SUMP PMP B, to the STOP position at 2-M-15. \_\_\_\_\_

[42] **PLACE** W2BOP\_077:2LS0770410B to AUTO in FoxSelect using a Foxboro I/A workstation. \_\_\_\_\_

1st

CV

[43] **PLACE** W2BOP\_077:2LS0770411B to AUTO in FoxSelect using a Foxboro I/A workstation. \_\_\_\_\_

1st

CV

<b>WBN</b> <b>Unit 2</b>	<b>LIQUID WASTE COLLECTION</b>	<b>2-PTI-077-03</b> <b>Rev. 0001</b> <b>Page 87 of 148</b>
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**6.4 Reactor Building Floor and Equipment Drain Pocket Sump Pump  
2A and 2B Logic and Operation Test (continued)**

[44] **PLACE** W2BOP\_077:2LS0770410D to AUTO in FoxSelect  
using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[45] **PLACE** W2BOP\_077:2LS0770411D to AUTO in FoxSelect  
using a Foxboro I/A workstation.

\_\_\_\_\_  
1st

\_\_\_\_\_  
CV

[46] **REMOVE** M&TE flowmeter from common discharge piping of  
Pocket Sump Pumps.

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

[48] **VERIFY** the successful completion of this Subsection 6.4  
(**ACC CRIT** )



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## 6.5 Containment Pit Sump Ejector Pump Logic and Operation Test

- [1] **VERIFY** all prerequisites for Subsection 6.5 are complete. \_\_\_\_\_
- [2] **VERIFY** 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Audible Alarm, is CLEAR at 2-JB-293-3117 (714/AZ106). \_\_\_\_\_
- [3] **VERIFY** 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Red Alarm Override light, is OFF at 2-JB-293-3117 (714/AZ106). \_\_\_\_\_
- [4] **START** temporary makeup water to 2-SUMP-77-129, CONTAINMENT PIT SUMP, until 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Audible Alarm, alarms at 2-JB-293-3117, **THEN**  
  
**STOP** makeup water, **AND**  
  
**VERIFY:**
  - A. 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Audible Alarm, is ON at 2-JB-293-3117. \_\_\_\_\_
  - B. 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Red Alarm Override light, is OFF at 2-JB-293-3117. \_\_\_\_\_
- [5] **PRESS** 2-HS-77-129B2, CONTAINMENT PIT SUMP ALARM pushbutton, to silence Audible Alarm, **AND**  
  
**VERIFY:**
  - A. 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Audible Alarm, is SILENT at 2-JB-293-3117. \_\_\_\_\_
  - B. 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Red Alarm Override light, is ON at 2-JB-293-3117. \_\_\_\_\_

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## 6.5 Containment Pit Sump Ejector Pump Logic and Operation Test (continued)

### NOTE

During the performance of steps 6.5[6] through 6.5[10], visual observation of transient and steady state vibrations is required.

- [6] **PRESS** 2-HS-77-129B1, CNTMT PIT SUMP PUMP, START pushbutton (716/AZ106), **AND**

#### VERIFY:

- A. 2-HS-77-129B1, CNTMT PIT SUMP PUMP, START pushbutton red light is ON at 2-JB-293-3117. \_\_\_\_\_
  - B. 2-HS-77-129B1, CNTMT PIT SUMP PUMP, STOP pushbutton green light is OFF at 2-JB-293-3117. \_\_\_\_\_
  - C. 2-PMP-77-129, CONTAINMENT PIT SUMP PUMP, is RUNNING locally. \_\_\_\_\_
- [7] **OPERATE** 2-PMP-77-129, CONTAINMENT PIT SUMP PUMP, in accordance with 2-SOI-77.01, to pump down the Containment Pit Sump. \_\_\_\_\_

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**6.5 Containment Pit Sump Ejector Pump Logic and Operation Test  
(continued)**

[8] **VERIFY** 2-PMP-77-129, CONTAINMENT PIT SUMP PUMP, DISCHARGES effluent to 2-SUMP-77-140, RB FLOOR & EQUIP DRAIN POCKET SUMP, by flow indication at M&TE flowmeter. (**ACC CRIT**). \_\_\_\_\_

A. **RECORD** containment pit sump level. \_\_\_\_\_

\_\_\_\_\_ in \_\_\_\_\_

B. **RECORD** flow for 2-PMP-77-129, CONTAINMENT PIT SUMP PUMP, from M&TE flowmeter.

FLOW: \_\_\_\_\_ GPM

M&TE ID#: \_\_\_\_\_

C. **RECORD** the discharge pressure for 2-PMP-77-129, CONTAINMENT PIT SUMP PUMP from the installed M&TE pressure gauge.

PRESSURE: \_\_\_\_\_ PSI

M&TE ID#: \_\_\_\_\_

**NOTE**

At test director's discretion, step 6.5[9] may be completed at a later time to minimize the amount of time spent field testing.

[9] **COMPLETE** Appendix H \_\_\_\_\_

[9.1] **VERIFY** adjusted flowrate from Appendix H for 2-PMP-77-129 is  $\geq 10$  gpm. (**ACC CRIT**) \_\_\_\_\_

[9.2] **VERIFY** adjusted TDH from Appendix H for 2-PMP-77-129 is  $\geq 70$  FT. (**ACC CRIT**) \_\_\_\_\_

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## 6.5 Containment Pit Sump Ejector Pump Logic and Operation Test (continued)

- [10] **PRESS** 2-HS-77-129B1, CNTMT PIT SUMP PUMP, STOP pushbutton (716/AZ106), **AND**

**VERIFY:**

- A. 2-HS-77-129B1, CNTMT PIT SUMP PUMP, START pushbutton red light is OFF at 2-JB-293-3117. \_\_\_\_\_
- B. 2-HS-77-129B1, CNTMT PIT SUMP PUMP, STOP pushbutton green light is ON at 2-JB-293-3117. \_\_\_\_\_
- C. 2-PMP-77-129, CONTAINMENT PIT SUMP PUMP, is NOT RUNNING locally. \_\_\_\_\_

- [11] **PRESS** 2-HS-77-129B1, CONTAINMENT PIT SUMP ALARM pushbutton, to remove the Audible Alarm, **AND**

**VERIFY:**

- A. 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Audible Alarm REMAINS SILENT at 2-JB-293-3117. \_\_\_\_\_
- B. 2-LA-77-129, REAC BLDG PIT SUMP HI ALARM, Red Alarm Override light, is OFF at 2-JB-293-3117. \_\_\_\_\_

- [12] **REMOVE** M&TE flowmeter from discharge piping of Containment Pit Sump Pump. \_\_\_\_\_

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- [13] **VERIFY** no excessive vibration of piping system and components associated with the performance of this subsection was observed. \_\_\_\_\_

- [14] **VERIFY** the successful completion of this Subsection 6.5 (**ACC CRIT**) \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test

- [1] **VERIFY** all prerequisites for Subsection 6.6 are complete. \_\_\_\_\_
- [2] **PERFORM** a lamp test by depressing 0-HS-40-21, FLOOD ALARM TEST SW, located on JB-2272 near A4R/757. \_\_\_\_\_

### NOTES

- 1) The following third tier steps are independent of each other and may be performed in any order.
- 2) Simulation of water level above HI set point at flood water switch probes in the following steps may be performed by any of the following methods:
  - Block bottom of probe well and fill with water through weep hole.
  - Spray water on base of probe with squirt bottle or equivalent.
  - Construct dam in close proximity around probe well and fill with water.
  - Apply water to probe tip using wet sponge or equivalent.

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[3] TEST 2-LS-40-26, CNTMT SPRAY PUMP RM 2B FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-26, CNTMT SPRAY PUMP RM 2B FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-26, CNTMT SPRAY PUMP RM 2B FLOOD MODE LEVEL, near A10T/676, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-26, CNTMT SPRAY PUMP RM 2B FLOODED AUX BLDG, located on JB-2272, is ON (**ACC CRIT**). \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-26, CNTMT SPRAY PUMP RM 2B FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[4] TEST 2-LS-40-27, CNTMT SPRAY PUMP RM 2A FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-27, CNTMT SPRAY PUMP RM 2A FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-27, CNTMT SPRAY PUMP RM 2A FLOOD MODE LEVEL, near A10U/676, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-27, CNTMT SPRAY PUMP RM 2A FLOODED AUX BLDG, located on JB-2272, is ON (**ACC CRIT**). \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-27, CNTMT SPRAY PUMP RM 2A FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[5] TEST 2-LS-40-28, RHR PUMP RM 2B FLOOD MODE LEVEL

- A. **VERIFY** that Alarm Indicator 2-XI-40-28, RHR PUMP B RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_
- B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_
- C. **LOCATE** 2-LS-40-28, RHR PUMP RM 2B FLOOD MODE LEVEL, near A10V/676, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-28, RHR PUMP B RM FLOODED AUX BLDG, located on JB-2272, is ON (**ACC CRIT**). \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-28, RHR PUMP B RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_



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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[6] TEST 2-LS-40-34, U2 PD CHG PMP RM FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-34, CHARGING PUMP C RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-34, U2 PD CHG PMP RM FLOOD MODE LEVEL, near A10T/692, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-34, CHARGING PUMP C RM FLOODED AUX BLDG, located on JB-2272, is ON (**ACC CRIT**). \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-34, CHARGING PUMP C RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

### [7] TEST 2-LS-40-35, CHARGING PMP RM 2B FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-35, CHARGING PMP B RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-35, CHARGING PMP RM 2B FLOOD MODE LEVEL, near A10T/692, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-35, CHARGING PMP B RM FLOODED AUX BLDG, located on JB-2272, is ON. (**ACC CRIT**) \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-35, CHARGING PMP B RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[8] TEST 2-LS-40-36, CHARGING PMP RM 2A FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-36, CHARGING PMP A RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-36, CHARGING PMP RM 2A FLOOD MODE LEVEL, near A11T/692, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-36, CHARGING PMP A RM FLOODED AUX BLDG, located on JB-2272, is ON. (**ACC CRIT**) \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-36, CHARGING PMP A RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[9] TEST 2-LS-40-37, SAFTEY INJ PMP RM 2B FLOOD MODE LEVEL

- A. **VERIFY** that Alarm Indicator 2-XI-40-37, SIS PMP B RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_
- B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_
- C. **LOCATE** 2-LS-40-37, SAFTEY INJ PMP RM 2B FLOOD MODE LEVEL, near A10U/692, **AND**  
  
**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_
- D. **VERIFY** the following:
  - Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
  - Alarm Indicator 2-XI-40-37, SIS PMP B RM FLOODED AUX BLDG, located on JB-2272, is ON. (**ACC CRIT**) \_\_\_\_\_
- E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_
- F. **VERIFY** the following:
  - Alarm Indicator 2-XI-40-37, SIS PMP B RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
  - Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_
- G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_
- H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[10] TEST 2-LS-40-38, SAFTEY INJ PMP RM 2A FLOOD MODE LEVEL

- A. **VERIFY** that Alarm Indicator 2-XI-40-37, SIS PMP A RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_
- B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_
- C. **LOCATE** 2-LS-40-38, SAFTEY INJ PMP RM 2A FLOOD MODE LEVEL, near A10U/692, **AND**  
  
**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_
- D. **VERIFY** the following:
  - Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
  - Alarm Indicator 2-XI-40-38, SIS PMP A RM FLOODED AUX BLDG, located on JB-2272, is ON. (**ACC CRIT**) \_\_\_\_\_
- E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_
- F. **VERIFY** the following:
  - Alarm Indicator 2-XI-40-38, SIS PMP A RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
  - Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_
- G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_
- H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[11] TEST 2-LS-40-48, VOLUME CNTL TNK RM 2A FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-48, VOLUME CONT TANK 2A RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-48, VOLUME CNTL TNK RM 2A FLOOD MODE LEVEL, near A8S/676, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-48, VOLUME CONT TANK 2A RM FLOODED AUX BLDG, located on JB-2272, is ON. (**ACC CRIT**) \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-48, VOLUME CONT TANK 2A RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[12] TEST 2-LS-40-49, CVCS SEAL WTR HX RM FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-49, SEAL WTR HT EXCH A RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-49, CVCS SEAL WTR HX RM FLOOD MODE LEVEL, near A10U/676, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-49, SEAL WTR HT EXCH A RM FLOODED AUX BLDG, located on JB-2272, is ON (**ACC CRIT**). \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-49, SEAL WTR HT EXCH A RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[13] TEST 2-LS-40-50, CS/RHR HEAT EXCH RM 2B FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-50, HEAT EXCHANGERS B RM FLOODED AUX BLDG, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-50, CS/RHR HEAT EXCH RM 2B FLOOD MODE LEVEL, near A10U/676, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-50, HEAT EXCHANGERS B RM FLOODED AUX BLDG, located on JB-2272, is ON. (**ACC CRIT**) \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-50, HEAT EXCHANGERS B RM FLOODED AUX BLDG, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_



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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[14] TEST 2-LS-40-17, RB AZ182 FLOOD MODE LEVEL

- A. **VERIFY** that Alarm Indicator 2-XI-40-17, EL 702.78 @ 182 DEG REACTOR BLDG FLOODED, located on JB-2272, is OFF. \_\_\_\_\_
- B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_
- C. **LOCATE** 2-LS-40-17, RB AZ182 FLOOD MODE LEVEL, near R-Z 182° EL 708, **AND**  
  
**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_
- D. **VERIFY** the following:
  - Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
  - Alarm Indicator 2-XI-40-17, EL 702.78 @ 182 DEG REACTOR BLDG FLOODED, located on JB-2272, is ON (**ACC CRIT**). \_\_\_\_\_
- E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_
- F. **VERIFY** the following:
  - Alarm Indicator 2-XI-40-17, EL 702.78 @ 182 DEG REACTOR BLDG FLOODED, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
  - Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_
- G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_
- H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.6 Floor Level Detection System Alarm Response Test (continued)

[15] TEST 2-LS-40-18, RB AZ13 FLOOD MODE LEVEL

A. **VERIFY** that Alarm Indicator 2-XI-40-18, EL 702.78 @ 13 DEG REACTOR BLDG FLOODED, located on JB-2272, is OFF. \_\_\_\_\_

B. **VERIFY** that Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR. \_\_\_\_\_

C. **LOCATE** 2-LS-40-18, RB AZ13 FLOOD MODE LEVEL, near R-Z 13° EL 703, **AND**

**SIMULATE** water level above HI set point at flood level switch probe. \_\_\_\_\_

D. **VERIFY** the following:

- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, ALARMS (**ACC CRIT**). \_\_\_\_\_
- Alarm Indicator 2-XI-40-18, EL 702.78 @ 13 DEG REACTOR BLDG FLOODED, located on JB-2272, is ON (**ACC CRIT**). \_\_\_\_\_

E. **REMOVE** simulated water level above HI set point at flood level switch probe. \_\_\_\_\_

F. **VERIFY** the following:

- Alarm Indicator 2-XI-40-18, EL 702.78 @ 13 DEG REACTOR BLDG FLOODED, located on JB-2272, is OFF (**ACC CRIT**). \_\_\_\_\_
- Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is still in ALARM (**ACC CRIT**). \_\_\_\_\_

G. **ENSURE** Operations reset Annunciator Window 167-D. \_\_\_\_\_

H. **VERIFY** Annunciator Window 167-D, TURB/AUX/RX BLDG FLOODED, at 1-XA-55-15B, is CLEAR (**ACC CRIT**). \_\_\_\_\_

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## 6.7 Floor and Equipment Drains and Sumps Obstruction and Drainage Verification

- [1] **VERIFY** all prerequisites for Subsection 6.7 are complete. \_\_\_\_\_
- [2] **VERIFY** the following drains to the Reactor Building Floor and Equipment Drain Sump drain  $\geq 16.4$  gpm for approximately 4 minutes (**ACC CRIT**)  
(Shown on 2-47W851-1)

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
1	CLR DRN	795	SG ENCL	EQ			
6	CLR DRN	795	SG ENCL	EQ			
11	3" FP DR FR RCP 4	729	U2 RB	EQ			
12	3" FP DR FR RCP 1	729	U2 RB	EQ			
13	3" FP DR FR RCP 2	729	U2 RB	EQ			
14	3" FP DR FR RCP 3	729	U2 RB	EQ			
15	2" INST DR PNLS 172&173	716	U2 RB	EQ			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
16	3" FD	716	U2 RB	FLR			
17	3" FD	716	U2 RB	FLR			
18	3" HVAC DR	716	U2 RB	EQ			
19	2" INST DR PNL 175&184	716	U2 RB	EQ			
20	3" FD	716	U2 RB	FLR			
21	3" FD	716	U2 RB	FLR			
22	3" FD	716	U2 RB	FLR			
23	2" INST DR PNL 174	716	U2 RB	EQ			
24	2" HVAC DR	716	U2 RB	EQ			
30	2" INST DR PNL 177&195	716	U2 RB	EQ			
31	3" FD	716	U2 RB	FLR			
32	3" DR (SPARE)	716	U2 RB	EQ			
33	3" FD	716	U2 RB	FLR			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
34	3" FD	716	U2 RB	FLR			
35	2" HVAC DR	716	U2 RB	EQ			
41	2" INST PNL DR	716	U2 RB	EQ			
42	2" INST DR PNL 180	702	U2 RB	EQ			
43	3" LOW PT LOOP DR	702	U2 RB	EQ			
44	3" FD	702	U2 RB	FLR			
45	3" FD	702	U2 RB	FLR			
46	3" FD	702	U2 RB	FLR			
47	3" FD	702	U2 RB	FLR			
48	3" LOOP DR HDR	702	U2 RB	EQ			
56	3" FD	702	U2 RB	FLR			
60	3" EQ DR (SPARE)	702	U2 RB	EQ			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
61	FUEL POOL VENT & DUCT DRAIN	702	U2 RB	EQ			
62	3" FD	702	U2 RB	FLR			
63	3" FD	702	U2 RB	FLR			
64	3" FD	702	U2 RB	FLR			
65	3" ICE COND DR HDR	702	U2 RB	EQ			
66	3" RC LOOP LP DR HDR	702	U2 RB	EQ			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and Drainage Verification (continued)**

- [3] **VERIFY** the following drains to the Reactor Building Floor and Equipment Drain Pocket Sump drain  $\geq 16.4$  gpm for approximately 4 minutes (**ACC CRIT**)  
(Shown on 2-47W851-1)

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
3	CLR DRN	795	SG ENCL	EQ			
8	CLR DRN	795	SG ENCL	EQ			
10	HVAC DRN	729	U2 RB	EQ			
25	3" DR	716	U2 RB	EQ			
26	3" FD	716	U2 RB	FLR			
27	2" HVAC DR	730	U2 RB	EQ			
28	3" FD	716	U2 RB	FLR			
29	2" SEAL TABLE DR	720	INST RM	EQ			
36	2" HVAC DR	716	U2 RB	EQ			
37	3" FD	716	U2 RB	FLR			
38	3" FD	716	U2 RB	FLR			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq$ 16.4 gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
39	2" INST DR PNL 170&171	716	U2 RB	EQ			
40	3" FD	716	U2 RB	FLR			
49	3" FP VENT & ICE COND DR	702	U2 RB	EQ			
50	3" FD	702	U2 RB	FLR			
52	3" FD	702	U2 RB	FLR			
54	3" FD	702	U2 RB	FLR			
55	3" FD	702	U2 RB	FLR			
67	3" FD	702	U2 RB	FLR			
68	3" FD	702	U2 RB	FLR			
69	3" RC LOW POINT DR	702	U2 RB	EQ			
70	3" FD	702	U2 RB	FLR			
71	3" FD	702	U2 RB	FLR			



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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
72	2" INST DR PNL 178, 179, 181	702	U2 RB	EQ			
73	3" FD	702	U2 RB	FLR			
74	3" FD	702	U2 RB	FLR			
75	3" DR (SPARE)	702	U2 RB	EQ			

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## 6.7 Floor and Equipment Drains and Sumps Obstruction and Drainage Verification (continued)

### NOTE

Use the temporary equipment installed in section 4.3 to remove water during and following completion of testing drains to Passive Sump.

- [4] **VERIFY** the following drains to the Passive Sump drain  $\geq 16.4$  gpm for approximately 4 minutes (**ACC CRIT**)  
(Shown on 2-47W851-1)

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
79	3" FD	702	U2 ANN	FLR			
80	3" FD	702	U2 ANN	FLR			
81	3" FD	702	U2 ANN	FLR			
82	3" FD	702	U2 ANN	FLR			
83	3" FD	702	U2 ANN	FLR			
84	3" FD	702	U2 ANN	FLR			
85	3" FD	702	U2 ANN	FLR			
86	3" FD	702	U2 ANN	FLR			
87	3" FD	702	U2 ANN	FLR			
88	3" FD	702	U2 ANN	FLR			
89	3" FD	702	U2 ANN	FLR			
90	3" FD	702	U2 ANN	FLR			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
91	3" FD	702	U2 ANN	FLR			
92	3" FD	702	U2 ANN	FLR			
93	3" FD	702	U2 ANN	FLR			
94	3" FD	702	U2 ANN	FLR			
95	3" FD	702	U2 ANN	FLR			

- [5] **VERIFY** the following drains to the Auxiliary Building Floor and Equipment Drain Sump drain  $\geq 16.4$  gpm for approximately 4 minutes (**ACC CRIT**)  
(Shown on 1-47W852-1)

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
96	3" Leak Detector	676'	A10/V	EQ			
97	3" Leak Detector	676'	A10/U	EQ			
98	3" Leak Detector	676'	A10/U	EQ			
99	3" Leak Detector	676'	A10/T	EQ			

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## 6.7 Floor and Equipment Drains and Sumps Obstruction and Drainage Verification (continued)

- [6] **VERIFY** the following drains to the Floor Drain Collector Tank drain  $\geq 16.4$  gpm for approximately 4 minutes (**ACC CRIT**)

(Shown on 1-47W852-3 and 1-47W852-4)

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
109	3" FD	704	A15/U	FLR			
110	3" FD	704	A15/U	FLR			
111	1.5" H&V DR	692	A14/U	EQ			
112	1.5" H&V DR	692	A15/U	EQ			
113	3" FD	692	AFW PUMP RM	FLR			
114	3" FD	692	A15/T	FLR			
115	3" FD	692	A13/S	FLR			
116	3" FD	692	A13/R	FLR			
117	2" INSTR DR	737	A11/V	EQ			
118	2" INSTR	737	A11/W	EQ			
119	2" AFW DR	737	A13/U	EQ			
120	1.5" H&V DR	737	A12/V	EQ			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
121	FD 10	737	A12/V	FLR			
122	3" FD	713	AB	FLR			
123	2" ED	713	PIPE CHASE	EQ			
124	3" FD	713	AB	FLR			
125	2" ED	713	PIPE GALLE RY	EQ			
126	3" FD	713	PIPE GALLE RY	FLR			
127	3" FD	713	VALVE GALLE RY	FLR			
128	2" ED	729	MN STM VALVE RM	EQ			
129	3" FD	729	MN STM VALVE RM	FLR			
130	2" ED	729	MN STM VALVE RM	EQ			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes (ACC CRIT)	M&TE ID	Cal Due Date
131	3" FD	729	MN STM VALVE RM	FLR			
132	2" ED	713	PIPE GALLE RY	EQ			
133	3" FD	713	VCT RM	FLR			
134	3" FD	726	FILTER VAULT	FLR			
135	3" FD	726	FILTER VAULT	FLR			
136	3" FD	726	FILTER VAULT	FLR			
137	3" FD	726	FILTER VAULT	FLR			
138	3" FD	713	SMPLE RM II	FLR			
139	3" FD	713	SMPLE RM II	FLR			
140	3" FD	713	FILTER PIT	FLR			
141	3" FD	713	FILTER PIT	FLR			
142	2" ED	713	A9/W	EQ			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
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Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
143	3" FD	713	HX RM 2A	FLR			
144	3" FD	713	HX RM 2B	FLR			
145	3" FD	713	SEAL WATER HX RM	FLR			
146	3" FD	713	DEMIN VAULT	FLR			
147	3" FD	713	DEMIN VAULT	FLR			
148	3" FD	713	FILTER PIT	FLR			
149	3" FD	713	FILTER PIT	FLR			
150	3" FD	713	DEMIN VAULT	FLR			
151	3" FD	713	VALVE GALLE RY	FLR			
152	3" FD	692	PIPE CHASE	FLR			
153	3" FD	692	PIPE CHASE	FLR			
154	3" FD	692	PIPE CHASE	FLR			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
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Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes (ACC CRIT)	M&TE ID	Cal Due Date
155	3" FD	692	A11/RX CL	FLR			
156	3" FD	692	A11/W	FLR			
157	3" FD	726	PASF	FLR			
158	3" FD	692	A9/W	FLR			
159	3" FD	692	A10/W	FLR			
160	2" H&V COND DR	692	A11/V	EQ			
161	3" FD	692	SIS PMP RM 2A	FLR			
162	2" ED	692	SIS PMP RM 2B	EQ			
163	3" FD	692	SIS PMP RM 2B	FLR			
164	3" FD	692	CCP RM 2A	FLR			
165	3" FD	692	CCP RM 2B	FLR			
166	3" FD	692	PDP RM 2C	FLR			



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**6.7 Floor and Equipment Drains and Sumps Obstruction and Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
167	2" INST DR	757	REFUE L RM	EQ			
168	3" FD	757	REFUE L RM	FLR			
169	2" AFW DR	737	A13/T	EQ			
188	3" FD	737	U2 H&V RM	FLR			
189	3" FD	737	U2 H&V RM	FLR			
190	3" FD	733	LTDN HX RM	FLR			
191	2" AFW PMP DR	713	A13/S	EQ			
192	2" AFW PMP DR	713	A12/S	EQ			

- [7] **VERIFY** the following drains to the Tritiated Drain Collector  
 Tank drain  $\geq 16.4$  gpm for approximately 4 minutes  
 (**ACC CRIT**)  
 (Shown on 1-47W852-2)

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
170	2" ED (SPARE)	729	A13/U	EQ			

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**6.7 Floor and Equipment Drains and Sumps Obstruction and  
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Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq$ 16.4 gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
171	2" ED VOL CONT DR	713	AB	EQ			
172	2" ED CHEM MIX TNK DR & OVERFL	713	AB	EQ			
173	2" ED	713	A11/W	EQ			
174	2" ED BORON INJ TNK FUNNEL DR	713	AB	EQ			
175	2" ED	713	A11/U	EQ			
176	3" ED (SPARE)	757	A11/V	EQ			
177	2" INST DR	757	A11	EQ			
178	2" PMW PMP DR	692	AB	EQ			
179	2" ED AFW PMP DR	692	AB	EQ			
180	2" CO	692	A12/V	EQ			

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Date \_\_\_\_\_

**6.7 Floor and Equipment Drains and Sumps Obstruction and  
Drainage Verification (continued)**

Number	Name	Approx. Elev.	Approx. Loc.	Type	Drains $\geq 16.4$ gpm for approximately 4 minutes ( <b>ACC CRIT</b> )	M&TE ID	Cal Due Date
181	2" ED PD PMP RM 2C	692	PD PMP RM 2C	EQ			
182	2" ED CC PMP RM 2A	692	CC PMP RM 2A	EQ			
183	2" ED CVCS LOW PT DR	692	PIPE GALLE RY	EQ			
184	2" ED CC PMP RM 2B	692	CC PMP RM 2B	EQ			
185	2" ED SIS PMP DR	692	SIS PMP RM 2B	EQ			
186	2" TRENCH DR	692	PIPE CHASE	EQ			
187	2" ED SIS PMP RM DR	692	SIS PMP RM 2A	EQ			

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Date \_\_\_\_\_

## 7.0 POST-PERFORMANCE ACTIVITIES

<p style="text-align: center;"><b>NOTE</b></p> <p>Post-performance steps may be performed in any order unless otherwise stated and should be completed as close in time as practicable to the end of the instruction performance.</p>
---

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

**RECORD** the results on Measuring and Test Equipment (M&TE) Log

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

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

\_\_\_\_\_
- [3]   **INSTALL** 2-SUMP-77-125, FLOOR & EQUIP DRAIN SUMP, hatch plug (RB 702/AZ240).

\_\_\_\_\_

1st

\_\_\_\_\_

CV

\_\_\_\_\_
- [4]   **NOTIFY** Unit 1 Operations of the test completion and system alignment.

\_\_\_\_\_
- [5]   **NOTIFY** the Unit 2 US/SRO of the test completion and system alignment.

\_\_\_\_\_

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Date \_\_\_\_\_

## **8.0 RECORDS**

### **A. QA Records**

Completed Test Package

### **B. Non-QA Records**

None

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**Appendix A  
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**TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW**

Date \_\_\_\_\_

**NOTES**

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

<b>PROCEDURE/ INSTRUCTION</b>	<b>REVISION/CHANGES</b>	<b>IMPACT Yes/No</b>	<b>INITIAL AND DATE (N/A for no change)</b>
Unit 2 FSAR Section 6.2.4 Section 6.3.2.11.3 Section 9.3.3 Section 11.2 Table 14.2-1 Sheets 12, 28, 83 of 89			
2-TSD-77-3 Station Drainage, Waste Drains, and Collection			
N3-77C-4001, Liquid Waste Processing System			
WBN2-77C-4001, Liquid Waste Processing System			
2-TSD-88-5, Containment Isolation System			
SSD-2-LPL-77-125 (Review against SSD-1-LPL-77-125)			
SSD-2-PI-77-256 (Review against SSD-1-PI-77-256)			

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**Appendix A  
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**TEST PROCEDURES/INSTRUCTIONS REFERENCE REVIEW**

Date \_\_\_\_\_

<b>PROCEDURE/ INSTRUCTION</b>	<b>REVISION/CHANGES</b>	<b>IMPACT Yes/No</b>	<b>INITIAL AND DATE (N/A for no change)</b>
SSD-2-PI-77-255 (Review against SSD-1-PI-77-255)			
SSD-2-LPL-77-410 (Review against SSD-1-LPL-77-410)			
2-SOI-77.01 (Review against SOI-77.01)			

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**Appendix B**  
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## TEMPORARY CONDITION LOG

Date \_\_\_\_\_

## NOTE

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

[illegible]



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**Appendix C**  
**(Page 1 of 1)**  
**PERMANENT PLANT INSTRUMENTATION LOG**

Date \_\_\_\_\_

Instrument or Instrument Loop # (subsection #)	Cal Due Date	Filled & Vented <sup>1</sup>	Place in Service <sup>1</sup>	Used for Quantitative ACC CRIT <sup>2</sup>		Post-Test Cal Date OR CSI Number (Sump Level Elements)	Post-Test Cal Acceptable
				YES	NO		
2-LPL-77-125							Initial/Date
2-LPL-77-126							
2-LPL-77-410							
2-LPL-77-411							
2-PI-77-255							
2-PI-77-256							
2-LS-77-129							

<sup>1</sup> May be initialed and dated by personnel performing the task. If not required to be filled and vented, may be identified as NA.  
<sup>2</sup> All instruments listed are not used to verify/record quantitative acceptance criteria data.

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**Appendix D**  
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**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN SUMP PUMP 2A**

Date \_\_\_\_\_

$$TDH = \left( P_D - P_S \right) \frac{LB}{IN^2} \times \frac{144 \frac{IN^2}{FT^2}}{62.4 \frac{LB}{FT^3}}$$

[1] **RECORD** the following data:

A. Step 6.2[121]B

\_\_\_\_\_ GPM

\_\_\_\_\_ Flowmeter Minimum  
(From M&TE Issue Ticket)

\_\_\_\_\_ Flowmeter Maximum  
(From M&TE Issue Ticket)

\_\_\_\_\_ % Accuracy  
(From M&TE Issue Ticket)

B. Step 6.2[121]A

\_\_\_\_\_ in (Sump Level)

\_\_\_\_\_ Level Trans. Range  
(From SSD-2-LPL-77-125)

\_\_\_\_\_ % Accuracy  
(From SSD-2-LPL-77-125)

C. Step 6.2[121]C

\_\_\_\_\_ PSIG (discharge)

\_\_\_\_\_ Press. Gauge Range  
(From SSD-2-PI-77-256)

\_\_\_\_\_ Accuracy (Decimal)  
(From SSD-2-PI-77-256)

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**Appendix D**  
**(Page 2 of 3)**

**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN SUMP PUMP 2A**

Date \_\_\_\_\_

[2] **CALCULATE** the following:

$$h_{\text{SumpLevel}} = \frac{\text{SumpLevel}}{\text{SumpLevel}} \text{IN} \times \frac{1\text{FT}}{12\text{IN}} = \text{_____} \text{FT}$$

$$\text{Suction Press.} = \rho \times h \times \frac{g}{g_c} = 62.4 \frac{\text{LB}_M}{\text{FT}^3} \times \frac{\text{_____} \text{FT}}{h_{\text{SumpLevel}}} \times 1 \frac{\text{LB}_F}{\text{LB}_M}$$

$$\text{Suction Press} = \text{_____} \frac{\text{LB}_F}{\text{FT}^2} \times \frac{1\text{FT}^2}{144\text{IN}^2} = \text{_____} \frac{\text{LB}}{\text{IN}^2}$$

$$\text{TDH} = \left( \frac{\text{Discharge Press.}}{\text{Suction Press.}} \right) \frac{\text{LB}}{\text{IN}^2} \times \frac{144 \frac{\text{IN}^2}{\text{FT}^2}}{62.4 \frac{\text{LB}}{\text{FT}^3}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{2\text{-LT-77-125}} = \frac{\text{Range}_{2\text{-LT-77-125}}}{\text{Range}_{2\text{-LT-77-125}}} \times \frac{\text{Accuracy}_{\text{PERCENT}}}{\text{Accuracy}_{\text{PERCENT}}}$$

$$\text{Accuracy}_{2\text{-LT-77-125}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{2\text{-PI-77-256}} = \frac{\text{Range}_{2\text{-PI-77-256}}}{\text{Range}_{2\text{-PI-77-256}}} \times \frac{\text{Accuracy}_{\text{PERCENT}}}{\text{Accuracy}_{\text{PERCENT}}} \times 2.31$$

$$\text{Accuracy}_{2\text{-PI-77-256}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{\text{TDH}} = \left( \frac{\text{Accuracy}_{2\text{-LT-77-125}}}{\text{Accuracy}_{2\text{-LT-77-125}}} + \frac{\text{Accuracy}_{2\text{-PI-77-256}}}{\text{Accuracy}_{2\text{-PI-77-256}}} \right)$$

$$\text{Accuracy}_{\text{TDH}} = \text{_____} \text{FT}$$

$$\text{AdjustedTDH} = \text{TDH} - \text{Accuracy}_{\text{TDH}}$$

$$\text{AdjustedTDH} = \text{_____} \text{FT}$$

Adjusted TDH must be  $\geq 70$  FT (**ACC CRIT**)

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Appendix D  
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REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN SUMP PUMP 2A

Date \_\_\_\_\_

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{Range} \times \text{Accuracy}$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \left( \frac{\text{Maximum}}{\text{Minimum}} - 1 \right) \text{GPM} \times \left( \frac{\text{Accuracy}}{\text{Accuracy}} \right)$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{_____ GPM}$$

$$\text{AdjustedFlow} = \frac{\text{Flow}_{\text{MEASURED}}}{\text{Accuracy}_{\text{FLOWMETER}}} - \text{_____}$$

$$\text{AdjustedFlow} = \text{_____ GPM}$$

Adjusted Flow must be  $\geq 50$  GPM (**ACC CRIT**)

Calculations Performed By: \_\_\_\_\_

Calculations Verified By: \_\_\_\_\_

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**Appendix E**  
**(Page 1 of 3)**

**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN SUMP PUMP 2B**

Date \_\_\_\_\_

$$TDH = \left( P_D - P_S \right) \frac{LB}{IN^2} \times \frac{144 \frac{IN^2}{FT^2}}{62.4 \frac{LB}{FT^3}}$$

[3] **RECORD** the following data:

A. Step 6.2[144]B

\_\_\_\_\_ GPM

\_\_\_\_\_ Flowmeter Minimum  
(From M&TE Issue Ticket)

\_\_\_\_\_ Flowmeter Maximum  
(From M&TE Issue Ticket)

\_\_\_\_\_ Accuracy (Decimal)  
(From M&TE Issue Ticket)

B. Step 6.2[144]A

\_\_\_\_\_ IN (Sump Level)

\_\_\_\_\_ Level Trans. Range  
(From SSD-2-LPL-77-125)

\_\_\_\_\_ Accuracy (Decimal)  
(From SSD-2-LPL-77-125)

C. Step 6.2[144]C

\_\_\_\_\_ PSIG (discharge)

\_\_\_\_\_ Press. Gauge Range  
(From SSD-2-PI-77-255)

\_\_\_\_\_ Accuracy (Decimal)  
(From SSD-2-PI-77-255)

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**Appendix E**  
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**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN SUMP PUMP 2B**

Date \_\_\_\_\_

[4] **CALCULATE** the following:

$$h_{\text{SumpLevel}} = \frac{\text{SumpLevel}}{\text{SumpLevel}} \text{IN} \times \frac{1\text{FT}}{12\text{IN}} = \text{_____} \text{FT}$$

$$\text{Suction Press.} = \rho \times h \times \frac{g}{g_c} = 62.4 \frac{\text{LB}_M}{\text{FT}^3} \times \frac{\text{_____}}{h_{\text{SumpLevel}}} \text{FT} \times 1 \frac{\text{LB}_F}{\text{LB}_M}$$

$$\text{Suction Press} = \text{_____} \frac{\text{LB}_F}{\text{FT}^2} \times \frac{1\text{FT}^2}{144\text{IN}^2} = \text{_____} \frac{\text{LB}}{\text{IN}^2}$$

$$\text{TDH} = \left( \frac{\text{_____}}{\text{Discharge Press.}} - \frac{\text{_____}}{\text{Suction Press.}} \right) \frac{\text{LB}}{\text{IN}^2} \times \frac{144 \frac{\text{IN}^2}{\text{FT}^2}}{62.4 \frac{\text{LB}}{\text{FT}^3}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{2\text{-LT-77-125}} = \frac{\text{_____}}{\text{Range}_{2\text{-LT-77-125}}} \times \frac{\text{_____}}{\text{Accuracy}}$$

$$\text{Accuracy}_{2\text{-LT-77-125}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{2\text{-PI-77-255}} = \frac{\text{_____}}{\text{Range}_{2\text{-PI-77-255}}} \times \frac{\text{_____}}{\text{Accuracy}} \times 2.31$$

$$\text{Accuracy}_{2\text{-PI-77-255}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{\text{TDH}} = \left( \frac{\text{_____}}{\text{Accuracy}_{2\text{-LT-77-125}}} + \frac{\text{_____}}{\text{Accuracy}_{2\text{-PI-77-255}}} \right)$$

$$\text{Accuracy}_{\text{TDH}} = \text{_____} \text{FT}$$

$$\text{AdjustedTDH} = \text{TDH} - \text{Accuracy}_{\text{TDH}}$$

$$\text{AdjustedTDH} = \text{_____} \text{FT}$$

Adjusted TDH must be  $\geq 70$  FT (**ACC CRIT**)

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**Appendix E**  
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**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN SUMP PUMP 2B**

Date \_\_\_\_\_

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{Range} \times \text{Accuracy}$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \left( \frac{\text{Maximum}}{\text{Minimum}} - \frac{\text{Minimum}}{\text{Maximum}} \right) \text{GPM} \times \left( \frac{\text{Accuracy}}{\text{Accuracy}} \right)$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{_____ GPM}$$

$$\text{AdjustedFlow} = \frac{\text{Flow}_{\text{MEASURED}}}{\text{Accuracy}_{\text{FLOWMETER}}} - \frac{\text{Accuracy}_{\text{FLOWMETER}}}{\text{Accuracy}_{\text{FLOWMETER}}}$$

$$\text{AdjustedFlow} = \text{_____ GPM}$$

Adjusted Flow must be  $\geq 50$  GPM (**ACC CRIT**)

Calculations Performed By: \_\_\_\_\_

Calculations Verified By: \_\_\_\_\_

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**Appendix F**  
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**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN POCKET SUMP 2A**

Date \_\_\_\_\_

$$TDH = \left( P_D - P_S \right) \frac{LB}{IN^2} \times \frac{144 \frac{IN^2}{FT^2}}{62.4 \frac{LB}{FT^3}}$$

[5] **RECORD** the following data:

A. Step 6.4[25]B

\_\_\_\_\_ GPM

\_\_\_\_\_ Flowmeter Minimum  
(From M&TE Issue Ticket)

\_\_\_\_\_ Flowmeter Maximum  
(From M&TE Issue Ticket)

\_\_\_\_\_ Accuracy (Decimal)  
(From M&TE Issue Ticket)

B. Step 6.4[25]A

\_\_\_\_\_ IN (Sump Level)

\_\_\_\_\_ Level Trans. Range  
(From SSD-2-LPL-77-410)

\_\_\_\_\_ Accuracy (Decimal)  
(From SSD-2-LPL-77-410)

C. Step 6.4[25]C

\_\_\_\_\_ PSIG (discharge)

\_\_\_\_\_ Press. Gauge Range  
(From M&TE Issue Ticket)

\_\_\_\_\_ Accuracy (Decimal)  
(From M&TE Issue Ticket)



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**Appendix F  
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**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN POCKET SUMP 2A**

Date \_\_\_\_\_

[6] **CALCULATE** the following:

$$h_{\text{SumpLevel}} = \frac{\text{SumpLevel}}{\text{SumpLevel}} \text{IN} \times \frac{1\text{FT}}{12\text{IN}} = \text{_____ FT}$$

$$\text{Suction Press.} = \rho \times h \times \frac{g}{g_c} = 62.4 \frac{\text{LB}_M}{\text{FT}^3} \times \frac{\text{_____ FT}}{h_{\text{SumpLevel}}} \times 1 \frac{\text{LB}_F}{\text{LB}_M}$$

$$\text{Suction Press} = \frac{\text{LB}_F}{\text{FT}^2} \times \frac{1\text{FT}^2}{144\text{IN}^2} = \frac{\text{LB}}{\text{IN}^2}$$

$$\text{TDH} = \left( \frac{\text{Discharge Press.}}{\text{Suction Press.}} \right) \frac{\text{LB}}{\text{IN}^2} \times \frac{144 \frac{\text{IN}^2}{\text{FT}^2}}{62.4 \frac{\text{LB}}{\text{FT}^3}} = \text{_____ FT}$$

$$\text{Accuracy}_{2\text{-LT-77-410}} = \frac{\text{_____}}{\text{Range}_{2\text{-LT-77-410}}} \times \frac{\text{Accuracy}_{\text{PERCENT}}}{\text{Accuracy}_{\text{PERCENT}}}$$

$$\text{Accuracy}_{2\text{-LT-77-410}} = \text{_____ FT}$$

$$\text{Accuracy}_{\text{M\&TE PressGauge}} = \frac{\text{_____}}{\text{Range}_{\text{M\&TE PressGauge}}} \times \frac{\text{Accuracy}}{\text{Accuracy}} \times 2.31$$

$$\text{Accuracy}_{\text{M\&TE PressGauge}} = \text{_____ FT}$$

$$\text{Accuracy}_{\text{TDH}} = \left( \frac{\text{Accuracy}_{2\text{-LT-77-410}}}{\text{Accuracy}_{2\text{-LT-77-410}}} + \frac{\text{Accuracy}_{\text{M\&TE PressGauge}}}{\text{Accuracy}_{\text{M\&TE PressGauge}}} \right)$$

$$\text{Accuracy}_{\text{TDH}} = \text{_____ FT}$$

$$\text{AdjustedTDH} = \text{TDH} - \text{Accuracy}_{\text{TDH}}$$

$$\text{AdjustedTDH} = \text{_____ FT}$$

Adjusted TDH must be  $\geq 40$  FT (**ACC CRIT**)

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**Appendix F**  
**(Page 3 of 3)**

**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN POCKET SUMP 2A**

Date \_\_\_\_\_

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{Range} \times \text{Accuracy}$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \left( \frac{\text{Maximum}}{\text{Minimum}} - \frac{\text{Minimum}}{\text{Maximum}} \right) \text{GPM} \times \left( \frac{\text{Accuracy}}{\text{Accuracy}} \right)$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{_____ GPM}$$

$$\text{AdjustedFlow} = \frac{\text{Flow}_{\text{MEASURED}}}{\text{Accuracy}_{\text{FLOWMETER}}} - \frac{\text{Accuracy}_{\text{FLOWMETER}}}{\text{Accuracy}_{\text{FLOWMETER}}}$$

$$\text{AdjustedFlow} = \text{_____ GPM}$$

Adjusted Flow must be  $\geq 120$  GPM (**ACC CRIT**)

Calculations Performed By: \_\_\_\_\_

Calculations Verified By: \_\_\_\_\_

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**Appendix G**  
**(Page 1 of 3)**

**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN POCKET SUMP 2B**

Date \_\_\_\_\_

$$TDH = \left( P_D - P_S \right) \frac{LB}{IN^2} \times \frac{144 \frac{IN^2}{FT^2}}{62.4 \frac{LB}{FT^3}}$$

[7] **RECORD** the following data:

A. Step 6.4[30]B

\_\_\_\_\_ GPM

\_\_\_\_\_ Flowmeter Minimum  
(From M&TE Issue Ticket)

\_\_\_\_\_ Flowmeter Maximum  
(From M&TE Issue Ticket)

\_\_\_\_\_ Accuracy (Decimal)  
(From M&TE Issue Ticket)

B. Step 6.4[30]A

\_\_\_\_\_ IN (Sump Level)

\_\_\_\_\_ Level Trans. Range  
(From SSD-2-LPL-77-410)

\_\_\_\_\_ Accuracy (Decimal)  
(From SSD-2-LPL-77-410)

C. Step 6.4[30]C

\_\_\_\_\_ PSIG (discharge)

\_\_\_\_\_ Press. Gauge Range  
(From M&TE Issue Ticket)

\_\_\_\_\_ Accuracy (Decimal)  
(From M&TE Issue Ticket)

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**Appendix G  
(Page 2 of 3)**

**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN POCKET SUMP 2B**

Date \_\_\_\_\_

[8] **CALCULATE** the following:

$$h_{\text{SumpLevel}} = \frac{\text{SumpLevel}}{\text{SumpLevel}} \text{IN} \times \frac{1\text{FT}}{12\text{IN}} = \text{_____} \text{FT}$$

$$\text{Suction Press.} = \rho \times h \times \frac{g}{g_c} = 62.4 \frac{\text{LB}_M}{\text{FT}^3} \times \frac{\text{_____} \text{FT}}{h_{\text{SumpLevel}}} \times 1 \frac{\text{LB}_F}{\text{LB}_M}$$

$$\text{Suction Press} = \frac{\text{LB}_F}{\text{FT}^2} \times \frac{1\text{FT}^2}{144\text{IN}^2} = \frac{\text{LB}}{\text{IN}^2}$$

$$\text{TDH} = \left( \frac{\text{Discharge Press.}}{\text{Suction Press.}} \right) \frac{\text{LB}}{\text{IN}^2} \times \frac{144 \frac{\text{IN}^2}{\text{FT}^2}}{62.4 \frac{\text{LB}}{\text{FT}^3}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{2\text{-LT-77-410}} = \frac{\text{_____}}{\text{Range}_{2\text{-LT-77-410}}} \times \text{Accuracy}_{\text{PERCENT}}$$

$$\text{Accuracy}_{2\text{-LT-77-410}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{\text{M\&TE PressGauge}} = \frac{\text{_____}}{\text{Range}_{\text{M\&TE PressGauge}}} \times \frac{\text{_____}}{\text{Accuracy}} \times 2.31$$

$$\text{Accuracy}_{\text{M\&TE PressGauge}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{\text{TDH}} = \left( \frac{\text{Accuracy}_{2\text{-LT-77-410}}}{\text{Accuracy}_{2\text{-LT-77-410}}} + \frac{\text{Accuracy}_{\text{M\&TE PressGauge}}}{\text{Accuracy}_{\text{M\&TE PressGauge}}} \right)$$

$$\text{Accuracy}_{\text{TDH}} = \text{_____} \text{FT}$$

$$\text{AdjustedTDH} = \text{TDH} - \text{Accuracy}_{\text{TDH}}$$

$$\text{AdjustedTDH} = \text{_____} \text{FT}$$

Adjusted TDH must be  $\geq 40$  FT (**ACC CRIT**)

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**Appendix G**  
**(Page 3 of 3)**

**REACTOR BUILDING FLOOR AND EQUIPMENT DRAIN POCKET SUMP 2B**

Date \_\_\_\_\_

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{Range} \times \text{Accuracy}$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \left( \frac{\text{Maximum}}{\text{Minimum}} - 1 \right) \text{GPM} \times \left( \frac{\text{Accuracy}}{\text{Accuracy}} \right)$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{_____ GPM}$$

$$\text{AdjustedFlow} = \frac{\text{Flow}_{\text{MEASURED}}}{\text{Accuracy}_{\text{FLOWMETER}}} - \text{_____}$$

$$\text{AdjustedFlow} = \text{_____ GPM}$$

Adjusted Flow must be  $\geq 120$  GPM (**ACC CRIT**)

Calculations Performed By: \_\_\_\_\_

Calculations Verified By: \_\_\_\_\_

WBN Unit 2	LIQUID WASTE COLLECTION	2-PTI-077-03 Rev. 0001 Page 141 of 148
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**Appendix H  
(Page 1 of 3)**

**CONTAINMENT PIT SUMP EJECTOR PUMP**

Date \_\_\_\_\_

$$TDH = (P_D - P_S) \frac{LB}{IN^2} \times \frac{144 \frac{IN^2}{FT^2}}{62.4 \frac{LB}{FT^3}}$$

[9] **RECORD** the following data:

A. Step 6.5[8]B

\_\_\_\_\_ GPM

\_\_\_\_\_ Flowmeter Minimum

\_\_\_\_\_ Flowmeter Maximum

\_\_\_\_\_ Accuracy (decimal)

B. Step 6.5[8]A

\_\_\_\_\_ IN (Sump Level)

\_\_\_\_\_ Accuracy (decimal)

C. Step 6.5[8]C

\_\_\_\_\_ PSIG (discharge)

\_\_\_\_\_ Press. Gauge Range

\_\_\_\_\_ Accuracy (decimal)

WBN Unit 2	LIQUID WASTE COLLECTION	2-PTI-077-03 Rev. 0001 Page 142 of 148
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**Appendix H  
(Page 2 of 3)**

**CONTAINMENT PIT SUMP EJECTOR PUMP**

Date \_\_\_\_\_

[10] **CALCULATE** the following:

$$\text{SumpLevel}_{\text{ADJ}} = \frac{\text{SumpLevel}}{\text{SumpLevel}} - 2.375\text{IN} = \text{_____} \text{IN}$$

$$h_{\text{SumpLevel}} = \frac{\text{SumpLevel}_{\text{ADJ}}}{\text{SumpLevel}_{\text{ADJ}}} \times \frac{1\text{FT}}{12\text{IN}} = \text{_____} \text{FT}$$

$$\text{Suction Press.} = \rho \times h \times \frac{g}{g_c} = 62.4 \frac{\text{LB}_M}{\text{FT}^3} \times \frac{\text{_____} \text{FT}}{h_{\text{SumpLevel}}} \times 1 \frac{\text{LB}_F}{\text{LB}_M}$$

$$\text{Suction Press} = \text{_____} \frac{\text{LB}_F}{\text{FT}^2} \times \frac{1\text{FT}^2}{144\text{IN}^2} = \text{_____} \frac{\text{LB}}{\text{IN}^2}$$

$$\text{TDH} = \left( \frac{\text{Discharge Press.}}{\text{Discharge Press.}} - \frac{\text{Suction Press.}}{\text{Suction Press.}} \right) \frac{\text{LB}}{\text{IN}^2} \times \frac{144 \frac{\text{IN}^2}{\text{FT}^2}}{62.4 \frac{\text{LB}}{\text{FT}^3}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{\text{Level}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{\text{PressGauge}} = \frac{\text{_____}}{\text{Range}_{\text{PressGauge}}} \times \frac{\text{_____}}{\text{Accuracy}} \times 2.31$$

$$\text{Accuracy}_{\text{PressGauge}} = \text{_____} \text{FT}$$

$$\text{Accuracy}_{\text{TDH}} = \left( \frac{\text{Accuracy}_{\text{Level}}}{\text{Accuracy}_{\text{Level}}} + \frac{\text{Accuracy}_{\text{PressGauge}}}{\text{Accuracy}_{\text{PressGauge}}} \right)$$

$$\text{Accuracy}_{\text{TDH}} = \text{_____} \text{FT}$$

$$\text{AdjustedTDH} = \text{TDH} - \text{Accuracy}_{\text{TDH}}$$

$$\text{AdjustedTDH} = \text{_____} \text{FT}$$

Adjusted TDH must be  $\geq 70$  FT (**ACC CRIT**)

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Appendix H  
(Page 3 of 3)

CONTAINMENT PIT SUMP EJECTOR PUMP

Date \_\_\_\_\_

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{Range} \times \text{Accuracy}$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \left( \frac{\text{Maximum}}{\text{Minimum}} - \frac{\text{Minimum}}{\text{Maximum}} \right) \text{GPM} \times \left( \frac{\text{Accuracy}}{\text{Accuracy}} \right)$$

$$\text{Accuracy}_{\text{FLOWMETER}} = \text{_____ GPM}$$

$$\text{AdjustedFlow} = \frac{\text{Flow}_{\text{MEASURED}}}{\text{Accuracy}_{\text{FLOWMETER}}} - \frac{\text{Accuracy}_{\text{FLOWMETER}}}{\text{Accuracy}_{\text{FLOWMETER}}}$$

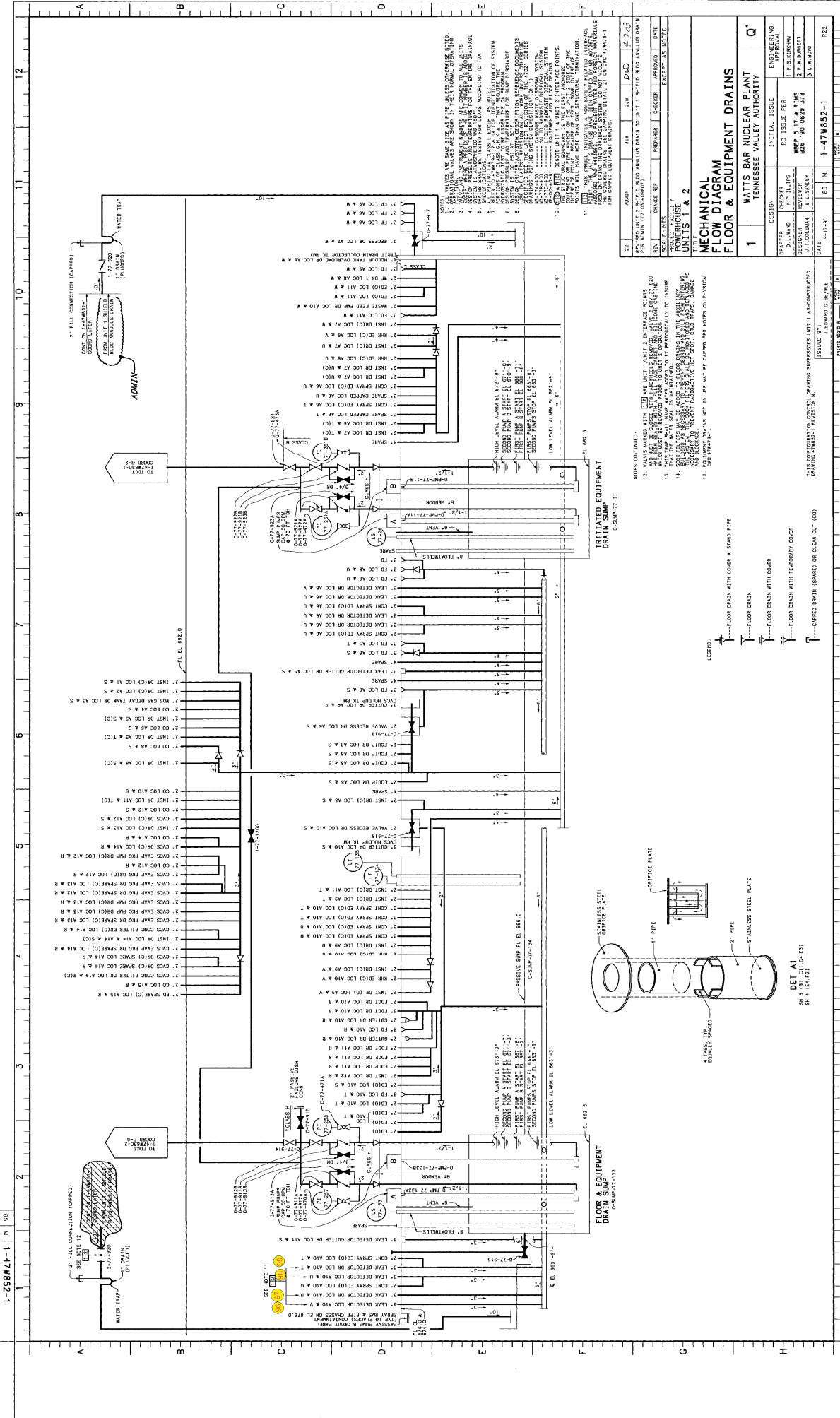
$$\text{AdjustedFlow} = \text{_____ GPM}$$

Adjusted Flow must be  $\geq 10$  GPM (**ACC CRIT**)

Calculations Performed By: \_\_\_\_\_

Calculations Verified By: \_\_\_\_\_





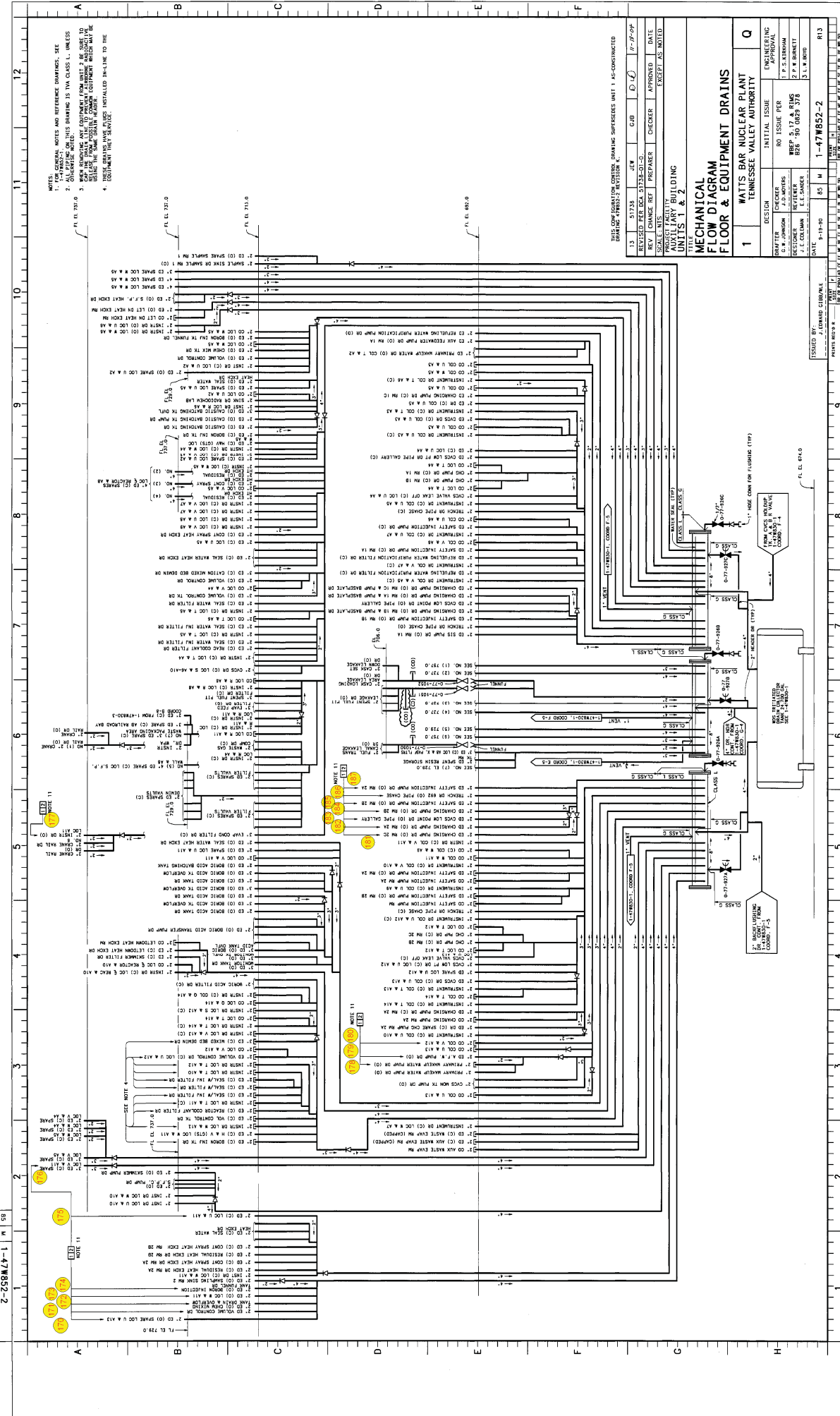
22	ADMIN	DATE	8/8	8/8	10-00	10-00
FOR UNIT 2 LIQUID WASTE COLLECTION TO UNIT 1 SHIELD BUILDING WASTE						
REV	CHANGE REF	PREPARED	DESIGNED	APPROVED	DATE	
1						
SCALE: NTS						
POWERHOUSE						
UNITS 1 & 2						
EXCEPT AS NOTED						
MECHANICAL FLOOR & EQUIPMENT DRAINS						
WATTS BAR NUCLEAR PLANT						
TENNESSEE VALLEY AUTHORITY						
DESIGN	INITIAL	ISSUE				
DRYER	COCKER	NO ISSUE PER				
D.L. WARD	PHILLIPS	P.S. KERNON				
DESIGNER	REVIEWER	DATE				
J. COLEMAN	W. L. BAKER	8/8/78				
D.L. WARD		8/8/78				
D.L. WARD		8/8/78				
DATE	ISSUED BY	ISSUE NO.	ISSUE			
8/17/80	85	1	1-47W852-1			
8/17/80	85	1	1-47W852-1			
8/17/80	85	1	1-47W852-1			

CONF IGURATION CONTROL DRAWING

CAD MAINTAINED DRAWING

NOTES CONTINUED:  
12. VALVES MARKED WITH [X] ARE UNIT 1/UNIT 2 INTERFERENCE POINTS AND ARE TO BE MAINTAINED IN THE OPEN POSITION.  
13. THIS MAP SHALL HAVE WATER ADDED TO IT PERIODICALLY TO INSURE PROPER OPERATION OF THE SYSTEM.  
14. SUMP ALARMS MAY BE ADDED TO FLOOR DRAINS IN THE FUTURE. THE SUMP ALARMS SHALL BE ADDED TO THE FLOOR DRAINS IN THE FUTURE. THE SUMP ALARMS SHALL BE ADDED TO THE FLOOR DRAINS IN THE FUTURE.  
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BS 1-47852-2

NOTES:  
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS, SEE  
2. ALL LAYOUTS ON THIS DRAWING IS TWO CLASS L, UNLESS  
3. OTHERWISE NOTED. THE COMPANY SHALL BE RESPONSIBLE FOR  
4. OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE  
5. INSTALLATION OF THE EQUIPMENT AND MATERIALS SHOWN ON THIS  
6. DRAWING. THE COMPANY SHALL BE RESPONSIBLE FOR THE  
7. PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.  
8. THE COMPANY SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL  
9. EXISTING UTILITIES AND STRUCTURES.

REVISIONS		DATE	BY	CHKD	APP'D	DESCRIPTION
1	01/23/20	J.W.	J.W.	J.W.	J.W.	AS CONSTRUCTED
2	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
3	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
4	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
5	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
6	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
7	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
8	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
9	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
10	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
11	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
12	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
13	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
14	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
15	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
16	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
17	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
18	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
19	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
20	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
21	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
22	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
23	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
24	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
25	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
26	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
27	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
28	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
29	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
30	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
31	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
32	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
33	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
34	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
35	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
36	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
37	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
38	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
39	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
40	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
41	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
42	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
43	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
44	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
45	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
46	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
47	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
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52	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
53	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
54	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
55	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
56	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
57	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
58	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
59	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
60	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
61	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
62	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
63	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
64	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
65	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
66	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
67	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
68	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
69	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
70	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
71	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
72	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
73	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
74	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
75	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
76	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
77	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
78	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
79	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
80	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
81	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
82	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
83	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
84	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
85	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
86	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
87	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
88	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
89	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
90	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
91	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
92	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
93	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
94	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
95	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
96	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
97	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
98	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
99	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0
100	01/23/20	J.W.	J.W.	J.W.	J.W.	REVISED PER ICA 3732-01-0

CONFIRMATION CONTROL DRAWING

CAD MAINTAINED DRAWING

ISSUED BY: J. LEWIS, GEORGETOWN, MS  
DATE: 9-19-90  
PROJECT NO: 1-47852-2  
R13

DESIGN  
CHECKER: J. LEWIS  
REVIEWER: J. LEWIS  
DATE: 9-19-90  
PROJECT NO: 1-47852-2  
R13

ENGINEERING  
CHECKER: J. LEWIS  
REVIEWER: J. LEWIS  
DATE: 9-19-90  
PROJECT NO: 1-47852-2  
R13

NO ISSUE PER  
P. J. KIRKHAM  
DATE: 9-19-90  
PROJECT NO: 1-47852-2  
R13

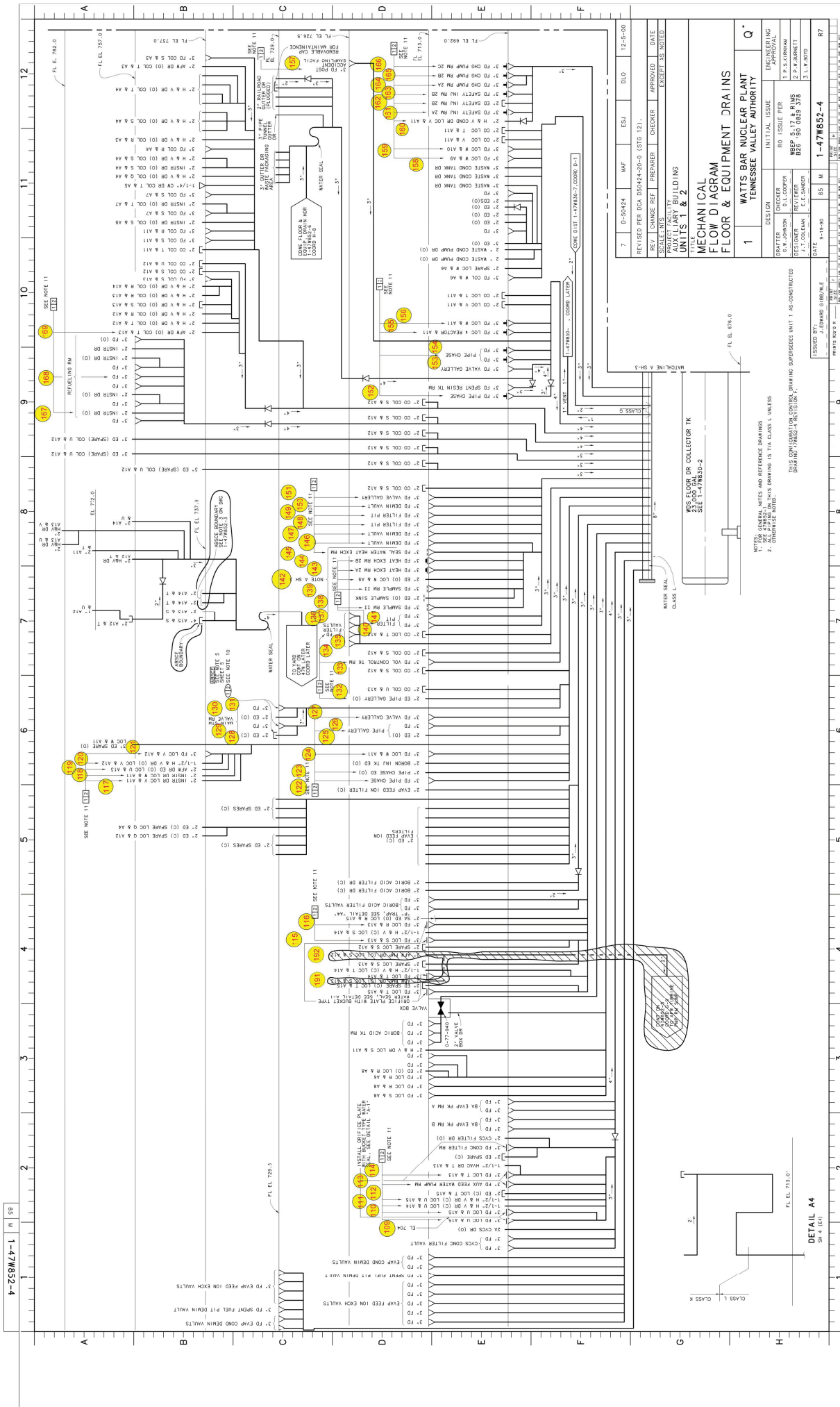
NO ISSUE PER  
P. J. KIRKHAM  
DATE: 9-19-90  
PROJECT NO: 1-47852-2  
R13

NO ISSUE PER  
P. J. KIRKHAM  
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DATE: 9-19-90  
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R13





CONFIGURATION CONTROL DRAWING

CAD MAINTAINED DRAWING

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