RTYPE H6.08

PILGRIM NUCLEAR POWER STATION

Procedure No. 8.M.2-2.5.6

HPCI CONDENSATE STORAGE TANK LEVEL

Stop
Think
Act
Review

CONTINUOUS USE

MSTP RELATED

LSFT RELATED

REVISION LOG

REVISION 32 **Date Originated 7/07**

Pages Affected	Description
6	Remove TS Clarification No. 89-01 parenthetical reference.
31	Correct referenced Acceptance Criteria step number.

REVISION 31 **Date Originated 11/05**

Pages Affected	Description
	(Revisions 25 through 30 omitted due to MERLIN revision numbering scheme.)
28	Incorporate EWN-05-06805 to clarify Attachment 2 Steps [31](e) and (f) for use of digital timers.

REVISION 24 **Date Originated 3/04**

Pages Affected	Description
10,18,31	Allow Maintenance Lead to perform Maintenance Management functions/responsibilities.
12,20	Add "if required" to PEB step.

TABLE OF CONTENTS

1.0 PURPOSE AND SCOPE

This Procedure provides Maintenance personnel the instructions for performance of an Instrument Functional or Instrument Functional and Calibration Test as required by the following Technical Specifications surveillance requirements for the equipment listed. This Procedure partially satisfies the LSFT requirements of Technical Specifications Table 4.2.B Item 4, including the SAA Note (4) and Timer Note (6) for the HPCI subsystem.

TECHNICAL SPECIFICATIONS SURVEILLANCE REQUIREMENTS	EQUIPMENT
4.2.B PROTECTIVE INSTRUMENTATION - Core and Containment Cooling Systems - Initiation & Control	Pressure Switches
HPCI Suction Tank Levels [Monthly Functional Test Tech Spec Table 4.2.B, Item 14] ✓	23-PS-2390A 23-PS-2390B
HPCI Suction Tank Levels [Quarterly Functional and Calibration Test Tech Spec Table 4.2.B, Item 14] ✓	

2.0 REFERENCES

2.1 DEVELOPMENTAL

[1] Entergy Quality Assurance Program Manual (QAPM)

[2] NRCCC Item PAPR 020 (Pre-Evolution Briefing)

[3] Technical Specifications Bases Sections 3.2 and 4.2

2.2 IMPLEMENTING

[1] Calculation E-634-3, "Setpoint Calculation for PS-2390A & B"

[2] GE Instrument Data Sheet, 225A5750, Sheet 60

[3] PDC87-78C, Improvements to Labels, Nameplates on Main Control Room Panels

[4] PNPS 1.3.34, *"Operations Administrative Policies and Processes"*

[5] PNPS Elementary Diagrams - HPCI System

(a) M1J 14-14

(b) M1J 16-10

(c) M1J 17-12

(d) MIJ 19-9

(e) M1J 20-5

[6] PNPS Piping and Instrumentation Diagrams (P&IDs)

(a) M209, Cond & Demin Water Storage and Transfer System

(b) M243, High Pressure Coolant Injection (HPCI) System

(c) M244 Sheet 1, HPCI System

(d) M244 Sheet 2, HPCI System

[7] PNPS Technical Specifications

(a) Section 3.2.B, Table 3.2.B: "Instrumentation that Initiates or Controls the Core and Containment Cooling Systems"

(b) Section 4.2.B, Table 4.2.B, Item 14; "Minimum Test and Calibration Frequency for CSCS, HPCI Suction Tank Levels"

(c) Section 4.2.B; Table 4.2.B, Item 4; "Minimum Test and Calibration Frequency for CSCS Logic System Functional Test, HPCI Subsystem"

[8] Vendor Manual V-0113, "Static-O-Ring"

3.0 DEFINITIONS

None

4.0 DISCUSSION

[1] Impact on Operations

NOTE
Close signal to MO-2301-6 is generated from MO-2301-35 and MO-2301-36 being full open. MO-2301-35 and MO-2301-36 being full open will also generate a close signal to HPCI/RCIC Test Return Valve MO-2301-15 and Full Flow Test Valve MO-2301-10.

(a) Surveillance Summary

This Procedure tests the Condensate Storage Tank (CST) low level logic by simulating a low level condition which provides an open signal to Torus Suction Valves MO-2301-35 and MO-2301-36 and a close signal to CST Suction Valve MO-2301-6 if an auto-isolation signal is not present. Attachment 1 performs a functional test of pressure switches 23-PS-2390A and 23-PS-2390B. Attachment 2 performs a functional and calibration of pressure switches 23-PS-2390A and 23-PS-2390B.

(b) Impact

HPCI will be available during performance of Attachments 1 and 2 as no loss of suction path occurs, but Condensate Storage Tank low level instrumentation will be less than the minimum number of operable channels during calibration. Therefore, HPCI is inoperable (Technical Specifications Table 3.2.B Note 1).

(c) Technical Specifications

(1) Section 3.5.C

(2) Tables 3.2.B/4.2.B

[2] The pressure switches (23-PS-2390A, 23-PS-2390B) tested by this Procedure monitor the water levels in the Condensate Storage Tank. Upon sensing a low Condensate Storage Tank water level, these switches provide control logic signals which automatically close MO-2301-6 and open MO-2301-35 and MO-2301-36 to supply water to the HPCI pump suction if the HPCI isolation signal is not activated.

The following components are affected by this Procedure:

(a) MO-2301-6 (CST SUCT VLV)

(b) MO-2301-35 (TORUS SUCT VLV)

(c) MO-2301-36 (TORUS SUCT VLV)

[3] The Instrument Functional/Calibration Test shall be done in accordance with Technical Specifications Sections 3.2.B and 4.2.B.

5.0 SPECIAL TOOLS AND EQUIPMENT

[1] Pneumatic calibrator/test gauge accurate to 0.03 psig or better

[2] Portable communication equipment

[3] Digital multimeter (DMM) or equivalent

[4] Calibrated chart recorder or digital timer (required for relay 23A-K15 calibration only)

[5] Torquing screwdriver capable of 11 inch-pounds

6.0 PRECAUTIONS AND LIMITATIONS

6.1 PRECAUTIONS

[1] One pressure switch shall be tested or disabled at a time, unless otherwise directed by this Procedure.

[2] Unless otherwise directed, the pressure switches under test shall be individually isolated in accordance with the applicable Attachment provided for the pressure switch under test.

[3] All applicable plant radiological precautions shall be observed during the performance of this Procedure to reduce exposure to radiation and spread of contamination.

(a) Use an appropriate catch-container and absorbent material when connecting and removing test equipment.

[4] Use caution while working on energized circuits to protect personnel and prevent damage to plant equipment.

[5] Personnel must be informed of the Halon fire protection system in the Cable Spreading Room. Prior to the release of the Halon, an alarm will sound and personnel must vacate the area immediately.

[6] Use caution when making valve test connections; high pressure may be present.

[7] When opening test connections or venting instrumentation, trap water in an appropriate container to prevent spread of contamination.

[8] All procedural steps are to be performed as written and followed to completion unless otherwise directed.

[9] Maintenance Supervision shall be consulted prior to annotating "N/P" (for "not performed") for any step which does not contain conditional steps.

6.2 LIMITATIONS

[1] Refer to Technical Specifications Table 3.2.B for the required number of operable instrument channels.

7.0 PREREQUISITES

[1] Except for ALARA reasons or during plant emergencies, this Procedure may be performed during any plant condition.

[2] Contact Radiation Protection (RP) prior to work in process areas. Follow RP directions. Obtain a Radiation Work Permit (RWP), if required.

[3] Obtain approval of the on-shift SRO prior to starting this test.

8.0 PROCEDURE

[1] IF any abnormal condition is encountered during this test, **NOTIFY** Maintenance Supervision for corrective action AND **DOCUMENT** under Discrepancies.

[2] **PERFORM** the procedural steps for each Attachment in the sequence as written, unless otherwise directed.

[3] "N/P" (for "not performed") may be placed by a procedural step where performance of that step has been conditionally stated and the condition(s) is not met.

[4] **PRIOR** to commencing performance of the Instrument Functional or Instrument Functional and Calibration Test, **PROVIDE** the Shift Manager (SM) with Attachment 3.

[5] IF an Instrument Functional Test performance is required, THEN **REFER TO** AND **PERFORM** the steps as written in Attachment 1.

[6] IF an Instrument Functional and Calibration Test performance is required, THEN **REFER TO** AND **PERFORM** the steps as written in Attachment 2.

9.0 ACCEPTANCE CRITERIA

[1] The Acceptance Criteria for performance of Attachment 1 are as follows:

(a) The pressure switch(es) functioned as required, as indicated by activation of associated channel relays, providing a signal to the appropriate annunciator circuitry and the HPCI subsystem auto valve logic. **[Tech Spec Table 4.2.B, Item 14]**

(b) The pressure switch(es) returned to service with verification of restoration as indicated by two persons' initials. **[NUREG 0737, I.C.6]**

[2] The Acceptance Criteria for performance of Attachment 2 are as follows:

(a) The pressure switch(es) "As-Found" setpoint(s) was within the No Adjust Limits or a calibration was performed and the "As-Left" setpoint(s) is within the No Adjust Limits during simulation of a HPCI Condensate Storage Tank level signal. **[Tech Spec Table 4.2.B, Item 14]**

(b) The pressure switch(es) functioned as required, as indicated by activation of associated channel relays, providing a signal to the appropriate annunciator circuitry and the HPCI subsystem valve logic. **[Tech Spec Table 4.2.B, Item 13]**

(c) During HPCI Condensate Storage Tank level signal simulation, HPCI subsystem relays, components, and alarms functioned as required partially satisfying the Tech Spec requirements in accordance with the LSFT data base. **[Tech Spec Table 4.2.B, LSFT Item 3, SAA Note (4) & Timer Note (6)]**

(d) The pressure switch(es) returned to service with verification that the system has been returned to pretest configuration. **[NUREG 0737, I.C.6]**

10.0 CORRECTIVE ACTION

[1] If equipment failed to perform its intended function or a discrepancy is encountered during test, discontinue testing and immediately notify the Maintenance Supervisor and the on-shift SRO. The Maintenance Supervisor and the on-shift SRO must determine whether testing should be terminated, continued, or an investigation be performed.

[2] If equipment failed to perform its intended function, the appropriate corrective action document shall be initiated. The on-shift SRO must be notified of the failure to allow Operations to initiate action deemed necessary in accordance with PNPS Technical Specifications Table 3.2.B.

11.0 ACCEPTANCE VERIFICATION AND SIGNOFF

[1] Maintenance Management/Lead is responsible for reviewing this Procedure to ensure all Acceptance Criteria have been satisfied prior to taking credit for test performance in the Master Surveillance Tracking Program (MSTP).

[2] Maintenance Management/Lead shall review steps marked as "N/P" to verify correct component response(s) and proper data gathering.

[3] The on-shift SRO shall verify that all Acceptance Criteria were met and evaluate any discrepancies for acceptability.

12.0 ATTACHMENTS

ATTACHMENT 1 - HPCI CONDENSATE STORAGE TANK LEVEL INSTRUMENT FUNCTIONAL TEST

ATTACHMENT 2 - HPCI CONDENSATE STORAGE TANK LEVEL INSTRUMENT FUNCTIONAL AND CALIBRATION TEST

ATTACHMENT 3 - HPCI CONDENSATE STORAGE TANK LEVEL - ASSOCIATED ALARMS AND ACTUATIONS

ATTACHMENT 4 - I&C PROCEDURE FEEDBACK FORM

HPCI CONDENSATE STORAGE TANK LEVEL INSTRUMENT FUNCTIONAL TEST

[1] **PERFORM** the steps in the order they are written. After each step with a [ ], **SIGNIFY** completion with a check mark. After each step with a _____, **ENTER** initials or data as appropriate. Where a step is followed by a double _____, that step shall require verification with two individuals' initials required to signify completion. "N/P" (for "not performed") may be placed by a procedural step where performance of that step has been conditionally stated and the condition(s) has not been met.

[2] **DOCUMENT** in the space provided below the reason this test is being performed (**CHECK** one):

- ☐ Routine Surveillance
- ☐ Postwork Testing for Maintenance Request# _____
- ☐ Other (specify) _____

_____

[3] Prerequisites

(a) Personnel assigned to perform this Attachment have read this Attachment. All personnel involved must print their name and the date and sign their initials below.

Name (print)	Date	Initials

(b) **PROVIDE** the on-shift SRO with Attachment 3 (HPCI Condensate Storage Tank Level - Associated Alarms and Actuations).

_____
Initials

(c) IF required, a Pre-Evolution Brief Checklist (Section 6.10 of PNPS 1.3.34) has been completed and attached to this surveillance.
[NRCCC Item PAPR 020]

Initials

(d) **COORDINATE** action to be taken with Operations personnel **AND OBTAIN** the on-shift SRO's signature as permission to begin test.

On-Shift SRO signature _____ Date _____ Time _____

(e) Radiation Protection notified for performance of the HPCI Condensate Storage Tank Level Functional Test.

Initials

[4] **ENSURE** personnel in the Cable Spreading Room informed of the Halon fire protection system alarm trip. [ ]

[5] **ESTABLISH** communication between the following locations:

(a) Control Room [ ]

(b) Cable Spreading Room [ ]

(c) Reactor Building Aux Bay, east wall, El. 8' [ ]

NOTE

If Reactor is shutdown with no steam pressure available for the HPCI turbine, then leads on terminals EE-5 at Panel C939 and EE-5 at Panel C941 will be lifted to clear the HPCI Low Steam Line Pressure signal.

[6] IF Reactor is shutdown OR IF Reactor is operating with less than 100 psig steam pressure being supplied to the HPCI turbine with relays 23A-K52A and 23A-K52B being energized, THEN PERFORM the following (OTHERWISE, ENTER "N/P" for Step [6](a) AND PROCEED TO Step [7]):

CAUTION

Use caution when working on energized circuits; 125V DC is present.

(a) At Cable Spreading Room, PERFORM the following:

(1) LIFT AND APPROPRIATELY TAG field side lead on EE-5 at Panel C939 (lead lifted to clear HPCI Low Steam Line Pressure signal).

Initials Verifier

(2) LIFT AND APPROPRIATELY TAG field side lead on EE-5 at Panel C941 (lead lifted to clear HPCI Low Steam Line Pressure signal).

Initials Verifier

(3) HAVE Operations push in the following Auto-Isolation Reset push buttons to clear the seal-in function of the auto-isolation relays. [ ]

Reset	Description	Location
23A-S26	PCIS Grp 4 Isol Channel A	C903
23A-S18	PCIS Grp 4 Isol Channel B	C903

(4) **VERIFY** the following:

a. White light (C903) "PCIS GRP 4 ISOLATION CHANNEL A" is OFF. [ ]

b. White light (C903) "PCIS GRP 4 ISOLATION CHANNEL B" is OFF. [ ]

[7] **CHECK** the identification marker to ensure you are working on the intended instrument 23-PS-2390A (located at Aux Bay, east wall, El. 8'). [ ]

[8] **VERIFY** the following alarms are CLEAR:

	ALARM	WINDOW	
(a)	"TORUS LEVEL HI"	C903C-G3	Initials
(b)	"HPCI TURBINE TEST"	C903C-G5	Initials
(c)	"CST LEVEL LO"	C903C-G2	Initials

[9] **CLOSE** isolation valve to 23-PS-2390A. [ ]

[10] **REQUEST** Operations to position/verify the following valves as indicated. **VERIFY** the valves are positioned correctly.

(a) MO-2301-35 (TORUS SUCT VLV) is CLOSED. Initials

(b) MO-2301-36 (TORUS SUCT VLV) is CLOSED. Initials

(c) MO-2301-6 (CST SUCT VLV) is OPEN. Initials

[11] **DECREASE** the test pressure to 23-PS-2390A by loosening plug on test connection **AND** VERIFY alarm "**CST LEVEL LO**" (C903C-G2) is ON.

Initials

(a) At Panel C939, **VERIFY** nominal DC voltage is NOT present between terminals L1 and L2 of relay 23A-K15.

Initials

[12] **VERIFY** the following valve positions:

(a) MO-2301-35 (TORUS SUCT VLV) is OPEN.

Initials

(b) MO-2301-36 (TORUS SUCT VLV) is OPEN.

Initials

(c) MO-2301-6 (CST SUCT VLV) is CLOSED.

Initials

[13] **PERFORM** the following:

(a) **TIGHTEN** plug at test connection.

Initials Verifier

(b) **INCREASE** the pressure to 23-PS-2390A by slowly opening isolation valve.

Initials Verifier

(c) At Panel C939, **VERIFY** nominal DC voltage is present between terminals L1 and L2 of relay 23A-K15.

Initials

[14] **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is CLEAR.

Initials

[15] **CHECK** the identification marker to ensure you are working on the intended instrument 23-PS-2390B (located at Aux Bay, east wall, El. 8').

[ ]

[16] **CLOSE** the isolation valve to 23-PS-2390B. [ ]

[17] **DECREASE** the test pressure to 23-PS-2390B by loosening plug on test connection **AND** **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is ON.

Initials

[18] At Panel C939, **VERIFY** nominal DC voltage is NOT present between terminals L1 and L2 of relay 23A-K15.

Initials

[19] **TIGHTEN** plug on test connection.

Initials Verifier

[20] **PERFORM** the following:

(a) **INCREASE** the pressure to 23-PS-2390B by slowly opening isolation valve.

Initials Verifier

(b) At Panel C939, **VERIFY** nominal DC voltage is present between terminals L1 and L2 of relay 23A-K15.

Initials

[21] **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is CLEAR.

Initials

[22] **VERIFY** Operations has placed the following valves in the indicated positions or as specified by Watch Supervisor:

(a) MO-2301-35 (TORUS SUCT VLV) is CLOSED.

Initials

(b) MO-2301-36 (TORUS SUCT VLV) is CLOSED.

Initials

(c) MO-2301-6 (CST SUCT VLV) is OPEN.

Initials

[23] IF leads were removed, THEN REMOVE tape, RELAND leads, AND TORQUE to 20 (18 to 22) in.-lb at the following terminals. (IF MO-2301-35 and MO-2301-36 are OPEN prior to relanding leads at Panels C939 and C941, they will automatically close when low pressure signal is restored.) RECORD torquing screwdriver information.

(a) EE-5 at Panel C939

_____ _____
Initials Verifier

(b) EE-5 at Panel C941

_____ _____
Initials Verifier

Torquing screwdriver # _____ Cal Due Date _____

[24] NOTIFY on-shift SRO that test is complete. [ ]

[25] FILL OUT the I&C Procedure Feedback Form (Attachment 4) AND FORWARD to the I&C Superintendent.

_____
Initials

Discrepancies noted during surveillance performance:

Notes:

Date Completed: _____

☐ Acceptance Criteria of Step 9.0[1] of the base document were met.

Maint Management/Lead _____ Date _____

On-Shift SRO _____ Date _____ Time _____

☐ Acceptance Criteria of Step 9.0[1] of the base document were not met. Notify the on-shift SRO.

Discrepancies: _____

_____

_____

Action taken: _____

_____

_____

Maint Mgt/Lead _____ Date _____ Time _____

ATTACHMENT 2
Sheet 1 of 13

HPCI CONDENSATE STORAGE TANK LEVEL INSTRUMENT FUNCTIONAL AND CALIBRATION TEST

[1] **PERFORM** the steps in the order they are written. After each step with a [ ], **SIGNIFY** completion with a check mark. After each step with a _____, **ENTER** initials or data as appropriate. Where a step is followed by a double _____, that step shall require verification with two individuals' initials required to signify completion. "N/P" (for "not performed") may be placed by a procedural step where performance of that step has been conditionally stated and the condition(s) has not been met.

[2] **DOCUMENT** in the space provided below the reason this test is being performed (**CHECK** one):

- ☐ Routine Surveillance
- ☐ Postwork Testing for Maintenance Request# _____
- ☐ Other (specify) _____

_____

[3] Prerequisites

(a) Personnel assigned to perform this Attachment have read this Attachment. All personnel involved must print their name and the date and sign their initials below.

Name (print)	Date	Initials

(b) **PROVIDE** the on-shift SRO with Attachment 3 (HPCI Condensate Storage Tank Level - Associated Alarms and Actuations).

_____
Initials

(c) IF required, a Pre-Evolution Brief Checklist (Section 6.10 of PNPS 1.3.34) has been completed and attached to this surveillance.
[NRCCC Item PAPR 020]

_____ Initials

(d) **COORDINATE** action to be taken with Operations personnel **AND OBTAIN** the on-shift SRO's signature as permission to begin test.

_____ _____ _____
On-Shift SRO signature Date Time

(e) Radiation Protection notified for performance of the HPCI Condensate Storage Tank Level Functional Test.

_____ Initials

(f) **ENSURE** personnel in the Cable Spreading Room informed of the Halon fire protection system alarm trip.

_____ Initials

[4] **ESTABLISH** communication between the following locations:

(a) Control Room [ ]

(b) Cable Spreading Room [ ]

(c) Reactor Building Aux Bay, east wall, El. 8' [ ]

NOTE

If Reactor is shutdown with no steam pressure available for the HPCI turbine, then leads on terminals EE-5 at Panel C939 and EE-5 at Panel C941 will be lifted to clear the HPCI Low Steam Line Pressure signal.

[5] IF Reactor is shutdown OR IF Reactor is operating with less than 100 psig steam pressure being supplied to the HPCI turbine with relays 23A-K52A and 23A-K52B being energized, THEN PERFORM the following (OTHERWISE, ENTER "N/P" for Step [5](a) AND PROCEED TO Step [6]):

CAUTION

Use caution when working on energized circuits; 125V DC is present.

(a) At Cable Spreading Room, PERFORM the following:

(1) LIFT AND APPROPRIATELY TAG field side lead on EE-5 at Panel C939 (lead lifted to clear HPCI Low Steam Line Pressure signal).

Initials _____ Verifier _____

(2) LIFT AND APPROPRIATELY TAG field side lead on EE-5 at Panel C941 (lead lifted to clear HPCI Low Steam Line Pressure signal).

Initials _____ Verifier _____

(3) HAVE Operations push in the following Auto-Isolation Reset push buttons to clear the seal-in function of the auto-isolation relays. [ ]

Reset	Description	Location
23A-S26	PCIS Grp 4 Isol Channel A	C903
23A-S18	PCIS Grp 4 Isol Channel B	C903

(4) **VERIFY** the following:

a. White light (C903) "PCIS GRP 4 ISOLATION CHANNEL A" is OFF. [ ]

b. White light (C903) "PCIS GRP 4 ISOLATION CHANNEL B" is OFF. [ ]

[6] **REQUEST** Operations to position the following valves as indicated. **VERIFY** the valves are positioned correctly.

(a) MO-2301-35 (TORUS SUCT VLV) is OPEN. _____ Initials

(b) MO-2301-36 (TORUS SUCT VLV) is OPEN. _____ Initials

(c) MO-2301-6 (CST SUCT VLV) is CLOSED. _____ Initials

[7] **CHECK** the identification marker to ensure you are working on the intended instrument 23-PS-2390A (located at Aux Bay, east wall, El. 8'). [ ]

NOTE

For the calibration of PS-2390A, the required M&TE accuracy is less than or equal to ±0.03 psig. (Ref. Calculation E-634-3)

[8] **VERIFY** the following alarms are CLEAR:

	ALARM	WINDOW	
(a)	**"TORUS LEVEL HI"**	C903C-G3	_____ Initials
(b)	**"HPCI TURBINE TEST"**	C903C-G5	_____ Initials
(c)	**"CST LEVEL LO"**	C903C-G2	_____ Initials

[9] **CLOSE** isolation valve to 23-PS-2390A. [ ]

[10] **REMOVE** the "tee" plug **AND CONNECT** a pressure source to 23-PS-2390A. [ ]

(a) **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is ON.

Initials

[11] **INCREASE** the pressure to 23-PS-2390A until the switch resets **AND VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is CLEAR.

Initials

[12] At Panel C939, **VERIFY** nominal DC voltage is present between terminals L1 and L2 of relay 23A-K15.

Initials

[13] **REQUEST** Operations to position the following valves as indicated. **VERIFY** the valves are positioned correctly.

(a) MO-2301-35 (TORUS SUCT VLV) is CLOSED.

Initials

(b) MO-2301-36 (TORUS SUCT VLV) is CLOSED.

Initials

(c) MO-2301-6 (CST SUCT VLV) is OPEN.

Initials

NOTE

There is a +6.5 psi water leg included in the following pressures.

[14] **SLOWLY DECREASE** the test pressure to 23-PS-2390A. **RECORD** "As-Found" setpoint data. Setpoint is 7.8 psig decreasing; No Adjust Limits are 7.6 to 8.0 psig.

(a) **RECORD** "As-Found" trip setpoint. _____ psig
Data

(b) At Panel C939, **VERIFY** nominal DC voltage is NOT present between terminals L1 and L2 of relay 23A-K15.
_____
Initials

(c) **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is ON.
_____
Initials

[15] **VERIFY** the following valve positions:

(a) MO-2301-35 (TORUS SUCT VLV) is OPEN.
_____
Initials

(b) MO-2301-36 (TORUS SUCT VLV) is OPEN.
_____
Initials

(c) MO-2301-6 (CST SUCT VLV) is CLOSED.
_____
Initials

[16] **SLOWLY INCREASE** test pressure to 23-PS-2390A. **RECORD** "As-Found" reset data.
_____ psig
Data

[17] **IF** "As-Found" trip point does NOT fall within No Adjust Limits, **THEN CALIBRATE AND RECORD** "As-Left" data. **RECORD** torquing screwdriver information.

(a) **RECORD** "As-Left" trip setpoint. _____ psig
Data

(b) **SLOWLY INCREASE** test pressure. **RECORD** "As-Left" reset data. _____ psig
Data

(c) **REPLACE** instrument cover **AND TORQUE** cover screws to 7 in.-lb.

_____ _____
Initials Verifier

Torquing screwdriver # _____ Cal Due Date _____

[18] **DECREASE** the test pressure to 23-PS-2390A, **REMOVE** test equipment, **AND REINSTALL** "tee" plug.

_____ _____
Initials Verifier

[19] **SLOWLY OPEN** isolation valve to 23-PS-2390A.

_____ _____
Initials Verifier

[20] At Panel C939, **VERIFY** nominal DC voltage is present between terminals L1 and L2 of relay 23A-K15.

_____
Initials

[21] **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is CLEAR.

_____
Initials

[22] **IF** "As-Found" trip point was less than 7.3 psig, **NOTIFY** the SM.

SM notified? ☐ Yes ☐ No

[23] **CHECK** the identification marker to ensure you are working on the intended instrument 23-PS-2390B (located at Aux Bay, east wall, El. 8'). [ ]

NOTE

For the calibration of PS-2390B, the required M&TE accuracy is less than or equal to ±0.03 psig. (Ref. Calculation E-634-3)

[24] **CLOSE** the isolation valve to 23-PS-2390B. [ ]

[25] **REMOVE** "tee" plug **AND CONNECT** a pressure source to 23-PS-2390B. [ ]

(a) **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is ON.

_____
Initials

[26] **INCREASE** the pressure to 23-PS-2390B until the switch resets **AND VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is CLEAR.

_____
Initials

[27] At Panel C939, **VERIFY** nominal DC voltage is present between terminals L1 and L2 of relay 23A-K15.

_____
Initials

NOTE

There is a +6.5 psi water leg included in the following pressures.

[28] **SLOWLY DECREASE** the test pressure to 23-PS-2390B. **RECORD** "As-Found" setpoint data. Setpoint is 7.8 psig decreasing; No Adjust Limits are 7.6 to 8.0 psig.

(a) **RECORD** "As-Found" trip setpoint.

_____ psig
Data

(b) At Panel C939, **VERIFY** nominal DC voltage is NOT present between terminals L1 and L2 of relay 23A-K15.

_____
Initials

(c) **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is ON.

_____
Initials

[29] **SLOWLY INCREASE** test pressure to 23-PS-2390B **AND RECORD** "As-Found" reset. _____psig
Data

[30] **IF** "As-Found" trip point does NOT fall within No Adjust Limits, **THEN CALIBRATE AND RECORD** "As-Left" data. **RECORD** torquing screwdriver information.

(a) **RECORD** "As-Left" trip setpoint. _____psig
Data

(b) **APPLY** increasing test input. **RECORD** "As-Left" reset data. _____psig
Data

(c) **REPLACE** instrument cover **AND TORQUE** cover screws to 7 in.-lb.

_____ _____
Initials Verifier

Torquing screwdriver # _____ Cal Due Date _____

[31] At Panel C939, **VERIFY** timing for relay 23A-K15 as follows (relay is an Agastat model 7024 PC TDDO. setpoint is 3.0 seconds):

(a) **IF** using a chart recorder, **ENSURE** the chart recorder has been calibrated. **IF** using a digital timer for this step, **ENTER** "N/P". [ ]

(b) **IF** using a digital timer, **POSITION** switch settings as follows (**IF** using chart recorder for this step, **ENTER** "N/P"):

(1) START INPUT:

a. LATCH ON [ ]

b. AC/DC REMOVED [ ]

(2) STOP INPUT:

a. LATCH ON [ ]

b. N.C DRY CONTACTS [ ]

(c) **CONNECT** a chart recorder or digital timer channel to relay 23A-K15 terminals L1 and L2 (monitoring range 0-125V DC). [ ]

(d) **CONNECT** one lead of a second chart recorder or digital timer channel to terminal 4 of relay 23A-K15 (spare normally open contact). [ ]

(e) **CONNECT** second lead of second chart recorder or digital timer channel to a voltage source. (DO NOT use a voltage source if a digital timer is used in the N.C. contact mode.) [ ]

(f) **CONNECT** voltage source to relay 23A-K15, terminal 6. (IF a digital timer is used in the N.C. contact mode, **CONNECT** the second lead of the timer to relay 23A-K15 terminal 6.) [ ]

(g) IF used, **SET** recorder chart speed to 50 mm/sec. [ ]

(h) IF using a digital timer, **PRESS** the RESET button on the digital timer (indication should show all zeros and not counting). IF using a chart recorder for this step, **ENTER** "N/P". [ ]

NOTE

The starting of the chart recorder or digital timer is to be coordinated with the pressure switch operation.

(i) **START** chart recorder or digital timer **AND DECREASE** test pressure to 23-PS-2390B. [ ]

(j) IF used, **STOP** chart recorder after relay 23A-K15 drops out. [ ]

(1) **RECORD** "As-Found" time delay. Setpoint is 3.0 seconds; No Adjust Limits are 2.85 to 3.15 seconds.

_____ sec
As-Found

(k) **IF** required, **ADJUST** relay 23A-K15 **AND REVERIFY** timing by resetting switch and repeating Steps [31](g) through (k) until desired setpoint value is obtained. [ ]

(1) **RECORD** "As-Left" time delay. Setpoint is 3.0 seconds; No Adjust Limits are 2.85 to 3.15 seconds. _____ sec
As-Left

(l) **DISCONNECT** recorder or digital timer test leads. [ ]

[32] **DECREASE** the test instrument pressure. **REMOVE** test equipment. **AND REINSTALL** "tee" plug.
_____ _____
Initials Verifier

[33] **SLOWLY OPEN** isolation block valve to 23-PS-2390B.
_____ _____
Initials Verifier

[34] At Panel C939, **VERIFY** nominal DC voltage is present between terminals L1 and L2 of relay 23A-K15.
_____
Initials

[35] **VERIFY** alarm "**CST LEVEL LO**" (C903C-G2) is CLEAR.
_____
Initials

[36] **IF** "As-Found" trip point was less than 7.3 psig, **NOTIFY** the SM.

SM notified? ❑ Yes ❑ No

[37] **VERIFY** Operations has placed the following valves in the indicated positions or as specified by the Watch Supervisor.

(a) MO-2301-35 (TORUS SUCT VLV) is CLOSED.
_____
Initials

(b) MO-2301-36 (TORUS SUCT VLV) is CLOSED.
_____
Initials

(c) MO-2301-6 (CST SUCT VLV) is OPEN.
_____
Initials

[38] IF leads were removed, THEN REMOVE tape, RELAND leads, AND TORQUE to 20 (18 to 22) in.-lb at the following terminals. (IF MO-2301-35 and MO-2301-36 are OPEN prior to relanding leads at Panels C939 and C941, they will automatically close when low pressure signal is restored.) RECORD torquing screwdriver information.

(a) EE-5 at Panel C939

_____ _____
Initials Verifier

(b) EE-5 at Panel C941

_____ _____
Initials Verifier

Torquing screwdriver# _____ Cal Due Date _____

[39] COMPLETE documentation AND UPDATE Maintenance records. [ ]

[40] NOTIFY on-shift SRO that test is complete. [ ]

[41] RECORD test equipment used: _____ Cal Due Date _____

_____ _____

_____ _____

[42] FILL OUT the I&C Procedure Feedback Form (Attachment 4) AND FORWARD to the I&C Superintendent.

_____
Initials

Discrepancies noted during surveillance performance:

Notes:

Date Completed: _____

☐ Acceptance Criteria of Step 9.0[2] of the base document were met.

Maint Management/Lead _____ Date _____

On-Shift SRO _____ Date _____ Time _____

☐ Acceptance Criteria of Step 9.0[2] of the base document were not met. Notify the on-shift SRO.

Discrepancies: _____

_____

_____

Action taken: _____

_____

_____

Maint Mgt/Lead _____ Date _____ Time _____

ATTACHMENT 3
Sheet 1 of 1

HPCI CONDENSATE STORAGE TANK LEVEL - ASSOCIATED ALARMS AND ACTUATIONS

NOTE

The following alarms and actuations will be activated during the performance of this Procedure (PNPS 8.M.2-2.5.6).

INSTRUMENT	LOCATION	ALARM/ACTUATION
23-PS-2390A	Reactor Bldg Aux Bay, east wall, El. 8'	"CST LEVEL LO" (C903C-G2)
23-PS-2390B	Reactor Bldg Aux Bay, east wall, El. 8'	"CST LEVEL LO" (C903C-G2)
23-PS-2390A 23-PS-2390B		Isolation signals for the following: MO-2301-6, CST Suct Vlv
23-PS-2390A 23-PS-2390B		Opening signals for the following: MO-2301-35, Torus Suct Vlv MO-2301-36, Torus Suct Vlv

ATTACHMENT 4
Sheet 1 of 1

I&C PROCEDURE FEEDBACK FORM

Date: _____

Name (print): _____

[1] Were there any problems found while performing this Procedure:

YES ☐ NO ☐

(a) If YES, record problems in Step [3] below.

[2] Are there any enhancements that need to be made to this Procedure:

YES ☐ NO ☐

(a) If YES, record steps to be enhanced and a description of the enhancement in Step [3] below. Include Attachment number if applicable.

[3] Problem/Enhancement: _____