(5) Sta. 4

DEC 21 1994

ENGINEERING DATA TRANSMITTAL

1. EDT 608510

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Distribution	Effluent Trmt. & Lab Projects	N/A
5. Proj./Prog./Dept./Div.:	6. Cog. Engr.:	7. Purchase Order No.:
W-049H	G. A. Johnston	N/A
8. Originator Remarks: Attached for approval is Acceptance Test Report WHC-SD-W049H-ATR-003, which provides the documentation for the completed Acceptance Test Procedure WHC-SD-W049H-ATP-003.		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 12/23/94

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-W049H-ATR-003	ALL	0	Project W-049H Instrumentation & Control ATR	Q	1		

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
1		Cog.Eng. GA Johnston	GA Johnston	12/19/94	R3-35	SL Carmichael			T7-39	3	
1		Cog. Mgr. DP Hughes	DP Hughes	12/21/94	R3-35	EA McNamar			T7-39	3	
1		QA MC Arntzen	PER TELECON GA Johnston	12/19/94	L4-93	Project Files			R1-28	3	
3		Safety OM Jaka			R3-08	Central Files (2)			L8-04	3	
3		Env. DW Fritz			H6-22	O.S.T.I. (2)			L8-07	3	
3		AK Yoakum			S4-53	M. Carrigan			R3-35	3	
3		AF Crane			T7-39						

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
GA Johnston GA Johnston 12/21/94 Signature of EDT Originator — Date	N/A Authorized Representative for Receiving Organization — Date	DP Hughes 12/21/94 Cognizant Manager — Date	[] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (04/94) GEF097

BD-7400-172-1 (07/91)

RELEASE AUTHORIZATION

Document Number:	WHC-SD-W049H-ATR-003, REV.0
Document Title:	Project W-049H Instrument & Control Acceptance Test Report
Release Date:	December 21, 1994

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara M. Broz — December 21, 1994

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SUPPORTING DOCUMENT

1. Total Pages 90

2. Title	3. Number	4. Rev No.
Project W-049H Instrument & Control Acceptance Test Report	WHC-SD-W049H-ATR-003	0

5. Key Words

W-049H Acceptance Test Report
TEDF Test Report

APPROVED FOR PUBLIC RELEASE

KMG 12/21/94

6. Author

Name: G.A. Johnston

Signature

Organization/Charge Code 7FB80/APM49

7. Abstract

This Acceptance Test Report documents the completed Acceptance Test Procedure WHC-SD-W049H-ATP-003.

8. RELEASE STAMP

OFFICIAL RELEASE
BY WHC
DATE DEC 21 1994

5

Ata. 4

ACCEPTANCE TEST PROCEDURE WHC-SD-W049H-ATP-003

TEST TITLE INSTRUMENTATION AND CONTROL (I&C)

LOCATION SEVERAL AREAS

PROJECT NUMBER W-049H

PROJECT TITLE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

Prepared by
Westinghouse Hanford Company
Richland, Washington

for the U. S. Department of Energy

PROCEDURE APPROVAL

WESTINGHOUSE HANFORD COMPANY (WHC)

D.A [signature]	11-9-94	(SEE EDT 608501)	
Originator	Date	Operations	Date
[signature]	11/9/94	(SEE EDT 608501)	
Project Management	Date	Safety	Date
(SEE EDT 608501)		(SEE EDT 608501)	
Environmental	Date	Quality Engineering	Date

EXECUTION AND TEST APPROVAL

EXECUTED BY

GA Johnston — 12-1-94
Test Director/Organization — Date

Test Operator/Organization — Date
BA Blakely SRT Elect.

Recorder/Organization — Date
D.C. Wallace ICF KH
K. KOHLER / AI

WITNESSES

K. KOHLER KEH / AI — 12-20-94

Per Telecon DA Johnston — 12-19-94
Witness/Organization — Date
C T Romdough WHC

Debra C. Wallace — 12-20-94
Title III Inspector — Date
Debra Wallace KEH

AKL for Kim for — 12-20-94
Witness/Organization — Date
B.E. GODFREY / WESTINGHOUSE OPS.
K.B. GRANT / " "

Witness/Organization — Date

AI APPROVAL

ICF Kaiser Hanford Company (ICF KH)

Without exceptions ✓ HC — With exceptions resolved ✓ — With exceptions outstanding ____

[signature] — 12-20-94
Acceptance Inspection — Date

TEST APPROVAL AND ACCEPTANCE

Westinghouse Hanford Company

Without exceptions ____ — With exceptions resolved ✓ — With exceptions outstanding ____

[signature] — 12/20/94
Projects Department — Date

S. L Carmichael — 12-20-94
Liquid Effl. Process Engr. — Date

AKL for Kim — 12/20/94
Operations — Date

PREAMBLE

1. General

   a. The Acceptance Test Procedure (ATP) program for Project W-049H covers three activities as follows:

      1) Disposal System
      2) Collection System
      3) Instrumentation and Control System

   b. Each activity has its own ATP.

   c. The purpose of the ATPs is to reverify that the systems have been constructed in accordance with the construction documents (a prerequisite of ATPs) and to demonstrate that the systems function as required by the Project criteria.

   d. Additional guidance and information are contained in WHC-CM-6-2 "Projects Department Management Manual," Section PM-21 "Projects Closeout."

2. Disposal System

   This ATP covers the testing of the following: disposal line flowmeters, room air temperatures in the Disposal Station Sampling Building, effluent valves and position indicators, disposal pond level monitors, automated sampler, and pressure relief valves.

   This test will be accomplished electronically by means of simulated inputs/outputs. There will be minimal water flow involved in this ATP.

3. Collection System

   This ATP covers the testing of the two pump stations and all equipment installed therein under ICF KH Contract 5354.

   This will be a "wet" test with potable water being introduced into the pump pits to test for leakage. Potable water will also be employed in the testing of the pumps and related mechanical equipment.

   All Instrument and Control (I&C) equipment related to the pump stations will be checked electronically with simulated inputs/outputs when actual input/output signals are unavailable.

   Water from Pump Station 1 will be moved through the TEDF piping system and discharged into the disposal ponds. This will check the proper function of the air/vac valves not tested during construction.

4. Instrumentation and Control (I&C)

This ATP covers the testing of the entire TEDF I&C system. This includes 3 OCS units, modem, and GPLI cabinets in the ETF control room; 2 pump stations; disposal station sampling building; and all LCUs installed in the field.

Testing will be performed using actual signals when available and simulated signals when actual signals are unavailable.

END OF PREAMBLE

TABLE OF CONTENTS

1. PURPOSE AND SCOPE

1.1 This Acceptance Test Procedure (ATP) has been prepared to demonstrate that the Treated Effluent Disposal Facility (TEDF) Instrumentation & Control System for Project W-049H has been constructed according to design. This includes 3 OCS units, modem, and GPLI cabinets in the ETF control room; 2 pump stations; disposal station sampling building; and all LCUs installed in the field. Specifically, this ATP is designed to verify the following overall system requirements:

1.1.1 The cabling and all I&C equipment has been constructed and installed in accordance with the design.

1.1.2 The system properly monitors collection sites in the pipeline system.

1.1.3 Power supply failure automatically switches to redundant power supply and if both power supplies fail, switches to battery-backed UPS power.

This ATP will NOT verify the following system requirements because these requirements will have been verified by previous testing (see Section 2.1):

1.1.4 Failure of any redundant LCU component automatically switches to the redundant component.

1.1.5 Failure of a single OCS does not impair complete monitoring and control capability by another OCS.

1.1.6 Any pump can be started up or shut down manually from either the Local Control Unit (LCU), the Operator Control Station (OCS), or the Motor Control Center (MCC) provided conditions on flow, pressure, level, inlet/outlet valve positions, and status of other pumps are met.

1.1.7 Pumps are started up and shut down automatically in response to changing conditions on flow, pressure, level, and valve positions in accordance with specifications.

1.1.8 The CRT-based operator interfaces work as designed.

1.1.9 The control system software conforms to the configuration specified by the logic diagrams, piping and instrumentation diagrams (P&ID), and the tag list.

1.2 Testing will be performed using actual signals. If actual signals are not available, then simulated signals will be used to complete the tests.

2. REFERENCES

2.1 RELATED TEST PROCEDURES

"Factory Acceptance Test Procedure for A/S Open System," MICON S.O. 31339, Rev. 1, December, 1993.

"Site Acceptance Test Procedure for A/S Open System," MICON S.O. 31339, Rev. 1, March, 1994.

"Functional Logic Test Procedure, W-049H Project, Kaiser Engineers Hanford," MICON S.O. 31339, Rev. 0, June, 1994.

2.2 DRAWINGS

H-2-815119	Piping & Instrumentation Symbols
H-2-815120	P & ID Disposal Station
H-2-815121, Sh 1	Electrical/Instm Plans, El, Details
H-2-815121, Sh 2	Electrical/Instm Plans, El, Details
H-2-815121, Sh 3	Electrical/Instm Plans, El, Details
H-2-815121, Sh 4	Electrical/Instm Plans, El, Details
H-2-815122	Electrical/Instm Elementary Diagrams
H-2-815123	Electrical/Instm Instm Cable Run List
H-2-140391, Sh 1	Electrical/Instm Installation Details Typ LCU Cabinet
H-2-140392, Sh 1	Electrical/Instm Instl Details & Cable List Typ LCU Cab
H-2-140393, Sh 4	Elec/Instm Interconnection Diagram GPLI/ETF Dual Data Highway
H-2-140393, Sh 5	Elec/Instm Interconnection Diagram GPLI/ETF Dual Data Highway
H-2-140394, Sh 1	Instrumentation Sequential Logic Diagram Legend
H-2-140394, Sh 2	Instrumentation Sequential Logic Diagram Pump Sta #1 Control
H-2-140394, Sh 3	Instrumentation Sequential Logic Diagram Pump Sta #1 Control

H-2-140394, Sh 4	Instrumentation Sequential Logic Diagram Pump Station #1 Control
H-2-140394, Sh 5	Instrumentation Sequential Logic Diagram Pump Station #1 Control
H-2-140394, Sh 6	Instrumentation Sequential Logic Diagram Pump Sta #1 Control
H-2-140394, Sh 9	Instrumentation Sequential Logic Diagram Pump Operation Status
H-2-140394, Sh 10	Instrumentation Sequential Logic Diagram Check Valve Sequence
H-2-140394, Sh 11	Instrumentation Sequential Logic Diagram Pump Station #1 Control
H-2-140394, Sh 12	Instrumentation Sequential Logic Diagram Valve/Gate Operation
H-2-140394, Sh 13	Instrumentation Sequential Logic Diagram Pump Sta #2 Control
H-2-140394, Sh 14	Instrumentation Sequential Logic Diagram Pump Station #2 Control
H-2-140394, Sh 15	Instrumentation Sequential Logic Diagram Pump Sta #2 Control
H-2-140394, Sh 17	Instrumentation Sequential Logic Diagram Check Valve Sequence
H-2-140394, Sh 18	Instrumentation Sequential Logic Diagram Valve/Gate Operation
H-2-140378, Sh 3	Instm P & ID 200W Exst Signals
H-2-140379, Sh 3	Instm P & ID 200E Exst Signals
H-2-140388, Sh 1	Instrumentation Key Plan
H-2-140389, Sh 1	Elec/Instm Pump Plans & Elevations Pump Station #1
H-2-140389, Sh 2	Elec/Instm Pump Plans & Elevations Pump Station #2
H-2-140390, Sh 1	Elec/Instm/Civil Monitoring Sta Details - Typ Efl Stream Gen
H-2-140390, Sh 2	Elec/Instm Monitoring Sta Details - PFP & Disposal Sample Sta

H-2-140392, Sh 2	Elec/Instm Instl Details & Cable List Lvl XMTR/SW Mtg Pump Sta 1&2
H-2-140392, Sh 3	Elec/Instm Instl Details & Cable List - Pump Stations 1 & 2
H-2-140393, Sh 1	Elec/Instm Intcon Diagrams Pump Station #1
H-2-140393, Sh 2	Elec/Instm Intcon Diagrams Pump Station #2
H-2-140393, Sh 3	Elec/Instm Block Diagram TEDF B Plant Interface
H-2-140395, Sh 1	Elec/Instm Plan, Wiring Diagrams & Mtg Det TEDF/Purex Intfc
H-2-140396, Sh 1	Elec/Instm Wiring Diagrams & Mtg Det TEDF/PFP Intfc
H-2-140397, Sh 1	Elec/Instm Elementary Diagrams - Pump Station 1
H-2-140397, Sh 2	Elec/Instm Elementary Diagrams - Pump Station 2

2.3 SPECIFICATIONS

V-W049H-0001, Rev. 3	Specification for Project W-049H Monitor and Control System Procurement
WHC-SD-W049H-CSRS-001 Rev. 0	Treated Effluent Disposal System Process Control Computer Software Requirements and Specification

Certified Vendor Information

2.4 ENGINEERING CHANGE NOTICES (ECN)

Prior to final test approval, enter ECNs written against this ATP.

2.5 PROCEDURES

ICF KH Procedure CON 3.5	Performance and Recording of Acceptance Test Procedures

3. RESPONSIBILITIES

3.1 GENERAL

Each company or organization participating in this ATP will designate personnel to assume the responsibilities and duties as defined herein for their respective roles. The designees shall become familiar with this ATP and the systems involved to the extent that they can perform their assigned duties.

3.2 WHC PROJECT ENGINEER

3.2.1 Designates a Test Director.

3.2.2 Coordinates testing with the Area Manager.

3.2.3 Acts as liaison between the participants in acceptance testing.

3.2.4 Distributes the approved testing schedule before start of testing.

3.2.5 Schedules and conducts a pretest kickoff meeting with test participants.

3.2.6 Notifies the persons performing and witnessing the test 2 days before the start of testing.

3.2.7 Schedules a dry run if test director deems necessary.

3.2.8 Notifies concerned parties when a change is made in the testing schedule.

3.2.9 Signs Execution and Test Approval page when test is approved and accepted.

3.2.10 Takes necessary action to clear expections to the test.

3.2.11 Signs Exception Form when exception has been resolved.

3.2.12 Provides a distribution list for the approved and accepted ATP (ATR).

3.3 TEST DIRECTOR

3.3.1 Coordinates and directs acceptance testing.

3.3.2 Confirms that field testing and inspection of the system or portion of the system to be tested has been completed prior to start of ATP.

3.3.3 Stops any test which, in his or her judgment, may cause damage to the system until the problem has been resolved.

3.3.4 After verifying there is no adverse impact, may alter the sequence in which systems or subsystems are tested.

3.3.5 Ensures that required environmental conditions are maintained.

3.3.6 If a test is to be suspended for a period of time, ensures that the system is left in a safe mode.

3.3.7 Before restarting a suspended test, reverifies the test prerequisites.

3.3.8 Initiates ECNs to document required changes to the ATP.

3.3.9 Reviews recorded data, discrepancies, and exceptions.

3.3.10 Obtains information or changes necessary to clear or resolve objections during the performance of the test.

3.3.11 Signs Execution and Test Approval page when test has been performed.

3.3.12 Signs Exception Form when exception has been resolved.

3.3.13 Obtains required signatures on the ATP Master prior to reproduction and distributes an Acceptance Test Report (ATR).

3.4 WITNESSES (Provided by Participating Organizations. One witness shall be a Title III acceptance inspector.)

3.4.1 Witness the tests.

3.4.2 Review results of testing.

3.4.3 Assist the Test Director when requested.

3.4.4 Sign Execution and Test Approval page when test has been performed.

3.4.5 Sign Exception Form when exception has been resolved.

3.5 RECORDER (Provided by ICF KH)

3.5.1 Prepares a Field copy from the ATP Master.

3.5.2 Records names of all designated personnel on Field copy of ATP prior to start of testing.

3.5.3 Records test instrument identification numbers and calibration expiration dates.

3.5.4 Initials and dates each test step on the Field copy as it is completed next to the step number or on a data sheet, when provided. Records test data. On data sheets where there is not room for both the initial and date, date may be entered at bottom of column.

3.5.5 Records objections and exceptions on an Exception Form. Uses additional Exception Forms as needed. Notifies the Test Director at time the objection/exception is made.

3.5.6 Signs Execution and Test Approval page when test has been performed.

3.5.7 After test is finished, assigns alpha numeric page numbers to added data sheets and Exception Forms. Records page numbers in the Table of Contents.

3.5.8 Transfers Field copy entries for each step to the Master in ink or type, signs, and dates. Transmits the completed Master to the Test Director for approval signature routing. Transmits the Field copy to Construction Document Control for inclusion in the official project file.

3.5.9 Signs Exception Form when exception has been resolved via a retest and transmits to Test Director.

3.6 TEST OPERATOR

3.6.1 Performs test under direction of the Test Director.

3.6.2 Provides labor, equipment, and test instruments required for performing tests which have not been designated as being provided by others.

3.6.3 Requests in writing from the Test Director those services, materials, or equipment that have been designated as being supplied by others.

3.6.4 Confirms that all equipment required for performing the test will be available at the start of testing.

3.6.5 Signs the Execution and Test Approval page.

3.7 A-E ACCEPTANCE INSPECTION

3.7.1 Evaluate results.

3.7.2 Sign for A-E Approval on Execution and Test Approval page.

4. CHANGE CONTROL

Required changes to this ATP must be processed on ECNs in accordance with company procedures. If a need for change is discovered in the course of running the test, the test shall be stopped until the ECN is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

5. EXECUTION

5.1 OCCUPATIONAL SAFETY AND HEALTH

Individuals shall carry out their assigned work in a safe manner to protect themselves and others from undue hazards and to prevent damage to property and environment. Facility line managers shall assure the safety of activities within their areas to prevent injury, property damage, or interruption of operation. Performance of test activities shall always include safety and health aspects.

5.2 PERFORMANCE

5.2.1 Conduct testing in accordance with ICF KH Procedure CON 3.5 (Performance and Recording of Acceptance Test Procedures).

5.2.2 Perform test following the steps and requirements of this procedure.

6. EXCEPTIONS

6.1 GENERAL

Exceptions to the required test results are sequentially numbered and recorded on individual Exception Forms. This enables case-by-case resolution and approval of each exception.

Errors/exceptions in the ATP itself shall NOT be processed as test exceptions (see Section 4, CHANGE CONTROL).

6.2 RECORDING

6.2.1 Number each exception sequentially as it occurs and record it on an Exception Form (KEH-428), sample appended.

6.2.2 Enter name and organization of objecting party for each exception.

6.2.3 Enter planned action to resolve each exception when such determination is made.

6.3 RETEST/RESOLUTION

Record the action taken to resolve each exception. Action taken may not be the same as planned action.

6.3.1 When action taken results in an acceptable retest, sign and date Retest Execution and Acceptance section of the Exception Form.

6.3.2 When action taken does not involve a retest, strike out the Retest Execution and Acceptance section of the Exception Form.

6.4 APPROVAL AND ACCEPTANCE

The customer provides final approval and acceptance of exceptions by checking one of the following on the Exception Form:

6.4.1 Retest Approved and Accepted: Applicable when Retest Execution and Acceptance section is completed.

6.4.2 Exception Accepted As-Is: Requires detailed explanation.

6.4.3 Other: Requires detailed explanation.

The customer signs and dates the Exception Form and obtains other customer internal approvals, if required.

6.5 DISTRIBUTION

A copy of the approved Exception Form is distributed to each participant. The signed original is attached to the ATP Master.

7. SAMPLE EXCEPTION FORM

EXCEPTION NO.	Project No.	ATP No.	Rev.
Recorded by	Organization	Date Recorded	ATP Page No.
Step No.	Requirement		
Description of Problem			
Objector 1 (Name/Organization)		Objector 2 (Name/Organization)	
Planned Action			
Action Taken			

RETEST EXECUTION AND ACCEPTANCE

Retest Installation Contractor	Date	Recorder	Date
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date
Field Engineering	Date	Test Director (Name/Organization)	Date
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date

APPROVAL AND ACCEPTANCE – OPERATING CONTRACTOR

☐ Retest Approved and Accepted ☐ Exception Accepted-as-is* ☐ Other*

* Explanation

Approver 1	Date	Approver 2	Date
Approver 3	Date	Approver 4	Date

8. PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS

8.1 PREREQUISITES

The following conditions shall exist at start of testing for that portion of the system being tested.

		Initial
8.1.1	Systems have been inspected for compliance with construction documents.	[illegible] 12-10-94
8.1.2	Reference documents (including this ATP) have been verified for correct revision number and outstanding ECNs.	DOW 12-1-94
8.1.3	A Prejob Safety Analysis has been prepared and a Prejob Safety Meeting has been conducted.	[illegible] 12-10-94
8.1.4	Test instruments have a valid calibration stamp attached. Test instrument identification numbers and calibration expiration dates have been recorded in Section 8.2.	DOW 12-1-94
8.1.5	Power is available.	DOW 12-1-94
8.1.6	Voice communications are available between the equipment in the field, the LCU pertaining to the equipment, and the control room.	DOW 12-1-94
8.1.7	Open items and exception lists have been verified that there are no hardware deficiencies present that may cause equipment or component damage if the ATP is performed.	DOW 12-1-94
8.1.8	Previous ATPs have been completed or performed to the extent that it can be verified that there are no known exceptions or deficiences present that will cause equipment damage or personnel injury if the steps of this ATP are carried out.	DOW 12-1-94
8.1.9	Fans are operational in the LCU cabinets to cool the equipment.	DOW 12-1-94
8.1.10	Cabinetry, subassemblies, printed circuit boards, wiring between subsystems, and cables are identified and permanently marked.	DOW 12-1-94

8.1.11 All documentation, user manuals, and drawings conform to content and format specifications. DOW 12-1-94

8.1.12 Overview, group, loop, alarm summary, alarm status, and trend displays have been preformatted. [illegible] 12-1-94

8.1.13 The range for each analog input has been determined from equipment specifications and input into the OCS. DOW 12-1-94

8.1.14 There is sufficient water in the system so that after draining the transfer lines (Steps 9.1, 9.2 to 9.17 of this ATP), the water level in the two pump stations will be at least two feet above the tank bottom. [illegible] 12-12-94

8.1.15 The following valves are positioned as shown below:

Pump Station #1

MV-68A-001	OPEN	[illegible] 12-12-94
MV-68A-002	OPEN	[illegible] 12-12-94

Pump Station #2

MV-68B-001	OPEN	[illegible] 12-12-94
MV-68B-002	OPEN	[illegible] 12-12-94

Disposal Pond

MV-68C-004	OPEN	[illegible] 12-8-94
MV-68C-005	OPEN	[illegible] 12-8-94

8.1.16 The pumps in pump stations 1 and 2 have been configured so that they can be operated remotely from the OCS. [illegible] 12-12-94

8.2 EQUIPMENT / INSTRUMENTS

Supplied by Test Operator unless otherwise noted.

8.2.1 Loop Calibrator: Device shall be capable of sourcing a 4-20 mA loop.

Instrument No. 812-13-55-008

Expiration Date 2-1-95

8.2.2 Shorting Jumpers: Determine length in field. Jumpers shall be capable of connecting 120 V AC power and low voltage signals.

8.2.3 Temperature measuring device in °F.

Instrument No. Taylor Model # 5395

Expiration Date 11-95

Range 0 to 160° F

8.3 ABBREVIATIONS

ATP	Acceptance Test Procedure
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CSA	Canadian Standards Association
ECN	Engineering Change Notice
ETF	Effluent Treatment Facility
EWS	Engineering Workstation
FM	Factory Mutual Engineering Corp
GPLI	General Purpose LAN Interface
I&C	Instrumentation and Control
ICF KH	ICF Kaiser Hanford Company
LAN	Local Area Network
LCU	Local Control Unit
LOI	Local Operator Interface
MCC	Motor Control Center
MCS	Monitoring and Control System
OCS	Operator Control Station
P&ID	Piping and Instrumentation Diagram
PID	Proportional Integral Derivative
TEDF	Treated Effluent Disposal Facility
UL	Underwriters Laboratory
UPS	Uninterruptible Power Supply
WHC	Westinghouse Hanford Company

9. STEP BY STEP TEST PROCEDURE

The following steps are to drain the transfer line into pump stations 1 and 2 in preparation for running the rest of the ATP.

Pump Station #1

9.1 Manually open valve 68A-V-17. 12-17-94

9.2 Manually open valve 68A-V-13.

9.3 Manually close valve 68A-V-15.

9.4 Manually close valve 68A-V-16.

9.5 Manually close valves 68A-V-05, 68A-V-10, 68A-V-22, and 68A-V-27.

The flow meter assembly is now isolated and the bypass line around the flow meter is open.

9.6 Manually open sluice gate 68A-SLG-51.

9.7 Manually open valves 68A-V-18 and 68A-V-19.

The transfer line should now be draining into the pump station. About 54,000 gal of water will drain back if the line was full to the high point.

9.8 After the line has drained, manually close valve 68A-V-17.

The pump station is now isolated from the transfer line.

9.9 Verify that the pump isolation hand valves 68A-V-04, 68A-V-09, 68A-V-21, and 68A-V-26 are open.

Pump Station #2

9.10 Manually open valve 68B-V-08.

9.11 Manually close valve 68B-V-06.

9.12 Manually close valve 68B-V-07.

9.13 Manually close valves 68B-V-09 and 68B-V-20.

The flow meter assembly is now isolated and the bypass line around the flow meter is open.

9.14 Manually open sluice gate 68B-SLG-41.

9.15 Manually open valves 68B-V-09 and 68B-V-20.

9. STEP BY STEP TEST PROCEDURE

The following steps are to drain the transfer line into pump stations 1 and 2 in preparation for running the rest of the ATP.

Pump Station #1

9.1 Manually open valve 68A-V-17.

9.2 Manually open valve 68A-V-13.

9.3 Manually close valve 68A-V-15.

9.4 Manually close valve 68A-V-16.

9.5 Manually close valves 68A-V-05, 68A-V-10, 68A-V-22, and 68A-V-27.

The flow meter assembly is now isolated and the bypass line around the flow meter is open.

9.6 Manually open sluice gate 68A-SLG-51.

9.7 Manually open valves 68A-V-18 and 68A-V-19.

The transfer line should now be draining into the pump station. About 54,000 gal of water will drain back if the line was full to the high point.

9.8 After the line has drained, manually close valve 68A-V-17.

The pump station is now isolated from the transfer line.

9.9 Verify that the pump isolation hand valves 68A-V-04, 68A-V-09, 68A-V-21, and 68A-V-26 are open.

Pump Station #2

9.10 Manually open valve 68B-V-08.

9.11 Manually close valve 68B-V-06.

9.12 Manually close valve 68B-V-07.

9.13 Manually close valves 68B-V-08 and 68B-V-20.

The flow meter assembly is now isolated and the bypass line around the flow meter is open.

9.14 Manually open sluice gate 68B-SLG-41.

9.15 Manually open valves 68B-V-09 and 68B-V-20.

The transfer line should now be draining into the pump station. About 3,200 gal of water will drain back if the line was full to the high point.

9.16 After the line has drained, manually close valve 68B-V-08. 12.10.94

The pump station is now isolated from the discharge line and all water pumped will return to the pump chamber.

9.17 Verify that the pump isolation hand valves 68B-V-04 and 68B-V-22 are open. 12.10.94

CAUTION **On subsequent days during the ATP, recheck the valve alignments before starting any pumps.**

The following steps are designed to test that the I&C field connections will not hinder manual pump operation at the motor control center (MCC) of each pump.

9.18 Start pump 68A-P-A1 at pump station 1 from the MCC. Let run for 10 seconds. Stop the pump. 12.12.94

9.19 Start pump 68A-P-A2 at pump station 1 from the MCC. Let run for 10 seconds. Stop the pump. 12.12.94

9.20 Start pump 68A-P-B1 at pump station 1 from the MCC. Let run for 10 seconds. Stop the pump. 12.11.94

9.21 Start pump 68A-P-B2 at pump station 1 from the MCC. Let run for 10 seconds. Stop the pump. 12.12.94

CV OPEN 12 SEC
RUN PUMP 1 MINUTES

9.22 Start pump 68B-P-A1 at pump station 2 from the MCC. Let run for 10 seconds. Stop the pump. EXCEPTION #1 12.10.94

CV OPEN 20 SEC
RUN PUMP MINUTES

9.23 Start pump 68B-P-B1 at pump station 2 from the MCC. Let run for 10 seconds. Stop the pump. EXCEPTION #1 12.10.94

9.24 The following steps will verify that all I&C communication between the control room and the equipment in the field is functional. By inference and previous testing that has been performed, successful execution of these steps will verify that the I&C system has been constructed according to design. These steps will be performed at the Operator Control Station (OCS) in the Control Room with telephone communication to a person in the field to verify that the equipment functions as intended and to provide field manipulation of the test conditions when required. Signal location is NNS PT where NN is LCU number (55CNN), S is "slot" or "card" number, and PT is point number. For example, 105 32 is located in LCU 55C10, at point 32 of slot 5. In the drawings, the card or slot position is designated A, B, C, etc., instead of 1, 2, 3, etc.

To verify a tag at the Operator Control Station (OCS), display the tag using a group display and verify that the tag value or status is correct. For analog tags, the correct value is any positive number, unless otherwise specified in the step, since the equipment has not yet been calibrated. The value will be recorded, however, for information. For discrete tags, the correct value should be obvious from the action taken (OPEN/CLOSED for valve position, etc.). The signal location for discrete output tags may not be specifically listed in the test but are tested by verification of the resulting actions, i.e. valve position, flow, etc..

To verify a tag at the Local Operator Interface (LOI), display the tag on the LOI (this requires that a group display configuration has been downloaded from the OCS) and verify that the tag value or status is correct. The status display on the LOI will only indicate an ON or OFF status. The OCS will indicate a more defined event or alarm status such as OPEN, CLOSE, FAIL, etc..

For actions initiated from the OCS, activate the tag given in parentheses and confirm the action by observing the tag given in the "Tagname" column.

9.24 The following steps will verify that all I&C communication between the control room and the equipment in the field is functional. By inference and previous testing that has been performed, successful execution of these steps will verify that the I&C system has been constructed according to design. These steps will be performed at the Operator Control Station (OCS) in the Control Room with telephone communication to a person in the field to verify that the equipment functions as intended and to provide field manipulation of the test conditions when required. Signal location is NNS PT where NN is LCU number (55CNN), S is "slot" or "card" number, and PT is point number. For example, 105 32 is located in LCU 55C10, at point 32 of slot 5. In the drawings, the card or slot position is designated A, B, C, etc., instead of 1, 2, 3, etc.

To verify a tag at the Operator Control Station (OCS), display the tag using a group display and verify that the tag value or status is correct. For analog tags, the correct value is any positive number, unless otherwise specified in the step, since the equipment has not yet been calibrated. The value will be recorded, however, for information. For discrete tags, the correct value should be obvious from the action taken (OPEN/CLOSED for valve position, etc.). The signal location for discrete output tags may not be specifically listed in the test but are tested by verification of the resulting actions, i.e. valve position, flow, etc..

To verify a tag at the Local Operator Interface (LOI), display the tag on the LOI (this requires that a group display configuration has been downloaded from the OCS) and verify that the tag value or status is correct.

For actions initiated from the OCS, activate the tag given in parentheses and confirm the action by observing the tag given in the "Tagname" column.

SUPERSEDED BY EAU * 614624
12.19.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
105 12	JXA-68B019	GENRATOR PMP ST#2	___ At the common alarm junction of the diesel generator, jumper wire B9A-30 to B9A-H	KK 12.17.94	N/A
			Verify that this alarm is ON	KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
105 13	JA-68B019	ATS ALRM PMP ST#2	___ At the ATS, verify ATS UTILITY light is ON	KK 12.17.94	N/A
			___ OPEN normal power disconnect switch F8X650 on Pole E330	KK 12.17.94	N/A
			___ Verify ATS EMERGENCY light is ON	KK 12.17.94	N/A
			Verify that this alarm is ON	KK 12.17.94	KK 12.17.94
105 14	YS-68B019	GENRATOR STATUS	Verify that tag status is RUNNING at the OCS and ON at the LOI	ON KK 12.17.94	RUNNING KK 12.17.94
105 15	ZS-68B019	ATS STATUS	Verify that tag status is STANDBY at the OCS and ON at the LOI	ON KK 12.17.94	STANDBY KK 12.17.94
			___ Restore AC power on Pole E330 to original configuration	KK 12.17.94	N/A
			___* Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
103 31	JA6810VAC	AC ALRM PMP ST#2	Turn OFF the LCU UPS power at PNLBD 'B' CKT 13 and verify this alarm.	KK 12.17.94	KK 12.17.94

* AFTER 20 MINUTE MINIMUM RUN TIME FOR STANDBY GENERATOR WARM-UP.

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
105 12	JXA-68B019	GENRATOR PMP ST#2	___ At the common alarm junction of the diesel generator, jumper wire. B9A-30 to B9A-H	KK 12-10-94	N/A
			Verify that this alarm is ON	KK 12-10-94	KK 12-10-94
			___ ~~Reconnect wire~~ REMOVE SHORTING JUMPER B9A-30 and restore junction to as found condition	KK 12-10-94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12-10-94	KK 12-10-94
105 13	JA-68B019	ATS ALRM PMP ST#2	___ At the ATS, verify ATS ~~NORMAL~~ UTILITY light is ON	KK 12-10-94	N/A
			___ OPEN normal power disconnect switch F8X650 on Pole E330	KK 12-10-94	N/A
			___ Verify ATS ~~STANDBY~~ EMERGENCY light is ON	KK 12-10-94	N/A
			Verify that this alarm is ON	KK 12-10-94	KK 12-10-94
105 14	YS-68B019	GENRATOR STATUS	Verify that tag status is RUNNING	ON KK 12-10-94	RUNNING KK 12-10-94
105 15	ZS-68B019	ATS STATUS	Verify that tag status is STANDBY	ON KK 12-10-94	~~RUNNING~~ STANDBY KK 12-10-94
			___ Restore AC power on Pole E330 to original configuration	KK 12-10-94	N/A
			___ WAIT 20 MINUTES FOR MINIMUM RUN TIME Verify that the above three tags are normal at the LOI and OCS		
103 31	JA6810VAC	AC ALRM PMP ST#2	Turn OFF the LCU UPS power at PNLBD 'B' CKT 13	KK 12-10-94	KK 12-10-94
103 26	JA6810PS	PWR ALRM PMP ST#2	Verify that this alarm is ON	KK 12-10-94	KK 12-10-94

SUPERSEDED BY ECN 614604 12-17-94

AFTER STEP 103-32 *

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
103 26	JA6810PS	PWR ALRM PMP ST#2	Turn OFF the LCU primary power at PNLBD 'B' CKT 9 and verify that this alarm is ON	KK 12.17.94	KK 12.17.44
			___ Turn ON CKT 9	KK 12.17.94	N/A
103 32	JA6810VDC	BAT ALRM PMP ST#2	___ Leave CKT 13 OFF for about an hour to let UPS battery run down INITIATES BATTERY PWR. @ 9:41 A.M.	KK 12.17.94	KK 12.17.94
			Verify that this alarm is ON JA6810VDC	KK 12.17.94	KK 12.17.94
			___ Turn ON PNLBD 'B' CKT 13	KK 12.17.94	N/A KK
			___ Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
106 17	68BPA1_1	START PUMP CMD	START pump 68BPA1 from OCS by putting the pump in manual mode (HS68B012B) and then activate the start tag (HS68B012A_1)	KK 12.17.94	KK 12.17.44
103 4	II68B012	CURRENT 68B-P-A1	Verify current for pump A1 and record value 93.30 AMPS	KK 12.17.94	KK 12.17.94
106 9	ZS68B003N	CHK VALV B-ECV-03	Verify that check valve 68B-ECV-03 is open	ON KK 12.17.44	OPEN KK 12.17.94
103 5	PI68B003U	PMP PRES 68B-P-A1	Verify upstream pressure for ECV-03 and record value 23.00 PSI	KK 12.17.94	KK 12.17.94
103 6	PI68B003D	EFF PRES PMP ST#2	Verify downstream pressure for ECV-03 and record value 20.10 PSI	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
103 32	JA6810VDC	BATTERY STARTED @ 9:41 AM BAT ALRM PMP ST#2	___ Turn OFF the LCU primary power at PNLBD 'B' CKT 15 and leave off for about an hour to let UPS battery run down * ✓ PS ALARM STEP 103-26 Verify that this alarm is ON @ 10:58 AM. ___ Turn ON PNLBD 'B' CKT 13 and 15 ___ Verify that the above three tags are normal at the LOI and OCS	KK 12.10.94 KK 12.10.94 KK 12.10.94 KK 12.10.94	KK N/A KK 12.10.94 N/A KK 12.10.94
106 17	68BPA1_1	START PUMP CMD	START pump 68BPA1 from OCS by putting the pump in manual mode (HS68B012B) and then activate the start tag (HS68B012A_1)	KK 12.10.94	KK 12.10.94
103 4	II68B012	CURRENT 68B-P-A1	Verify current for pump A1 and record value 93.30	KK 12.10.94	KK 12.10.94
106 9	ZS68B003N	CHK VALV B-ECV-03	Verify that check valve 68B-ECV-03 is open	CLOSED KK 12.10.94	CLOSED KK 12.10.94
103 5	PI68B003U	PMP PRES 68B-P-A1	Verify upstream pressure for ECV-03 and record value 23.00	KK 12.10.94	KK 12.10.94
103 6	PI68B003D	EFF PRES PMP ST#2	Verify downstream pressure for ECV-03 and record value 20.10	KK 12.10.94	KK 12.10.94

SUPERSEDED BY ECN # 604624 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
N/A	PDI68B003	ECV003-B PRES DIF	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A	KK 12.10.94
106 18	68BPA1_0	STOP PUMP CMD	STOP pump 68BPA1 from OCS (HS68B012A_0)	KK 12.10.94	KK 12.10.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump A1 and record values below CURRENT II68B012 → 0 PI68B003U → -3.0 PI68B003D → 0.15	KK 12.10.94	KK 12.10.94
106 25	68BPB1_1	START PUMP CMD	START pump 68BPB1 from OCS by putting the pump in manual mode (HS68B028B) and then activate the start tag (HS68A028A_1)	KK 12.10.94	KK 12.10.94
103 8	II68B028	CURRENT 68B-P-B1	Verify current for pump B1 and record value 94.30 AMPS	KK 12.10.94	KK 12.10.94
105 18	ZS68B021N	CHK VALV B-ECV-21	Verify that check valve 68B-ECV-21 is open	ON KK 12.10.94	OPEN KK 12.10.94
103 9	PI68B021U	PMP PRES 68B-P-B1	Verify upstream pressure for ECV-21 and record value ~~31.0~~ KK 21.0 PSI	KK 12.10.94	KK 12.10.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
103 10	PI68B021D	EFF PRES PMP ST#2	Verify downstream pressure for ECV-21 and record value 18.2 PSI	KK 12.17.94	KK 12.17.94
N/A	PDI68B021	ECV021-B PRES DIF	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A	KK 12.17.94
106 26	68BPB1_0	STOP PUMP CMD	STOP pump 68BPB1 from OCS (HS68A028A_0)	KK 12.17.94	KK 12.17.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump B1 and record values below II68B028 +0.2 amps PI68B021U -3.0 PSI PI68B021D -2.4 PSI	KK 12.17.94	KK 12.17.94
106 10	ZS68B001C	VALV POS MV68B001	CLOSE inlet valve MV68B001 from OCS (HS68B001)	KK 12.17.94	KK 12.17.94
106 11	ZS68B001N	VALV POS MV68B001	OPEN inlet valve MV68B001 from OCS (HS68B001)	KK 12.17.94	KK 12.17.94
106 12	ZS68B002C	VALV POS MV68B002	CLOSE inlet valve MV68B002 from OCS (HS68B002)	KK 12.17.94	KK 12.17.94
106 13	ZS68B002N	VALV POS MV68B002	OPEN inlet valve MV68B002 from OCS (HS68B002)	KK 12.17.94	KK 12.17.94
105 10	ZS68B004C	HND VALV 68B-V-04	Manually CLOSE valve 68BV04	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
103 10	PI68B021D	EFF PRES PMP ST#2	Verify downstream pressure for ECV-21 and record value 18,2 PSI	KK 12.10.94	KK 12.10.94
N/A	PDI68B021	ECV021-B PRES DIF	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A	KK 12.10.94
106 26	68BPB1_0	STOP PUMP CMD	STOP pump 68BPB1 from OCS (HS68A028A_0)	KK 12.10.94	KK 12.10.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump B1 and record values below A 68B028 +0.2 B 68B021A -3.0 C 68B021BD -2.4	KK 12.10.94	KK 12.10.94
106 10	ZS68B001C	VALV POS MV68B001	CLOSE inlet valve MV68B001 from OCS (HS68B001_C) DELETE	KK 12.10.94	KK 12.10.94
106 11	ZS68B001N	VALV POS MV68B001	OPEN inlet valve MV68B001 from OCS (HS68B001_O) DELETE	KK 12.10.94	KK 12.10.94
106 12	ZS68B002C	VALV POS MV68B002	CLOSE inlet valve MV68B002 from OCS (HS68B002_C) DELETE	KK 12.10.94	KK 12.10.94
106 13	ZS68B002N	VALV POS MV68B002	OPEN inlet valve MV68B002 from OCS (HS68B002_O) DELETE	KK 12.10.94	KK 12.10.94
105 10	ZS68B004C	HND VALV 68B-V-04	Manually CLOSE valve 68BV04	KK 12.10.94	KK 12.10.94

SUPERSEDED BY ECN 614624 KK 12.10.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
105 11	ZS68B004N	HND VALV 68B-V-04	Manually OPEN valve 68BV04	KK 12.17.94	KK 12.17.94
105 22	ZS68B022C	HND VALV 68B-V-22	Manually CLOSE valve 68BV22	KK 12.17.94	KK 12.17.94
105 23	ZS68B022N	HND VALV 68B-V-22	Manually OPEN valve 68BV22	KK 12.17.94	KK 12.17.94
105 24	ZS68B041C	SLUICE GATE 41	CLOSE sluice gate 68BSLG41 from OCS (HS68B041A)	KK 12.17.94	KK 12.17.94
105 25	ZS68B041N	SLUICE GATE 41	OPEN sluice gate 68BSLG41 from OCS (HS68B041A)	KK 12.17.94	KK 12.17.94
105 16	XA68BPA1	PMP SEAL 68B-P-A1	___ At the pump seal junction XS-68B-PA1, jumper the blue wire at terminal '3' to ground terminal 'G'	KK 12.17.94	N/A
			Verify that this alarm is ON	KK 12.17.94	KK 12.17.94
			___ Restore the pump seal junction XS-68B-PA1 to as found condition	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
105 11	ZS68B004N	HND VALV 68B-V-04	Manually OPEN valve 68BV04	12.10.94	12.10.94
105 22	ZS68B022C	HND VALV 68B-V-22	Manually CLOSE valve 68BV22	12.10.94	12.10.94
105 23	ZS68B022N	HND VALV 68B-V-22	Manually OPEN valve 68BV22	12.10.94	12.10.94
105 24	ZS68B041C	SLUICE GATE 41	CLOSE sluice gate 68BSLG41 from OCS (HS68B041A_C) DELETED	12.10.94	12.10.94
105 25	ZS68B041N	SLUICE GATE 41	OPEN sluice gate 68BSLG41 from OCS (HS68B041A_O) DELETED	12.10.94	12.10.94
105 16	XA68BPA1	PMP SEAL 68B-P-A1	— At the pump seal junction XS-68B-PA1, jumper the blue wire at terminal '3' to ground terminal 'G'	12.10.94	N/A
			Verify that this alarm is ON	12.10.94	12.10.94
			— Restore the pump seal junction XS-68B-PA1 to as found condition	12.10.94	N/A
			— Verify that the above tag is normal at the LOI and OCS	12.10.94	12.10.94

SUPERSEDED BY ECN * 614624 12.11.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
105 17	XA68BPB1	PMP SEAL 68B-P-B1	___ At the pump seal junction XS-68B-PB1, jumper the blue wire at terminal '3' to ground terminal 'G'	KK 12.10.94	N/A
			Verify that this alarm is ON	KK 12.10.94	KK 12.10.94
			___ Restore the pump seal junction XS-68B-PB1 to as found condition	KK 12.10.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.10.94	KK 12.10.94
103 1	FI68B042	EFF FLOW PMP ST#2	___ At flow transmitter FT-68B-042, disconnect wires FT68B042(+) and FT68B042(-)	KK 12.10.94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	KK 12.10.94	N/A
			Verify that the effluent flow is 600 GPM ± 120 GPM and record value 600.15	KK 12.10.94	KK 12.10.94
			___ Restore flow transmitter FT-68B-042 to as found condition	KK 12.10.94	KK 12.10.94
103 2	TI68B046	AIR TEMP PMP ST#2	Verify that the measured room air temperature is within ±17°F of the MCS value. ___ Measured = 69.0 °F MCS reading = 69.3 °F	KK 12.10.94	KK 12.10.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
103 3	LIC68B004	LEVEL A PMP ST#2	Verify that the liquid level reading in side A is within ± 9 inches of the measured value. _____ Measured = 35.5 inches MCS reading = 37.2 inches	12.10.94	12.10.94
103 7	LIC68B022	LEVEL B PMP ST#2	Verify that the liquid level reading in side B is within ± 9 inches of the measured value. _____ Measured = 35.5 inches MCS reading = 35.2 inches	12.10.94	12.10.94
106 15	LAL68B005	LVL ALRM SIDE A	___ At device LSL-68B-005, disconnect wire B9A-15 Verify that this alarm is ~~ON~~ ON ___ Re-connect wire B9A-15 and restore device LSL-68B-005 to as found condition ___ Verify that the above tag is normal at the LOI and OCS	12.10.94 12.10.94 12.10.94 12.10.94	N/A 12.10.94 N/A 12.10.94
105 19	LAL68B023	LVL ALRM SIDE B	___ At device LSL-68B-023, disconnect wire B9A-16 Verify that this alarm is ON ___ Re-connect wire B9A-16 and restore device LSL-68B-023 to as found condition ___ Verify that the above tag is normal at the LOI and OCS	12.10.94 12.10.94 12.10.94 12.10.94	N/A 12.10.94 N/A 12.10.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
106 16	FAL688007	FLW ALRM 688-P-A1	___ At flow device FSL-68B-007, jumper wire P2A1-12 to P2A1-X1	KK 12.17.94	N/A
			Verify that this alarm is OFF	KK 12.17.94	KK 12.17.94
			___ Restore flow device FSL-68B-007 to as found condition	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
105 20	FAL688025	FLW ALRM 688-P-B1	___ At flow device FSL-68B-025, jumper wire P2B1-12 to P2B1-X1	KK 12.17.94	N/A
			Verify that this alarm is OFF	KK 12.17.94	KK 12.17.94
			___ Restore flow device FSL-68B-025 to as found condition	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C10 (Pump Station 2)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
106 16	FAL68B007	FLW ALRM 68B-P-A1	___ At flow device FSL-68B-007, jumper wire P2A1-12 to P2A1-X1	KK 12.10.94	KK 12.10.94
			Verify that this alarm is ~~ON~~ OFF	KK 12.10.94	KK 12.10.94
			___ Restore flow device FSL-68B-007 to as found condition	KK 12.10.94	~~KK~~ N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.10.94	KK 12.10.94
105 20	FAL68B025	FLW ALRM 68B-P-B1	___ At flow device FSL-68B-025, jumper wire P2B1-12 to P2B1-X1	KK 12.10.94	N/A ~~KK 12.10.94~~
			Verify that this alarm is ~~ON~~ OFF	KK 12.10.94	KK 12.10.94
			___ Restore flow device FSL-68B-025 to as found condition	KK 12.10.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.10.94	KK 12.10.94

SUPERSEDED BY ECN # 614624 12.12.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC .

LCU 55C13 (Purex)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
133 31	JA6813VAC	AC ALRM 225-EC	Turn OFF the LCU UPS power at PNLBD CKT 5 and verify this alarm	KK 12.17.94	~~N/A~~ KK 12.17.94
133 26	JA6813PS	PWR ALRM 225-EC	Turn OFF the LCU primary power at PNLBD CKT ~~11~~ and verify that this alarm is ON AT 14:21 HRS.	KK 12.17.94	~~N/A~~ KK 12.17.94
			___ Turn ON CKT ~~11~~ 8 KK 12.17.94	KK 12.17.94	N/A
133 32	JA6813VDC	BAT ALRM 225-EC	___ Leave CKT 5 OFF for about an hour to let UPS battery run down	KK 12.17.94	N/A
			Verify that this alarm is ON AT 15:41 HRS.	KK 12.17.94	KK 12.17.94
			___ Turn ON PNLBD CKT 5	KK 12.17.94	N/A
			___ Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
133 1	AIW20-19-1	EFF PH PUREX	Verify that pH reading is reasonable (±10%) compared to value obtained from personnel at the existing Purex monitoring station and record value Purex Value 7.2 pH MCS Value 7.6 pH	KK 12.17.94	KK 12.17.94
133 2	* RIW20-2-1	RAD LVL PUREX	Verify that radiation reading is reasonable (±10%) compared to value obtained from personnel at the existing Purex monitoring station and record value Purex Value 88 on RM-W20-1 MCS Value 87	KK 12.17.94	KK 12.17.94

* SEE EXCEPTION # 3

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C13 (Purex)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
133 31	JA6813VAC	AC ALRM 225-EC	Turn OFF the LCU UPS power at PNLBD CKT 5	12.6.94	12.6.94
133 26	JA6813PS	PWR ALRM 225-EC	Verify that this alarm is ON		
133 32	JA6813VDC	BAT ALRM 225-EC	— Turn OFF the LCU primary power at PNLBD CKT 11 and leave off for about an hour to let UPS battery run down AT 14:21 HRS 12.6.94	12.06.94	12.06.94
			Verify that this alarm is ON AT 15:21 HRS 12.6.94	12.06.94	12.06.94
			— Turn ON PNLBD CKT 9 and 11	12.6.94	N/A
			— Verify that the above three tags are normal at the LOI and OCS	12.6.94	12.6.94
133 1	AIW20-19-1	EFF PH PUREX	Verify that pH reading is reasonable (±10%) compared to value obtained from personnel at the existing Purex monitoring station and record value or 51% NIT-W20-AA-1 Purex Value 7.2 pH MCS Value 7.0 pH	12.6.94	12.6.94
133 2	RIW20-2-1 * exception #3 BY ECN 614624 12.17.94	RAD LVL PUREX	Verify that radiation reading is reasonable (±10%) compared to value obtained from personnel at the existing Purex monitoring station and record value RA-W20-1 Purex Value 88 MCS Value 87	12.14.94	12.14.94

SUPERSEDED

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C13 (Purex)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
133 3	*FIW20-1-2	EFF FLOW PUREX	Verify that flow reading is reasonable (±10%) compared to value obtained from personnel at the existing Purex monitoring station and record value indicates in % scale or million gallons per Purex Value 245 GPM ~~± 3.2 GPD~~ ✓ ___ minutes per day MCS Value 252 GPM		
133 4	TI68EC001	AIR TEMP 225-EC	Verify that the measured room air temperature is within ±17°F of the MCS value. _____ Measured = 68.1 °F MCS reading = 67.7 °F	KK 12-6-94	KK 12-6-94

~~* PLOT BAR GRAF IS INTERMITTANT ON LCU CRT DISPLAY~~ KK 12/14/94
RE-VERIFIED OPERABLE

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 31	JA6816VAC	AC ALRM 6653	Turn OFF the LCU UPS power at PNLBD CKT 7 and verify this alarm	KK 12.17.94	~~KK~~ 12.17.94
163 26	JA6816PS	PWR ALRM 6653	Turn OFF the LCU UPS power at PNLBD CKT 9 and verify this alarm AT 9:18 AM, ___ Turn ON CKT 9	KK 12.17.94 KK 12.17.94	KK 12.17.94 N/A
163 32	JA6816VDC	BAT ALRM 6653	___ Leave CKT 7 OFF for about an hour to let UPS battery run down Verify that this alarm is ON AT 10:46 AM, ___ Turn ON CKT 7 ___ Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94 KK 12.17.94 KK 12.17.94 KK 12.17.94	N/A KK 12.17.94 N/A KK 12.17.94
166 18	ZS68C004C	VALV POS POND B	CLOSE inlet valve to Pond B from OCS (HS68C004)	KK 12.17.94	KK 12.17.94
166 17	ZS68C004N	VALV POS POND B	OPEN inlet valve to Pond B from OCS (HS68C004)	KK 12.17.94	KK 12.17.94
166 12	ZS68C005C	VALV POS POND A	CLOSE inlet valve to Pond A from OCS (HS68C005)	KK 12.17.94	KK 12.17.94
166 11	ZS68C005N	VALV POS POND A	OPEN inlet valve to Pond A from OCS (HS68C005)	KK 12.17.94	KK 12.17.94
166 13	YA68C001	SAM BOTI DISPOSAL	___ At sampler device YA-68C-001, jumper wire 9A-17 to 9A-H Verify status is PROG COMP at OCS and ON at the LOI ___ Remove jumper ___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94 KK 12.17.94 KK 12.17.94 KK 12.17.94	N/A KK 12.17.94 N/A KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 31	JA6816VAC	AC ALRM 6653	Turn OFF the LCU UPS power at PNLBD CKT 9 7	KK 12-6-94	KK 12-6-94
163 26	JA6816PS	PWR ALRM 6653	Verify that this alarm is ON		
163 32	JA6816VDC	BAT ALRM 6653	___ Turn OFF the LCU primary power at PNLBD CKT 9 11 and leave off for about an hour to let UPS battery run down ON @ 9:15 AM Verify that this alarm is ON ___ Turn ON PNLBD CKT 9 and 11 ___ Verify that the above three tags are normal at the LOI and OCS	KK 12-6-94 10:46 AM KK 12-6-94 KK 12-6-94 KK 12-6-94	KK 12-6-94 KK 12-6-94 N/A KK 12-6-94
166 18	ZS68C004C	VALV POS POND B	CLOSE inlet valve to Pond B from OCS (HS68C004)	KK 12-6-94	KK 12-6-94
166 17	ZS68C004N	VALV POS POND B	OPEN inlet valve to Pond B from OCS (HS68C004)	KK 12-6-94	KK 12-6-94
166 12	ZS68C005C	VALV POS POND A	CLOSE inlet valve to Pond A from OCS (HS68C005)	KK 12-6-94	KK 12-6-94
166 11	ZS68C005N	VALV POS POND A	OPEN inlet valve to Pond A from OCS (HS68C005)	KK 12-6-94	KK 12-6-94
166 13	YA68C001	SAM BOTl DISPOSAL	___ At sampler device YA-68C-001, jumper wire 9A-17 to 9A-H Verify status is PROG COMP @ OCS ONLY REMOVE SHORTING JUMPER ___ ~~Re-connect~~ wire 9A-17 and restore YA-68C-001 to as found condition ___ Verify that the above tag is normal at the LOI and OCS	KK 12-6-94 N/A KK 12-6-94 KK 12-6-94	N/A KK 12-6-94 N/A KK 12-6-94

SUPERSEDED BY ECN # 614624 12-7-94 KK

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
166 14	XA68C001	SAM BOT1 DISPOSAL	___ At sampler device XA-68C-001, jumper wire 9A-18 to 9A-H	KK 12.17.94	N/A
			Verify status is TRBLR ARLM at OCS an ON at the LOI	N/A KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
166 15	YA68C002	SAM BOT2 DISPOSAL	___ At sampler device YA-68C-002, jumper wire 9A-19 to 9A-H	KK 12.17.94	N/A
			Verify status is PROG COMP at OCS and ON at the LOI	KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
166 16	XA68C002	SAM BOT2 DISPOSAL	___ At sampler device XA-68C-002, jumper wire 9A-20 to 9A-H	KK 12.17.94	N/A
			Verify status is TRBLR ARLM at OCS and ON at the LOI	KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
166 14	XA68C001	SAM BOT1 DISPOSAL	___ At sampler device XA-68C-001, jumper wire 9A-18 to 9A-H	KK 12-6-94	N/A
			Verify status is TRBLR ARLM	~~KK 12-6-94~~ N/A	KK 12-6-94
			___ ~~Re-connect~~ REMOVE SHORTING JUMPER wire 9A-18 and restore XA-68C-001 to as found condition	KK 12-6-94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12-6-94	KK 12-6-94
166 15	YA68C002	SAM BOT2 DISPOSAL	___ At sampler device YA-68C-002, jumper wire 9A-19 to 9A-H	KK 12-6-94	N/A
			Verify status is PROG COMP	N/A	KK 12-6-94
			___ ~~Re-connect~~ REMOVE SHORTING JUMPER wire 9A-19 and restore YA-68C-002 to as found condition	KK 12-6-94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12-6-94	KK 12-6-94
166 16	XA68C002	SAM BOT2 DISPOSAL	___ At sampler device XA-68C-002, jumper wire 9A-20 to 9A-H	KK 12-6-94	N/A
			Verify status is TRBLR ARLM	N/A	KK 12-6-94
			___ ~~Re-connect~~ REMOVE SHORTING JUMPER wire 9A-20 and restore XA-68C-002 to as found condition	KK 12-6-94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12-6-94	KK 12-6-94

SUPERSEDED BY ECN # 601424 12.11.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 1	LI68C007	LEVEL B DISPOSAL	___ At level transmitter LT-68C-007, disconnect wires LT68C007(+) and LT68C007(-)	AK 12-6-94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	AK 12-6-94	N/A
			Verify that the level reading is 107" ± 21" and record value 106.9"	AK 12-6-94	AK 12-6-94
			___ Restore level transmitter LT-68C-007 to as found condition	AK 12-6-94	AK 12-6-94
163 2	LI68C008	LEVEL A DISPOSAL	___ At level transmitter LT-68C-008, disconnect wires LT68C008(+) and LT68C008(-)	AK 12-6-94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	AK 12-6-94	N/A
			Verify that the level reading is 101" ± 20" and record value 101"	AK 12-6-94	AK 12-6-94
			___ Restore level transmitter LT-68C-008 to as found condition	AK 12-6-94	AK 12-6-94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 3	FI68C003	INF FLOW DISPOSAL	___ At flow transmitter FT-68C-003, disconnect wires FT68C003(+) and FT68C003(-)	KK 12.17.94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	KK 12.17.94	N/A
			Verify that the flow reading is 1500 GPM ± 300 GPM and record value 1503.9	KK 12.17.94	KK 12.17.94
			___ Restore flow transmitter FT-68C-003 to as found condition	KK 12.17.94	KK 12.17.94
163 4	TI68C009	AIR TEMP 6653	Verify that the measured room air temperature is within ±17°F of the MCS value. _____ Measured = 71.4 °F MCS reading = 68.5 °F	KK 12.17.94	KK 12.17.94
166 19	FXA68C003	XMT FAIL INF DISP	___ At flow device FT-68C-003, jumper wire 9A-10 to 9A-H	KK 12.17.94	N/A
			Verify status is FAIL at OCS and ON at the LOI	KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 3	FI68C003	INF FLOW DISPOSAL	___ At flow transmitter FT-68C-003, disconnect wires FT68C003(+) and FT68C003(-)	KK 12.6.94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	KK 12.6.94	N/A
			Verify that the flow reading is 1500 GPM ± 300 GPM and record value 1563.9	KK 12.6.94	KK 12.6.94
			___ Restore flow transmitter FT-68C-003 to as found condition	KK 12.6.94	KK 12.6.94
163 4	TI68C009	AIR TEMP 6653	Verify that the measured room air temperature is within ±17°F of the MCS value. Measured = 74.7 °F MCS reading = 68.5 °F	KK 12.6.94	KK 12.6.94
166 19	FXA68C003	XMT FAIL INF DISP	___ At flow device FT-68C-003, jumper wire 9A-10 to 9A-H	KK 12/6/94	N/A ~~12.6.94~~
			Verify status is FAIL	KK 12.6.94 ON	KK 12.6.94
			___ ~~Re-connect~~ REMOVE SHORTING JUMPER wire 9A-10 and restore FT-68C-003 to as found condition	KK 12.6.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.6.94	KK 12.6.94

SUPERSEDED BY ECN # 614624 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
166 21	FXA688100	XMT FAIL H-LINE	___ At flow device FT-688-100, jumper wire 9A-15 to 9A-H	KK 12.17.94	N/A
			Verify status is FAIL at the OCS and ON at the LOI	KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
166 20	NXA68B100	LOST SIG H-LINE	___ At MUX-1B, jumper wire 9A-14 to 9A-H	KK 12.17.94	N/A
			Verify status is FAIL at the OCS and ON at the LOI	KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
166 22	NXA68B101	LOST SIG 242-A	___ At MUX-2B, jumper wire 9A-16 to 9A-H	KK 12.17.94	N/A
			Verify status is FAIL at the OCS and ON at the LOI	KK 12.17.94	KK 12.17.94
			___ Remove jumper	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
166 21	FXA68B100	XMT FAIL H-LINE	___ At flow device FT-68B-100, jumper wire 9A-15 to 9A-H	KK 12.10.94	N/A
			Verify status is FAIL	ON KK 12.10.94	FAIL KK 12.10.94
			___ Re-connect wire 9A-15 and restore FT-68B-100 to as found condition	KK 12.10.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.10.94	KK 12.10.94
166 20	NXA68B100	LOST SIG H-LINE	___ At MUX-1B, jumper wire 9A-14 to 9A-H	KK 12.10.94	KK N/A
			Verify status is FAIL	ON KK 12.10.94	FAIL KK 12.10.94
			___ Re-connect wire 9A-14 and restore MUX-1B to as found condition	KK 12.10.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.10.94	KK 12.10.94
166 22	NXA68B101	LOST SIG 242-A	___ At MUX-2B, jumper wire 9A-16 to 9A-H	KK 12.10.94	N/A
			Verify status is FAIL	ON KK 12.10.94	FAIL KK 12.10.94
			___ Re-connect wire 9A-16 and restore MUX-2B to as found condition	KK 12.10.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.10.94	KK 12.10.94

SUPERSEDED BY ECN # 614624
K.K. Kelly 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 5	FI68B100	FLOW H-LINE	___ At flow device FI-68B-100, disconnect wires FI68B100(+) and FI68B100(-)	KK 12.17.94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	KK 12.17.94	N/A
			Verify that the flow is 385 GPM ± 77 GPM and record value 384.6	KK 12.17.94	KK 12.17.94
			___ Restore flow device FI-68B-100 to as found condition	KK 12.17.94	N/A
163 6	FI68B101	BACKWASH 242-A	___ In the 242-A MUX Room at the new modem enclosure, disconnect wires FI68B101(+) and FI68B101(-)	KK 12.17.94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	KK 12.17.94	N/A
			Verify that the flow is 500 GPM ± 100 GPM and record value 499.75	KK 12.17.94	KK 12.17.94
			___ Restore field device FI-RW-1/2 to as found condition	KK 12.17.94	N/A

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 5	FI68B100	FLOW H-LINE	___ At flow device FI-688-100, disconnect wires FI68B100(+) and FI68B100(-)	[illegible] 12.7.94	N/A 12
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	[illegible] 12.7.94	N/A
			Verify that the flow is 385 GPM ± 77 GPM and record value 384.6	[illegible] 12.7.94	[illegible] 12.16.94
			___ Restore flow device FI-688-100 to as found condition	[illegible] 12.16.94	N/A
163 6	FI68B101	BACKWASH 242-A	___ In the 242-A MUX Room in cabinet PCM MUX-0, disconnect wires FI68B101(+) and FI68B101(-)	[illegible] 12.8.94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	[illegible] 12.8.94	N/A
			Verify that the flow is 500 GPM ± 100 GPM and record value 499.75	[illegible] 12.8.94	[illegible] 12.10.94
			___ Restore field device FI-RW-1/2 to as found condition	[illegible] 12.8.94	N/A

SUPERSEDED BY ECN # 614624 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 7	YI68B102	LEAK 242-A	___ In the 242-A MUX Room at the new modem enclosure, disconnect wires YI68B102(+) and YI68B102(-)	KK 12.17.94	N/A
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	KK 12.17.94	N/A
			Verify that the value is 50% ± 5% and record value 50 %	~~KK~~ 12.17.94	~~N/A~~ 12.17.94
			___ Restore the wires to as found condition	KK 12.17.94	N/A

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C16 (Disposal Pond)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
163 7	YI688102	LEAK 242-A	___ In the 242-A MUX Room at the PCM MUX-0 cabinet, disconnect wires YI688102(+) and YI68B102(-)	KK 12-8-94	n/a
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	KK 12-8-94	n/a
			Verify that the value is 50% ± 5% and record value	KK 12-8-94	KK 12-10-94
			50 %	KK 12-8-94	
			___ Restore the wires to as found condition	KK 12-8-94	n/a

SUPERSEDED BY ECN # 614624
Kirk Kelly 12-17-94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
			___ At the ATS, verify ATS UTILITY light is ON	KK 12.17.94	N/A
			___ OPEN normal power disconnect switch F8X651 on Pole W2413	KK 12.17.94	N/A
			___ Verify ATS EMERGENCY light is ON	KK 12.17.94	N/A
205 31	ZS68A019	ATS STATUS	Verify that tag status is STANDBY at the OCS and ON at the LOI	KK 12.17.94	KK 12.17.94
205 32	JA68A019	ATS ALRM PMP ST#1	Verify that this alarm is ON	KK 12.17.94	KK 12.17.94
			___ Restore AC power on Pole 2413 to original configuration	KK 12.17.94	N/A
			___ Verify that the above two tags are normal at the LOI and OCS	KK 12.17.94	~~N/A~~ KK 12.17.94
203 31	JA6820VAC	AC ALRM PMP ST#1	Turn OFF the LCU UPS power at PNLBD 'A' CKT 13 and verify this alarm	KK 12.17.94	KK 12.17.94
203 26	JA6820PS	PWR ALRM PMP ST#1	Turn OFF the LCU primary power at PNLBD 'A' CKT 9 and verify that this alarm is ON AT 13:27 HRS	KK 12.17.94	~~N/A~~ KK 12.17.94
			___ Turn ON CKT 9	KK 12.17.94	N/A
			___ Leave CKT 13 OFF for about an hour to let UPS battery run down	KK 12.17.94	N/A
203 32	JA6820VDC	BAT ALRM PMP ST#1	Verify that this alarm is ON AT 14:43 HRS	KK 12.17.94	KK 12.17.94
			___ Turn ON PNLBD CKT 13	KK 12.17.94	N/A
			___ Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
			— At the ATS, verify ATS ~~NORMAL~~ UTILITY light is ON	KK VL 12/4	N/A
			— OPEN normal power disconnect switch F8X651 on Pole W2413	KK	N/A
			— Verify ATS ~~STANDBY~~ EMERGENCY light is ON	KK	N/A
205 31	ZS68A019	ATS STATUS	Verify that tag status is STANDBY	ON KK	STBY KK
205 32	JA68A019	ATS ALRM PMP ST#1	Verify that this alarm is ON	KK ___	KK ___
			— Restore AC power on Pole 2413 to original configuration	KK	N/A
			— Verify that the above two tags are normal at the LOI and OCS	KK	~~N/A~~ KK
203 31	JA6820VAC	AC ALRM PMP ST#1	Turn OFF the LCU UPS power at PNLBD 'A' CKT 13	KK	N/A
203 26	JA6820PS	PWR ALRM PMP ST#1	Verify that this alarm is ON		KK
203 32	JA6820VDC	BAT ALRM PMP ST#1	— Turn OFF the LCU primary power at PNLBD 'A' CKT 15 and leave off for about an hour to let UPS battery run down	KK	N/A
			12.12.94 ON @ 13:29 Verify that this alarm is ON 14:48	KK ___	KK ___
			— Turn ON PNLBD 'A' CKT 13 and 15	KK	~~N/A~~ KK
			— Verify that the above three tags are normal at the LOI and OCS	KK	KK

SUPERSEDED BY ECN # 614624 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
206 21	68APA1_1	START PUMP CMD	START pump 68APA1 from OCS by putting the pump in manual mode (HS68A012B) and then activate the start tag (HS68A012A_1)	KK 12.12.94	KK 12.12.94
203 4	II68A012	CURRENT 68A-P-A1	Verify current for pump A1 and record value 101.5	KK 12.12.94	KK 12.12.94
205 30	ZS68A003N	CHK VALV A-ECV-03	Verify that check valve 68A-ECV-03 is open	ON KK 12.12.94	OPEN KK 12.12.94
203 5	PI68A003U	PMP PRES 68A-P-A1	Verify upstream pressure for ECV-03 and record value 17.95	KK 12.12.94	KK 12.12.94
203 6	PI68A003D	EFF PRES PMP ST#1	Verify downstream pressure for ECV-03 and record value 16.1	KK 12.12.94	KK 12.12.94
N/A	PDI68A003	ECV03-A PRES DIF 1.73	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A KK 12.12.94	KK 12.12.94
206 22	68APA1_0	STOP PUMP CMD	STOP pump 68APA1 from OCS (HS68A012A_0)	KK 12.12.94	KK 12.12.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
			Verify that the current, upstream pressure, and downstream pressure changed for pump A1 and record values below II 68A012 +.08 CURRENT PI 68A003U -0.3 PSI PI 68A003D -0.4 PSI	KK 12/12/94	~~KK~~ AA 12/12/94
206 25	68APA2_1	START PUMP CMD	START pump 68APA2 from OCS by putting the pump in manual mode (HS68A026B) and then activate the start tag (HS68A026A_1)	KK 12.12.94	KK 12.12.94
203 7	II68A026	CURRENT 68A-P-A2	Verify current for pump A2 and record value 112.95	KK 12.12.94	KK 12.12.94
205 12	ZS68A008N	CHK VALV A-ECV-08	Verify that check valve 68A-ECV-08 is open	ON KK 12.12.94	OPEN KK 12.12.94
203 8	PI68A008U	PMP PRES 68A-P-A2	Verify upstream pressure for ECV-08 and record value 34.6	KK 12.12.94	KK 12.12.94
203 9	PI68A008D	EFF PRES PMP ST#1	Verify downstream pressure for ECV-08 and record value 32.0	KK 12.12.94	KK 12.12.94
N/A	PDI68A0008	ECV08-A PRES DIF	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A KK 12.12.94	KK 12.12.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
206 26	68APA2_0	STOP PUMP CMD	STOP pump 68APA2 from OCS (HS68A026A_0)	KL 12.12.94	KL 12.12.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump A2 and record values below PI 68A038U -.25 PT 68A038D -0.25 II 68A026 +0.3	KL 12.12.94	KL 12.12.94
206 31	68APB1_1	START PUMP CMD	START pump 68APB1 from OCS by putting the pump in manual mode (HS68A038B) and then activate the start tag (HS68A038A_1)	KL 12.12.94	KL 12.12.94
203 11	II68A038	CURRENT 68A-P-B1	Verify current for pump B1 and record value +104.5	KL 12.12.94	KL 12.12.94
205 13	ZS68A020N	CHK VALV A-ECV-20	Verify that check valve 68A-ECV-20 is open	ON KL 12.12.94	OPEN KL 12.12.94
203 12	PI68A020U	PMP PRES 68A-P-B1	Verify upstream pressure for ECV-20 and record value 18.2	KL 12.12.94	KL 12.12.94
203 13	PI68A020D	EFF PRES PMP ST#1	Verify downstream pressure for ECV-20 and record value 16.5	KL 12.12.94	KL 12.12.94

7

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
N/A	PDI68A020	ECV20-A PRES DIF	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A KK 12.17.94	KK 12.17.94
206 30	68APB1_0	STOP PUMP CMD	STOP pump 68APB1 from OCS (HS68A038A_0)	KK 12.17.94	KK 12.17.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump B1 and record values below II68A038 +0.11 AMPS PI68A020U -0.1 PSI PI68A020D -0.3 PSI	KK 12.17.94	KK 12.17.94
206 23	68APB2_1	START PUMP CMD	START pump 68APB2 from OCS by putting the pump in manual mode (HS68A046B) and then activate the start tag (HS68A046A_1)	KK 12.17.94	KK 12.17.94
203 14	II68A046	CURRENT 68A-P-B2	Verify current for pump B2 and record value +112.75	KK 12.17.94	KK 12.17.94
205 22	ZS68A025N	CHK VALV A-ECV-25	Verify that check valve 68A-ECV-25 is open	ON KK 12.17.94	OPEN KK 12.17.94
203 15	PI68A025U	PMP PRES 68A-P-B2	Verify upstream pressure for ECV-25 and record value 43.3 PSI	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
N/A	PDI68A020	ECV20-A PRES DIF 1.7	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A 12.12.94	12.12.94
206 32	68APB1_0	STOP PUMP CMD	STOP pump 68APB1 from OCS (HS68A038A_0)	12.12.94	12.12.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump B1 and record values below PT68A020U -0.1 PT68A020D -0.3 II68A038 +0.11	12.12.94	12.12.94
206 23	68APB2_1	START PUMP CMD	START pump 68APB2 from OCS by putting the pump in manual mode (HS68A046B) and then activate the start tag (HS68A046A_1)	12.12.94	12.12.94
203 14	II68A046	CURRENT 68A-P-B2	Verify current for pump B2 and record value +112.75	12.12.94	12.12.94
205 22	ZS68A028N	CHK VALV A-ECV-25	Verify that check valve 68A-ECV-25 is open	ON 12.12.94	OPEN 12.12.94
203 15	PI68A025U	PMP PRES 68A-P-B2	Verify upstream pressure for ECV-25 and record value 43.3	12.12.94	12.12.94

SUPERSEDES BY ECN [illegible] 12.11.94

415

1.8

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
203 16	PI68A025D	EFF PRES PMP ST#1	Verify downstream pressure for ECV-25 and record value 41.5 PSI	12.12.94	12.12.94
N/A	PDI68A025	ECV25-A PRES DIF	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A 12.12.94	12.12.94
206 24	68APB2_0	STOP PUMP CMD	STOP pump 68APB2 from OCS (HS68A046A_0)	12.17.94	12.17.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump B2 and record values below II68A046 +0.2 amps PI68A025U -3.86 PSI PI68A025D +0.5 PSI	12.17.94	12.17.94
206 9	ZS68A001C	VALV POS MV68A001	CLOSE inlet valve MV68A001 from OCS (HS68A001)	12.17.94	12.17.94
206 10	ZS68A001N	VALV POS MV68A001	OPEN inlet valve MV68A001 from OCS (HS68A001)	12.17.94	12.17.94
206 11	ZS68A002C	VALV POS MV68A002	CLOSE inlet valve MV68A002 from OCS (HS68A002)	12.17.94	12.17.94
206 12	ZS68A002N	VALV POS MV68A002	OPEN inlet valve MV68A002 from OCS (HS68A002)	12.17.94	12.17.94
205 9	ZS68A004C	HND VALV 68A-V-04	Manually CLOSE valve 68AV04	12.17.94	12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
203 16	PI68A025D	EFF PRES PMP ST#1	Verify downstream pressure for ECV-25 and record value 41.5	KK 12.12.94	KK 12.12.94
N/A	PDI68A025	ECV25-A PRES DIF	Verify that the differential pressure tag reading at the OCS is reasonable (±10%) compared to a value obtained from hand calculation.	N/A KK 12.12.94	KK 12.12.94
206 24	68APB2_0	STOP PUMP CMD	STOP pump 68APB2 from OCS (HS68A046A_0)	KK 12.12.94	KK 12.12.94
			Verify that the current, upstream pressure, and downstream pressure changed for pump B2 and record values below II 68A025U 3.8C PI68A025D 40.2 KK 12/12/94 + 0.5 II 68A046 + 0.2	KK 12.12.94	KK 12.12.94
206 9	ZS68A001C	VALV POS MV68A001	CLOSE inlet valve MV68A001 from OCS (HS68A001_C)	KK	KK
206 10	ZS68A001N	VALV POS MV68A001	OPEN inlet valve MV68A001 from OCS (HS68A001_O)	KK	KK
206 11	ZS68A002C	VALV POS MV68A002	CLOSE inlet valve MV68A002 from OCS (HS68A002_C)	KK	KK
206 12	ZS68A002N	VALV POS MV68A002	OPEN inlet valve MV68A002 from OCS (HS68A002_O)	KK	KK
205 9	ZS68A004C	HND VALV 68A-V-04	Manually CLOSE valve 68AV04	KK	KK

SUPERSEDED BY ECN # 614604 12.12.94 KK

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
205 10	ZS68A004N	HND VALV 68A-V-04	Manually OPEN valve 68AV04	KK 12.17.94	KK 12.17.94
205 14	ZS68A009C	HND VALV 68A-V-09	Manually CLOSE valve 68AV09	KK 12.17.94	KK 12.17.94
205 15	ZS68A009N	HND VALV 68A-V-09	Manually OPEN valve 68AV09	KK 12.17.94	KK 12.17.94
205 20	ZS68A021C	HND VALV 68A-V-21	Manually CLOSE valve 68AV21	KK 12.17.94	KK 12.17.94
205 21	ZS68A021N	HND VALV 68A-V-21	Manually OPEN valve 68AV21	KK 12.17.94	KK 12.17.94
205 25	ZS68A026C	HND VALV 68A-V-26	Manually CLOSE valve 68AV26	KK 12.17.94	KK 12.17.94
205 26	ZS68A026N	HND VALV 68A-V-26	Manually OPEN valve 68AV26	KK 12.17.94	KK 12.17.94
205 28	ZS68A051C	SLUICE GATE 51	CLOSE sluice gate 68ASLG51 from OCS (HS68A051A)	KK 12.17.94	KK 12.17.94
205 27	ZS68A051N	SLUICE GATE 51	OPEN sluice gate 68ASLG51 from OCS (HS68A051A)	KK 12.17.94	KK 12.17.94
205 16	XA68APA1	PMP SEAL 68A-P-A1	___ At the pump seal junction XS-68A-PA1, jumper the blue wire at terminal '3' to ground terminal 'G' Verify that this alarm is ON ___ Restore the pump seal junction XS-68A-PA1 to as found condition ___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94 KK 12.17.94 KK 12.17.94 KK 12.17.94	KK 12.17.94 KK 12.17.94 N/A KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
205 10	ZS68A004N	HND VALV 68A-V-04	Manually OPEN valve 68AV04	12-13-94	12-13-94
205 14	ZS68A009C	HND VALV 68A-V-09	Manually CLOSE valve 68AV09		
205 15	ZS68A009N	HND VALV 68A-V-09	Manually OPEN valve 68AV09		
205 20	ZS68A021C	HND VALV 68A-V-21	Manually CLOSE valve 68AV21		
205 21	ZS68A021N	HND VALV 68A-V-21	Manually OPEN valve 68AV21		
205 25	ZS68A026C	HND VALV 68A-V-26	Manually CLOSE valve 68AV26		
205 26	ZS68A026N	HND VALV 68A-V-26	Manually OPEN valve 68AV26		
205 28	ZS68A051C	SLUICE GATE 51	CLOSE sluice gate 68ASLG51 from OCS (HS68A051A_C)		
205 27	ZS68A051N	SLUICE GATE 51	OPEN sluice gate 68ASLG51 from OCS (HS68A051A_O)		
205 16	XA68APA1	PMP SEAL 68A-P-A1	___ At the pump seal junction XS-68A-PA1, jumper the blue wire at terminal '3' to ground terminal 'G' Verify that this alarm is ON ___ Restore the pump seal junction XS-68A-PA1 to as found condition ___ Verify that the above tag is normal at the LOI and OCS		

SUPERSEDED BY ECN # 614624 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
205 17	XA68APA2	PMP SEAL 68A-P-A2	___ At the pump seal junction XS-68A-PA2, jumper the blue wire at terminal '3' to ground terminal 'G'	NK 12.13.94	NK 12.13.94
			Verify that this alarm is ON	NK 12.13.94	NK 12.13.94
			___ Restore the pump seal junction XS-68A-PA2 to as found condition	NK 12.13.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	NK 12.13.94	NK 12.13.94
206 15	XA68APB1	PMP SEAL 68A-P-B1	___ At the pump seal junction XS-68A-PB1, jumper the blue wire at terminal '3' to ground terminal 'G'	NK 12.13.94	NK 12.13.94
			Verify that this alarm is ON	NK 12.13.94	NK 12.13.94
			___ Restore the pump seal junction XS-68A-PB1 to as found condition	NK 12.13.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	NK 12.13.94	NK 12.13.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
206 16	XA68APB2	PMP SEAL 68A-P-B2	___ At the pump seal junction XS-68A-PB2, jumper the blue wire at terminal '3' to ground terminal 'G'	NK 12.13.94	NK 12.13.94
			Verify that this alarm is ON	NK 12.13.94	NK 12.13.94
			___ Restore the pump seal junction XS-68A-PB2 to as found condition	NK 12.13.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	NK 12.13.94	NK 12.13.94
203 1	FI68A052	EFF FLOW PMP ST#1	___ At flow transmitter FT-68A-052, disconnect wires FT68A052(+) and FT68A052(-)	NK 12.13.94	NK 12.13.94
			___ Connect the wires to a loop calibrator and set the output to 12 ± 0.2 mA	NK 12.13.94	N/A
			Verify that the effluent flow is 600 GPM ± 120 GPM and record value 600.38	NK 12.13.94	NK 12.13.94
			___ Restore flow transmitter FT-68A-052 to as found condition	NK 12.13.94	N/A
203 2	TI68A056	AIR TEMP PMP ST#1	Verify that the measured room air temperature is within ±17°F of the MCS value. ___ Measured = 74.0 °F MCS reading = 74.72 °F	NK 12.13.94	NK 12.13.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
203 3	LIC68A004	LEVEL A PMP ST#1	Verify that the liquid level reading in side A is within ± 24 inches of the measured value. ~~104"~~ Measured = 104" inches MCS reading = 106.7 inches	12.13.94	12.13.94
203 10	LIC68A030	LEVEL B PMP ST#1	Verify that the liquid level reading in side B is within ± 24 inches of the measured value. _____ Measured = 104" inches MCS reading = 109.7 inches	12.13.94	12.13.94
206 13	LAL68A005	LV ALMA PUMP S#1	___ At device LSL-68A-005, disconnect wire A9A-15 Verify that this alarm is ON ___ Re-connect wire A9A-15 and restore device LSL-68A-005 to as found condition ___ Verify that the above tag is normal at the LOI and OCS	12.13.94 12.13.94 12.13.94 12.13.94	12.13.94 12.13.94 N/A 12.13.94
206 14	LAL68A031	LV ALMB PUMP S#1	___ At device LSL-68A-031, disconnect wire A9A-16 Verify that this alarm is ON ___ Re-connect wire A9A-16 and restore device LSL-68A-031 to as found condition ___ Verify that the above tag is normal at the LOI and OCS	12.13.94 12.13.94 12.13.94 12.13.94	12.13.94 12.13.94 N/A 12.13.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
205 29	FAL68A007	FLW ALRM 68A-P-A1	___ At flow device FSL-68A-007, jumper wire P1A1-12 to P1A1-X1	KK 12.17.94	N/A
			Verify that this alarm is OFF	KK 12.17.94	KK 12.17.94
			___ Restore flow device FSL-68A-007 to as found condition	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
205 11	FAL68A021	FLW ALRM 68A-P-A2	___ At flow device FSL-68A-021, jumper wire P1A2-12 to P1A2-X1	KK 12.17.94	N/A
			Verify that this alarm is OFF	KK 12.17.94	KK 12.17.94
			___ Restore flow device FSL-68A-021 to as found condition	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94
205 18	FAL68A033	FLW ALRM 68A-P-B1	___ At flow device FSL-68A-033, jumper wire P1B1-12 to P1B1-X1	KK 12.17.94	N/A
			Verify that this alarm is OFF	KK 12.17.94	KK 12.17.94
			___ Restore flow device FSL-68A-033 to as found condition	KK 12.17.94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.17.94	KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
205 29	FAL68A007	FLW ALRM 68A-P-A1	— At flow device FSL-68A-007, jumper wire P1A1-12 to P1A1-X1	~~KK~~ 12-13-94	N/A
			Verify that this alarm is ~~ON~~ OFF	KK 12-13-94	KK 12-13-94
			— Restore flow device FSL-68A-007 to as found condition	KK 12-13-94	N/A
			— Verify that the above tag is normal at the LOI and OCS	KK 12-13-94	KK 12-13-94
205 11	FAL68A021	FLW ALRM 68A-P-A2	— At flow device FSL-68A-021, jumper wire P1A2-12 to P1A2-X1	KK 12-13-94	~~KK~~ N/A
			Verify that this alarm is ~~ON~~ OFF	KK 12-13-94	KK 12-13-94
			— Restore flow device FSL-68A-021 to as found condition	KK 12-13-94	N/A
			— Verify that the above tag is normal at the LOI and OCS	KK 12-13-94	KK 12-13-94
205 18	FAL68A033	FLW ALRM 68A-P-B1	— At flow device FSL-68A-033, jumper wire P1B1-12 to P1B1-X1	KK 12-13-94	KK 12-13-94
			Verify that this alarm is ~~ON~~ OFF	KK 12-13-94	KK 12-13-94
			— Restore flow device FSL-68A-033 to as found condition	KK 12-13-94	N/A
			— Verify that the above tag is normal at the LOI and OCS	KK 12-13-94	KK 12-13-94

SUPERSEDED BY ECN # L0446 24 12-17-94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
205 23	FAL68A041	FLW ALRM 68A-P-B2	___ At flow device FSL-68A-041, jumper wire P1B2-12 to P1B2-X1	KK 12.11.94	N/A
			Verify that this alarm is OFF	KK 12.11.44	KK 12.11.44
			___ Restore flow device FSL-68A-041 to as found condition	KK 12.11.44	N/A
			___ Verify that the above tag is normal at the LOI and OCS	KK 12.11.44	KK 12.11.44

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C20 (Pump Station #1)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
205 23	FAL68A041	FLW ALRM 68A-P-B2	___ At flow device FSL-68A-041, jumper wire P1B2-12 to P1B2-X1	~~KK~~ 12-13-94	N/A
			Verify that this alarm is ~~ON~~ OFF	~~KK~~ 12-13-94	~~KK~~ 12-13-94
			___ Restore flow device FSL-68A-041 to as found condition	~~KK~~ 12-13-94	N/A
			___ Verify that the above tag is normal at the LOI and OCS	~~KK~~ 12-13-94	~~KK~~ 12-13-94

SUPERSEDES BY ECN # 614624
12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C21 (T Plant)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
213 31	JA6821VAC	AC ALRM 225-WA	Turn OFF the LCU UPS power at PNLBD CKT 9 and verify this alarm	KK 12.17.94	KK 12.17.94
213 26	JA6821PS	PWR ALRM 225-WA	Turn OFF the LCU primary power at PNLBD CKT 11 and verify that this alarm is ON ___ Turn ON CKT 11.	KK 12.17.94 KK 12.17.94	KK 12.17.94 N/A
213 32	JA6821VDC	BAT ALRM 225-WA	___ Leave CKT 9 OFF for about an hour to let UPS battery run down ON AT 10:04 AM Verify that this alarm is ON AT 11:33 AM ___ Turn ON PNLBD CKT 9 ___ Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94 KK 12.17.94 KK 12.17.94 KK 12.17.94	N/A KK 12.17.94 N/A KK 12.17.94
213 1	TI68WA001	AIR TEMP 225-WA	Verify that the measured room air temperature is within ±17°F of the MCS value. _____ Measured = 72.7 °F MCS reading = 73 9 °F	KK 12.17.94	KK 12.17.94
213 2	AI-WA-001	EFF PH T PLANT	___ At LCU 55C21, connect the (+) and (-) terminals of point 2 of slot 'C' to the corresponding terminals of a loop calibrator and set the output to 12 ± 0.2 mA Verify that the pH reading is 7 pH ± 1 pH and record value 7.51 ___ Remove the loop calibrator	KK 12.17.94 KK 12.17.94 KK 12.17.94	KK 12.17.94 KK 12.17.94 KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C21 (T Plant)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
213 31	JA6821VAC	AC ALRM 225-WA	Turn OFF the LCU UPS power at PNLBD CKT 9	OOW	OOW
213 26	JA6821PS	PWR ALRM 225-WA	Verify that this alarm is ON		
213 32	JA6821VDC	BAT ALRM 225-WA	___ Turn OFF the LCU primary power at PNLBD CKT 11 and leave off for about an hour to let UPS battery run down 10:54 am Verify that this alarm is ON 11:33 am ___ Turn ON PNLBD CKT 9 ~~and 11~~ ___ Verify that the above three tags are normal at the LOI and OCS	OOW	OOW
213 1	TI68WA001	AIR TEMP 225-WA	Verify that the measured room air temperature is within ±17°F of the MCS value. OOW Measured = 73.7 °F MCS reading = 73.9 °F	OOW 73.94	OOW 73.93
213 2	AI-WA-001	EFF PH T PLANT	___ At LCU 55C21, connect the (+) and (-) terminals of point 2 of slot 'C' to the corresponding terminals of a loop calibrator and set the output to 12 ± 0.2 mA Verify that the pH reading is 7 pH ± 1 pH and record value 7.51 ___ Remove the loop calibrator	OOW 7.51	OOW 7.51

SUPERSEDED BY ECN # 614024 12.12.94

12-1-94 12-1-94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C21 (T Plant)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
213 3	RI-WA-001	RAD LVL T PLANT	___ At LCU 55C21, connect the (+) and (-) terminals of point 3 of slot 'C' to the corresponding terminals of a loop calibrator and set the output to 12 ± 0.2 mA Verify that the radiation reading is 50 CPM ± 10 CPM and record value 49.9 ___ Remove the loop calibrator	DCC 50.03	DCC 49.94
213 4	FI-WA-001	EFF FLOW T PLANT	___ At LCU 55C21, connect the (+) and (-) terminals of point 4 of slot 'C' to the corresponding terminals of a loop calibrator and set the output to 12 ± 0.2 mA Verify that the flow reading is 50 GPM ± 10 GPM and record value 50.0 ___ Remove the loop calibrator	DCC 50.09	DCC 50.04

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C22 (S Plant)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
223 31	JA6822VAC	AC ALRM 225-WB	Turn OFF the LCU UPS power at PNLBD CKT 9 and verify this alarm	KK 12.17.94	KK 12.17.94
223 26	JA6822PS	PWR ALRM 225-WB	Turn OFF the LCU primary power at PNLBD CKT 11 and verify that this alarm is ON ___ Turn ON CKT 11	KK 12.17.94	N/A
223 32	JA6822VDC	BAT ALRM 225-WB	___ Leave CKT 9 OFF for about an hour to let UPS battery run down ON AT 9:10 A.M. Verify that this alarm is ON AT 10:23 A.M. ___ Turn ON PNLBD CKT 9 ___ Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94 KK 12.17.94 KK 12.17.94 KK 12.17.94	N/A KK 12.17.94 N/A KK 12.17.94
223 1	TI68WB001	AIR TEMP 225-WB	Verify that the measured room air temperature is within ±17°F of the MCS value. _____ Measured = 69.5 °F MCS reading = 70.96 °F	KK 12.17.94	KK 12.17.94
223 2	FI-WB-001	EFF FLOW S PLANT	___ At LCU 55C22, connect the (+) and (-) terminals of point 2 of slot 'C' to the corresponding terminals of a loop calibrator and set the output to 12 ± 0.2 mA Verify that the flow reading is 50 GPM ± 10 GPM and record value 50.03 ___ Remove the loop calibrator	KK 12.17.94 KK 12.17.94 KK 12.17.94	KK 12.17.94 KK 12.17.94 KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C22 (S Plant)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
223 31	JA6822VAC	AC ALRM 225-WB	Turn OFF the LCU UPS power at PNLBD CKT 9	DOW	DOW
223 26	JA6822PS	PWR ALRM 225-WB	Verify that this alarm is ON		
223 32	JA6822VDC	BAT ALRM 225-WB	___ Turn OFF the LCU primary power at PNLBD CKT 11 and leave off for about an hour to let UPS battery run down Verify that this alarm is ON ___ Turn ON PNLBD CKT 9 ~~and 11~~ ___ Verify that the above three tags are normal at the LOI and OCS	DOW	DOW
223 1	TI68WB001	AIR TEMP 225-WB	Verify that the measured room air temperature is within ±17°F of the MCS value. DOW Measured = 69.5 °F MCS reading = 70.96 °F	DOW 70.96°	DOW 70.96°
223 2	FI-WB-001	EFF FLOW S PLANT	___ At LCU 55C22, connect the (+) and (-) terminals of point 2 of slot 'C' to the corresponding terminals of a loop calibrator and set the output to 12 ± 0.2 mA Verify that the flow reading is 50 GPM ± 10 GPM and record value 50.03 ___ Remove the loop calibrator	DOW 12-1-94	DOW 12-1-94

SUPERSEDED BY ECN # 614624 12.12.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C23 (Z Plant or PFP)

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
233 31	JA6823VAC	AC ALRM 225-WC	Turn OFF the LCU UPS power at PNLBD CKT 9 and verify this alarm	KK 12.17.94	KK 12.17.94
233 26	JA6823PS	PWR ALRM 225-WC	Turn OFF the LCU primary power at PNLBD CKT 11 and verify that this alarm is ON ___ Turn ON CKT 11	KK 12.17.94	N/A 12.17.94
233 32	JA6823VDC	BAT ALRM 225-WC	___ Leave CKT 9 OFF for about an hour to let UPS battery run down Verify that this alarm is ON ___ Turn ON PNLBD CKT 9 ___ Verify that the above three tags are normal at the LOI and OCS	KK 12.17.94 KK 12.17.94 KK 12.17.94 KK 12.17.94	N/A KK 12.17.94 N/A KK 12.17.94
233 1	TI68WC001	AIR TEMP 225-WC	Verify that the measured room air temperature is within ±17°F of the MCS value. _____ Measured = 66.7 °F MCS reading = 65.7 °F	KK 12.17.94	KK 12.17.94
233 2	AI-68A-201	EFF PH PFP 201	___ At the signal isolator enclosure (H-2-140396), connect the loop calibrator to terminal block TB-I Point 11(+) and Point 12(-) and set the output to 12 ± 0.2 mA Verify that the pH reading is 7 pH ± 1 pH and record value 7.55 ___ Remove the loop calibrator	KK 12.17.94 KK 12.17.94 KK 12.17.94	KK 12.17.94 KK 12.17.94 KK 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C23 (Z Plant or PFP)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
233 31	JA6823VAC	AC ALRM 225-WC	Turn OFF the LCU UPS power at PNLBD CKT 9	DCW	DCW
233 26	JA6823PS	PWR ALRM 225-WC	Verify that this alarm is ON	DCW	DCW
233 32	JA6823VDC	BAT ALRM 225-WC	___ Turn OFF the LCU primary power at PNLBD CKT 11 and leave off for about an hour to let UPS battery run down 9:33 am Verify that this alarm is ON ___ Turn ON PNLBD CKT 9 ~~and 11~~ ___ Verify that the above three tags are normal at the LOI and OCS	DCW	DCW
233 1	TI68WC001	AIR TEMP 225-WC	Verify that the measured room air temperature is within ±17°F of the MCS value. DCW Measured = 66.7 °F MCS reading = 65.4 °F	DCW 65.46	DCW 65.41
233 2	AI-68A-201	OFF PH PFP 201	___ At the signal isolator enclosure (H-2-140396), connect the loop calibrator to terminal block TB-I Point 11(+) and Point 12(-) and set the output to 12 ± 0.2 mA Verify that the pH reading is 7 pH ± 1 pH and record value 7.55 ___ Remove the loop calibrator	DCW	DCW

SUPERSEDES BY ECN #614612 12.13.94 KikKelly

12-1-94 12-1-94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C23 (Z Plant or PFP)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
233 3	AI-68A-202	CNDCTVTY PFP 202	___ At the signal isolator enclosure (H-2-140396), connect the loop calibrator to terminal block TB-I Point 6(+) and Point 7(-) and set the output to 12 ± 0.2 mA	KK 12.17.94	N/A
			Verify that the conductivity reading is 250 mS ± 50 mS and record value 252	KK 12.17.94	KK 12.17.94
			___ Remove the loop calibrator	KK 12.17.94	N/A
233 4	FI-68A-201	EFF FLOW PFP	___ At the signal isolator enclosure (H-2-140396), connect the loop calibrator to terminal block TB-I Point 1(+) and Point 2(-) and set the output to 12 ± 0.2 mA	KK 12.17.94	KK 12.17.94
			Verify that the flow reading is 348 GPM ± 70 GPM and record value 354.2	KK 12.17.94	KK 12.17.94
			___ Remove the loop calibrator	KK 12.17.94	N/A

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

LCU 55C23 (Z Plant or PFP)

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
233 3	AI-68A-202	CNDCTVTY PFP 202	___ At the signal isolator enclosure (H-2-140396), connect the loop calibrator to terminal block TB-I Point 6(+) and Point 7(-) and set the output to 12 ± 0.2 mA	12.14.94	N/A
			Verify that the conductivity reading is 250,000 uS ± 50,000 uS and record value SCALED TO MULTI SIEMENS 252	12.14.94	12.14.94
			___ Remove the loop calibrator	12.14.94	N/A
233 4	FI-68A-201	EFF FLOW PFP	___ At the signal isolator enclosure (H-2-140396), connect the loop calibrator to terminal block TB-I Point 1(+) and Point 2(-) and set the output to 12 ± 0.2 mA	DCC	DCC
			Verify that the flow reading is 348 GPM ± 70 GPM and record value 354.2	354.26	354.02
			___ Remove the loop calibrator	12-1-94	12-1-94

SUPERSEDED BY ECN # 164624 12.17.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

B Plant Tags

Signal Location	Tagname	Tag Descriptor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
N/A	FI-U1511	EFF FLOW B PLANT	Verify that flow reading is reasonable (±10%) compared to value obtained from personnel at the existing B Plant monitoring station and record value B Plant Value 115.7 GPM MCS Value 116.7 GPM	N/A 12.15.94	12.15.94 12.15.94
N/A	AI-NS2-1	EFF PH B PLANT	Verify that pH reading is reasonable (±10%) compared to value obtained from personnel at the existing B Plant monitoring station and record value B Plant Value 7.29 pH MCS Value 7.26 pH	N/A 12.15.94	12.15.94 12.15.94
N/A	RI-NS2-1	BETA RD B PLANT	Verify that beta radiation reading is reasonable (±10%) compared to value obtained from personnel at the existing B Plant monitoring station and record value B Plant Value 156 MCS Value 155	N/A 12.15.94	12.15.94 12.15.94
N/A	RI-NS2-2	GAMM RAD B PLANT	Verify that gamma radiation reading is reasonable (±10%) compared to value obtained from personnel at the existing B Plant monitoring station and record value B Plant Value 10.0 MCS Value 10.01	N/A 12.15.94	12.15.94 12.15.94

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VA

VERIFY AT OCC

B Plant Tags

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	V
N/A	FQI-U1511	TOTL GAL B PLANT	Verify that total flow reading is reasonable (±10%) compared to value obtained from personnel at the existing B Plant monitoring station and record value 264088 X ICC MULTIPLIER B Plant Value _____ GAL MCS Value 26,408,800 GAL	N/A KK 12.11.94	
N/A	RXA-NS2-1	RAD FAIL B PLANT	Verify that status is normal	N/A	

CAUTION: TESTING INVOLVES WORKING WITH LIVE CIRCUITS. VOLTAGE LEVEL IS 120 VAC

B Plant Tags

Signal Location	Tagname	Tag Descrip-tor	Verify tag value at LOI and OCS after taking the following action	Verify at LOI	Verify at OCS
N/A	FQI-U1511	TOTL GAL B PLANT	Verify that total flow reading is reasonable (±10%) compared to value obtained from personnel at the existing B Plant monitoring station and record value 264088 X 100 MULTIPLIERS B Plant Value _____ GAL MCS Value 26,408,800 GAL	N/A 12.15.94	12.15.94 12.15.94
N/A	XA-NS2-1	RAD FAIL B PLANT	Verify that status is normal	N/A	12.15.94

SUPERSEDED BY ECN # 614624
12.17.94

EXCEPTION NO. 1	Project No. W049H	ATP No. WHC-SD-W049H-ATP-003	Rev. 0
Recorded by KIRK KOHLER	Organization AI	Date Recorded 12/10/94	ATP Page No. 54

Step No. 9.18 THROUGH 9.23

Requirement: VERIFY LCU/INSTRUMENTATION WILL NOT AFFECT MANUAL PUMP OPERATION FROM MCC

Description of Problem:

IF LCU CABINET IS DE-ENERGIZED THERE IS A LOSS OF POWER (FROM LCU RELAY) TO THE CHECK VALVE OPEN SOLENOID. THEREFORE, PUMPS CAN BE RUN (IE... PUMP MOTOR ONLY) BUT WILL TRIP/TURN OFF WITH LOSS OF FLOW SIGNAL IF CHECK VALVE IS NOT ENERGIZED THROUGH LCU RELAY FOR SOLENOID COIL.

Objector 1 (Name/Organization)	Objector 2 (Name/Organization)
KIRK KOHLER / AI	DOUG ECCERBRATEN / CONSTRUCTION MGMT.

Planned Action:

Action Taken:

PUMPS COULD BE RUN TO SATISFY THE ATP IF THE CHECK VALVE OPEN SOLENOID IS LINED UP BY MANUALLY OPERATING 3 WAY VALVE TO ~~BYPASS~~ #1 LCU TO ~~PRESS. BRIEFLY~~ STROKE CHECK VALVE OPEN AND PROVIDE FLOW TO WATR. AS A PERMISSIVE FOR MCC.

RETEST EXECUTION AND ACCEPTANCE

Retest Installation Contractor	Date	Recorder	Date
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date
Field Engineering	Date	Test Director (Name/Organization)	Date
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date

APPROVAL AND ACCEPTANCE – OPERATING CONTRACTOR

☐ Retest Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*

* Explanation: See attached sheet.

Approver 1	Date	Approver 2	Date
GA Johnson	12-19-94	SL Caramihal	12-20-94
Approver 3	Date	Approver 4	
AK Yoakum	12/20/94		

[1] From: G A (Jerry) Johnston at ~WHC33 12/19/94 12:58PM (2764 bytes: 1 ln)
To: Kirk Kohler at ~KEH13
Subject: PROJ W049H , ATP-003 DISPOSITION TO EXCEPT #1
---------- Forwarded ----------
From: G A (Jerry) Johnston at ~WHC33 12/19/94 12:40PM (2500 bytes: 1 ln)
To: Aaron K (Keith) Yoakum at ~WHC163, Stephen L Carmichael at ~WHC245
cc: Mark C (Mark) Carrigan, Debra O Wallace at ~KEH7
Subject: PROJ W049H , ATP-003 DISPOSITION TO EXCEPT #1
---------- Message Contents ----------

Text item 1: Text_1

(Debbie - Please forward to Kirk Kohler)

Steve & Keith,

If you concur, I plan on dispositioning ATP-003 Exception #1 as "Accept-as-is" with the explanation below:

****

WHC-SD-W049H-ATP-003 EXCEPTION NO. 1 TO THE ATP

Prior to Step 9.18 on page 21 of the test procedure a paragraph states that Steps 9.18 through 9.23 are designed to test that the I&C field connections will not hinder manual pump operation at the motor control center. Although the pumps can be started and run for ten seconds as required in the ATP, this exception was written to provide a clarification of the manual pump operation in relation to the Micon Control System (MCS).

1) NORMAL MANUAL START WITH THE MICON LCU OPERATING CORRECTLY - In order to manually start a pump motor from the MCC under normal operating conditions, the Operator needs to only push the start button at the MCC. The corresponding pump will start and the MCS will sense a positive upstream pressure on the check valve and energize the open solenoid valve for that check valve. The check valve will open and provide adequate flow within 180 seconds so that the low flow interlock will not shut the pump off.

2) ABNORMAL MANUAL START - In order to manually start a pump motor with the MCS not operating, the Operator will push the start button at the MCC and then walk down to the pump level and turn on the manual valve at the base of the check valve open solenoid valve. This will accomplish the same function as the MCS energizing the solenoid valve.

The design and installation meet the intent of providing an independent means to manually start the pump. These steps should be further confirmed in a non recirculation mode during the Operational Test.

EXCEPTION NO. 2	Project No. W049H	ATP No. WHC-SD-W049H-ATP-003	Rev. 0

Recorded by	Organization	Date Recorded	ATP Page No.
KIRK KOHLER	AI	12/13/94	60

Step No. VARIOUS

Requirement: VERIFY PRESSURE INDICATIONS & SIGNALS THROUGH LCU CRT DISPLAY.

Description of Problem: THE PRESSURE INDICATING TRANSMITTERS PI68A---U/D PI68B---U/D (UP & DOWNSTREAM DESIGNATIONS) COAX SIGNAL WIRES WERE ROLLED FROM XMTR. AT LCU INPUT POINTS.

Objector 1 (Name/Organization)	Objector 2 (Name/Organization)
KIRK KOHLER / KEH AI	DOUG EBERBRATEN / KEH CONSTRUCTION MGMT.

Planned Action: ECN NEEDS TO BE ISSUED

Action Taken: TEST DIRECTOR HAD ELECTRICIANS CHANGE CABLES AT LCU INPUT POINTS TO COINCIDE WITH DESIGN DRAWING H-2-140379 R/0 SHT. 1 & 2 alc ECN 154 AND SO THAT THE CORRECT XMTR. SIGNAL WOULD CORRESPOND WITH THE APPROPRIATE LCU INPUT ADDRESS & SOFTWARE LOGIC.

RETEST EXECUTION AND ACCEPTANCE

Retest Installation Contractor	Date	Recorder	Date
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date
Field Engineering	Date	Test Director (Name/Organization)	Date
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date

APPROVAL AND ACCEPTANCE – OPERATING CONTRACTOR

☐ Retest Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*

* Explanation: CORRECTED PER ECN # W049H-177

Approver 1	Date	Approver 2	Date
MA Johnston	12-19-94	SL Carmichael	12-20-94
Approver 3	Date	Approver 4	
AK Goatcher	12-20-94		

[16] From: G A (Jerry) Johnston at ~WHC33 12/12/94 8:22AM (2113 bytes: 1 ln)
To: Edward L Vodopest at ~WHC361
cc: Donald I Buckles, Debra O Wallace at ~KEH7, Scott A Richey at ~WHC361,
Mark C (Mark) Carrigan, Stephen L Carmichael at ~WHC245
Subject: PROJ W049H - ECN NEEDED FOR ATP-003
---------- Message Contents ----------

Text item 1: Text_1

Ed,

The purpose of this message is to request that an ECN be generated to swap the equipment identifications for the pressure indicating transmitters across the check valves in the pump houses. The equipment in question is as follows:

PIT 68A003D	H-2-140378 SHT 1 (ECN W049H-154 PG#6)
PIT 68A003U	H-2-140378 SHT 1 (ECN W049H-154 PG#6)
PIT 68A008D	H-2-140378 SHT 1 (ECN W049H-154 PG#6)
PIT 68A008U	H-2-140378 SHT 1 (ECN W049H-154 PG#6)
PIT 68A020D	H-2-140378 SHT 2 (ECN W049H-154 PG#7)
PIT 68A020U	H-2-140378 SHT 2 (ECN W049H-154 PG#7)
PIT 68A025D	H-2-140378 SHT 2 (ECN W049H-154 PG#7)
PIT 68A025U	H-2-140378 SHT 2 (ECN W049H-154 PG#7)
PIT 68B003D	H-2-140379 SHT 1 (ECN W049H-154 PG#10)
PIT 68B003U	H-2-140379 SHT 1 (ECN W049H-154 PG#10)
PIT 68B021D	H-2-140379 SHT 2 (ECN W049H-154 PG#11)
PIT 68B021U	H-2-140379 SHT 2 (ECN W049H-154 PG#11)

In all cases the pressure instrument with the "U" suffix should be the UPSTREAM device (i.e. upstream from the check valve) and the instrument with the "D" suffix should be the DOWNSTREAM device.

There should be no changes needed to any of the electrical connection drawings since these signals will still go to the same signal locations in the LCU cabinet. These changes are needed to avoid what would be some very problematic logic changes in the software. The field wiring has been adjusted to reflect the equipment identifications as requested in this message.

Debbie Wallace - Please forward this message to Kirk Kohler.

EXCEPTION NO. 3	Project No. W049H	ATP No. WHC-SD-W049H-ATP-003	Rev. 0
Recorded by KIRK KOHLER	Organization AI	Date Recorded 12.15.94	ATP Page No. 61

Step No. PAGE 31 STEP 9.24 TAG NAME RIW20-2-1 | Requirement: VERIFY THAT RADIATION READING ARE ACCEPTABLE PER ATP

Description of Problem

DURING TEST IN ACCORDANCE WITH STEP 9.24 PAGE 31 TAG NAME RIW20-2-1 SIGNAL LOCATION *133 2 @ PUREX LCU 55C13, THE PLOT GRAPH BAR DISPLAY FOR 0 TO 100 % OF SCALE ON CRT DISPLAY WAS NOT INDICATING AS NECESSARY. THIS IS A RESULT OF ~~LIMITED SOFTWARE CAPABILITIES~~ PRESENT SOFTWARE PROGRAMMING * RIW20 IN LCU LOGIC TO CORRULATE LOGARITHMIC FUNCTION. ALSO, NUMERIC DISPLAY CANT READ ABOVE 10 K CPM OR >15 MASC.

Objector 1 (Name/Organization)	Objector 2 (Name/Organization)
KIRK KOHLER / KEH-AI	DOUG EGGERBRATEN / KEH CONSTRUCTION MGMT.

Planned Action

Action Taken

RETEST EXECUTION AND ACCEPTANCE

Retest Installation Contractor	Date	Recorder	Date
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date
Field Engineering	Date	Test Director (Name/Organization)	Date
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date

APPROVAL AND ACCEPTANCE – OPERATING CONTRACTOR

☐ Retest Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*

* Explanation: See attached sheet.

Approver 1	Date	Approver 2	Date
D.A. Johns	12-19-94	S L Carmichael	12-20-94
Approver 3	Date	Approver 4	
A K Yasaitis	12-20-94		

[2] From: G A (Jerry) Johnston at ~WHC33 12/19/94 1:26PM (2174 bytes: 1 ln)
To: Aaron K (Keith) Yoakum at ~WHC163, Stephen L Carmichael at ~WHC245
cc: Mark C (Mark) Carrigan, Debra O Wallace at ~KEH7, Kirk Kohler at ~KEH13
Subject: PROJ W049H, ATP-003 DISPOSITION TO EXCEPT #3
---------- Message Contents ----------

Text item 1: Text_1

Keith and Steve,

If you concur, I plan on dispositioning ATP-003 Exception #3 as "Accept-as-is" with the explanation below:

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WHC-SD-W049H-ATP-003 EXCEPTION NO. 3 TO THE ATP

Exception #3 addresses Signal Location 133 2 for tagname RIW20-2-1 on page 31 of the test procedure. This signal is the radiation reading from PUREX. The exception was written to address the fact that although the actual process variable reading is being correctly shown at both the OCS and the LOI, the plot bar that graphically represents this value is not shown. The problem appears to be that this signal has had to be ranged on a logarithmic scale to match the existing input from PUREX. ~~The current strategy is to have the plot bar reflect the linear 4-20ma range with the relationship shown below:~~ SLC 12-20-94 AKY

ma INPUT	% SCALE	VALUE CPM
4.0ma	0%	10 CPM
7.2ma	20%	100 CPM
10.4ma	40%	1000 CPM
13.6ma	60%	10000 CPM
16.8ma	80%	100000 CPM
20.0ma	100%	1000000 CPM

This would be in line with how the chart recorder is currently represented in the PUREX Control Room.

Micon is currently researching this problem to determine how and if the plot bar can be displayed. No further testing for the ATP will be required. The resolution to this problem will be verified with the Operational Test Procedure.