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ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 192518

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	3a. USQ Required?	4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	A.F. Crane, LEF Proc. Eng., S6-71, 372-3152	[] Yes [X] No	02/02/95
	5. Project Title/No./Work Order No.	6. Bldg./Sys./Fac. No.	7. Approval Designator
	LEF 200 Area TEDF	200 Area TEDF	NA
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.)	9. Related ECN No(s).	10. Related PO No.
	WHC-SD-LEF-TS-001, Rev 0	NA	NA

11a. Modification Work	11b. Work Package No.	11c. Modification Work Complete	11d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	NA	NA Cog. Engineer Signature & Date	NA Cog. Engineer Signature & Date

12. Description of Change

Reference to WHC-SD-LEF-OTP-001, Rev 0 has been changed to OSP-68-011 to reflect the correct document number identification for the 200 Area TEDF Operational Test Procedure.

13a. Justification (mark one)

Criteria Change	[]	Design Improvement	[]	Environmental	[]	Facility Deactivation	[]
As-Found	[X]	Facilitate Const	[]	Const. Error/Omission	[]	Design Error/Omission	[]

13b. Justification Details

Correction to reflect proper numerical documentation reference.

14. Distribution (include name, MSIN, and no. of copies)

Attached

RELEASE STAMP

OFFICIAL RELEASE BY WHC

DATE FEB 03 1995

STA 4

A-7900-013-2 (11/94) GEF095

Original Pg. DESTOYED "USE AS Orig" KZ 2/2/05

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1)
No ~~705207~~ 192518

15. Design Verification Required	16. Cost Impact		17. Schedule Impact (days)
	ENGINEERING	CONSTRUCTION	
☐ Yes	Additional ☐ $ ____	Additional ☐ $ ____	Improvement ☐ ____
☑ No	Savings ☐ $ ____	Savings ☐ $ ____	Delay ☐ ____

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	☐	Seismic/Stress Analysis	☐	Tank Calibration Manual	☐
Functional Design Criteria	☐	Stress/Design Report	☐	Health Physics Procedure	☐
Operating Specification	☐	Interface Control Drawing	☐	Spares Multiple Unit Listing	☐
Criticality Specification	☐	Calibration Procedure	☐	Test Procedures/Specification	☐
Conceptual Design Report	☐	Installation Procedure	☐	Component Index	☐
Equipment Spec.	☐	Maintenance Procedure	☐	ASME Coded Item	☐
Const. Spec.	☐	Engineering Procedure	☐	Human Factor Consideration	☐
Procurement Spec.	☐	Operating Instruction	☐	Computer Software	☐
Vendor Information	☐	Operating Procedure	☐	Electric Circuit Schedule	☐
OM Manual	☐	Operational Safety Requirement	☐	ICRS Procedure	☐
FSAR/SAR	☐	IEFD Drawing	☐	Process Control Manual/Plan	☐
Safety Equipment List	☐	Cell Arrangement Drawing	☐	Process Flow Chart	☐
Radiation Work Permit	☐	Essential Material Specification	☐	Purchase Requisition	☐
Environmental Impact Statement	☐	Fac. Proc. Samp. Schedule	☐	Tickler File	☐
Environmental Report	☐	Inspection Plan	☐	____	☐
Environmental Permit	☐	Inventory Adjustment Request	☐	____	☐

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision

20. Approvals

	Signature	Date		Signature	Date
OPERATIONS AND ENGINEERING			ARCHITECT-ENGINEER		
Cog. Eng.	AE Crane	02-03-95	PE		
Cog. Mgr.	AE Crane for D.J. Sullivan per telecon	02-03-95	QA		
QA			Safety		
Safety			Design		
Environ.			Environ.		
Other			Other		
			DEPARTMENT OF ENERGY		
			Signature or a Control Number that tracks the Approval Signature		
			ADDITIONAL		

A-7900-013R (06/94)

RELEASE AUTHORIZATION

Document Number:	WHC-SD-LEF-TS-001, REV 1
Document Title:	200 Area Treated Effluent Disposal Facility Operational Test Specification
Release Date:	2/3/95

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 — February 3, 1995

Kara M. Broz

JKF 2/3/95

SUPPORTING DOCUMENT

1. Total Pages 25 27

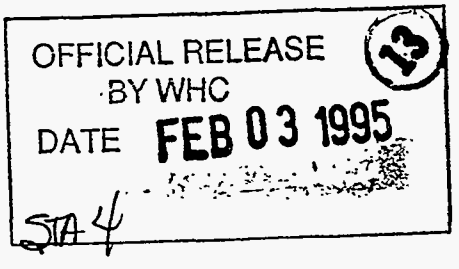
2. Title	3. Number	4. Rev No.
200 Area Treated Effluent Disposal Facility Operational Test Specification	WHC-SD-LEF-TS-001	1

5. Key Words	6. Author
ATP, OTP, Test Specification, 200 Area TEDF	Name: A.F. Crane Signature Organization/Charge Code 86230/A2107

7. Abstract

This document identifies the test specification and test requirements for the 200 Area Treated Effluent Disposal Facility (200 Area TEDF) operational testing activities. These operational testing activities, when completed, demonstrate the functional, operational and design requirements of the 200 Area TEDF have been met.

8. RELEASE STAMP



RECORD OF REVISION	(1) Document Number WHC-SD-LEF-TS-001	Page 1

(2) Title
200 AREA TREATED EFFLUENT DISPOSAL FACILITY OPERATIONAL TEST SPECIFICATION

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
	(7)		
1 RS	Reference to WHC-SD-LEF-OTP-001, Rev 0 was changed to OSP-68-011 ECN-	A.F. Crane	N.J. Sullivan 4/3/95
0	EDT-611037 1/12/95		

A-7320-005 (08/91) WEF168

200 AREA TREATED EFFLUENT DISPOSAL FACILITY OPERATIONAL TEST SPECIFICATION

1.0 PURPOSE

This document shall identify the test specification and test requirements for the 200 Area Treated Effluent Disposal Facility (200 Area TEDF) operational testing activities. This test specification identifies the operational testing which demonstrates functional, operational and design requirements of the 200 Area TEDF have been met.

2.0 APPLICABLE DOCUMENTS

The following documents, of the exact issue shown, form a part of the Basis of Design to the extent specified in the applicable sections of this document. In the event of conflict between documents referenced herein and the requirements of this specification, the requirements of this specification shall take precedence.

WHC-SD-W049H-FDC-001, Rev 1 Functional Design Criteria for the 200 Area Treated Effluent Disposal Facility, Project W-049H

WHC-SD-W049H-FDC-001, Rev 1A Functional Design Criteria for the 200 Area Treated Effluent Disposal Facility, Project W-049H

WHC-SD-W049H-FDC-001, Rev 1B Functional Design Criteria for the 200 Area Treated Effluent Disposal Facility, Project W-049H

W-049H-C1, As-Built Rev 1 Construction Specification For Divisions 2 Through 16 Piping And Pump System Collection System 200 Area Treated Effluent Disposal Facility

W-049H-C2, As-Built Rev 1 Construction Specification For Construction Specification For Instrumentation And Telecommunication System For Disposal System Package 2

W-049H-C3, As-Built Rev 1 Construction Specification For Disposal System: Package 1 200 Area Treated Effluent Disposal Facility

3.0 TECHNICAL REQUIREMENTS

The technical requirements for operational testing of the 200 Area TEDF are defined by the test requirements presented in Appendix A. These test requirements demonstrate the following:

Pump station #1 and associated support equipment operate both automatically and manually.

Pump station #2 and associated support equipment operate both automatically and manually.

Water is transported through the collection and transfer lines to the disposal ponds with no detectable leakage.

The disposal ponds accept flow from the transfer lines with all support equipment operating as designed.

The control systems operate and status the 200 Area TEDF including monitoring of appropriate generator discharge parameters.

Testing will utilize Acceptance Test Procedures and Operational Test Procedures to demonstrate operability of the 200 Area TEDF. Validation of Plant Operating Procedures, Component Index Data Sheet information and Calibration Procedures will be included during these test activities.

4.0 INITIAL FACILITY CONDITIONS

Testing will be conducted as the individual subsystems become operational to demonstrate the operability of the 200 Area TEDF. At the completion of testing, the 200 Area TEDF will be fully operational in both manual and automatic modes, and ready to accept waste from individual generating facilities after completion of final tie-in activities.

5.0 TEST REQUIREMENTS

Completion of the test requirements presented in Appendix A will demonstrate that the technical requirements identified in Section 3.0 have been met. Completion of each test requirement will be verified by the LEF Process Engineering Cognizant Engineer or his representative.

Table A-1 200 Area TEDF Pump Station #1

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
1	Normal power is available.	Power supply is available at the MCC	WHC-SD-W049H-ATP-002, Rev 0	
2	Hoist (68A-HOIST-01) & lifting cables have been load tested.	Load test cerifications are stamped on hoist & lifting cables	WHC-SD-W049H-ATP-002, Rev 0	
3	Flow switches (FSL-68A-007, -021, -033, -68A-041) functionally tested to verify activation of internal micro switch & wiring to LCU & MCC.	As measured at the MCC & LCU: - Open contact resistance >5 megohms - Vane activated closed contact resistance approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
4	Level switches (LSL/LE-68A-005, -031) functionally tested to verify operation.	As measured at the LCU: - Open contact resistance >5 megohms - Closed contact resistance (grounded liquid level electrode) approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
5	Pressure indicating transmitters (PIT-68A-003U, -003D, -008U, -008D, -020U, -020D, -025U, -025D) functionally tested to verify operation	As measured at the PIT & LCU: - at 4 mA the reading is $\leq$ 0 psi - at 20 mA the PIT reading is 100 psi - verify pressure readings at LCU display	WHC-SD-W049H-ATP-002, Rev 0 OSP-68-011	
6	Flow meter (FE/FT-68A-052) functionally tested to verify generation of a meter signal & wiring to LCU	As measured at the flow sensor - voltage across TP 12 & TP 8 is between -2.0 & -3.0 V dc - voltage across TP 13 & TP 8 is between -2.0 & -3.0 V dc	WHC-SD-W049H-ATP-002, Rev 0	
7	Temperature transmitters (TE/TT-68A-056, -68WA-001) functionally tested to show change in output signal & verify wiring to LCU	As measured at the LCU - current in mA rises with increasing temperature - current in mA decreases with decreasing temperature	WHC-SD-W049H-ATP-002, Rev 0	
8	Position switches (ZSH/ZSL-68A-004N, -004C, -009N, -009C, 021N, -021C, -026N, -026C) functionally tested to verify operation of position indicating limit switches	As measured at the valve & LCU - Closed contact measures 0 ohms resistance - Open contact measures >5 megohms resistance	WHC-SD-W049H-ATP-002, Rev 0	

Table A-1 200 Area TEDF Pump Station #1

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
9	Electric check valve (ZSH-68A-003N, -008N, -020N, -025N) functionally tested to verify operation of solenoid type valves & roller cam type micro switch and wiring to LCU	As measured at the microswitch - Open contact resistance >5 megohms - Closed contact resistance approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
10	Solenoids (PV-68A-014, -015, -016, -017, -018, -019, -028, -029) are functional	As measured at the solenoid - magnetic compass deflection noted when power is applied to the solenoid & returns to normal position when power is turned off	WHC-SD-W049H-ATP-002, Rev 0	
11	Electric check valves (68A-ECV-003/-008/-020/-025)	As measured at the valve - demonstrate automatic operation - demonstrate manual operation using the normal solenoid pilot valves - demonstrate automatic closure on loss of power	WHC-SD-W049H-ATP-002, Rev 0	
12	Automatic transfer switch functionally tested for automatic transfer of power feed to backup upon failure of primary power feed	As measured at the automatic transfer switch - power feed is transfered to standby power feed within 5 minutes of primary power supply failure	WHC-SD-W049H-ATP-002, Rev 0	
13	Influent valves (MV-68A-001, -002), position indicators (ZSH-68A-001N, -001C, -002N, -002C) & fail safe units are functionally tested	As measured at the valve - valve opens & closes manually - two lower limit switches are set to indicate closure - two upper limit switches are set to indicate open - valve opens upon power failure	WHC-SD-W049H-ATP-002, Rev 0	

Table A-1 200 Area TEDF Pump Station #1

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
13	Influent valves (MV-68A-001, -002), position indicators (ZSH-68A-001N, -001C, -002N, -002C) & fail safe units are functionally tested	As measured at the valve - valve opens & closes manually - two lower limit switches are set to indicate closure - two upper limit switches are set to indicate open - valve opens upon power failure	WHC-SD-W049H-ATP-002, Rev 0	
14	Pumps (68A-P-A1, -A2, -B1, -B2) are functionally tested	As measured at the pump - pump oil level is correct - pump rotation & operation is correct - pump installation is correct	WHC-SD-W049H-ATP-002, Rev 0	
15	Sluice gate (68A-SLG-01) does not leak	As measured in the wet well Side A & B	WHC-SD-W049H-ATP-002, Rev 0	
16	Flow switch, pump current & line pressure test	As measured at - the MCC: pump motor current - the current transmitter: current output - the pressure transmitter: pressure - the surge relief valve: relieves at >90 psi	WHC-SD-W049H-ATP-002, Rev 0	
17	Level element (LE/LT-68A-004, -030) verification	As measured at the level element - set 0 level at 4 mA - set full level at 20 mA	WHC-SD-W049H-ATP-002, Rev 0	
18	Verify hydraulic design of pumping systems	As measured at the pressure transmitters - system head	WHC-SD-W049H-ATP-002, Rev 0	
19	Verify pumps (68A-P-A1, -A2, -B1, -B2) can be started & stopped at the MCC	As measured at the MCC	WHC-SD-W049H-ATP-003, Rev 0	

Table A-1 200 Area TEDF Pump Station #1

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
1	Normal power is available.	Power supply is available at the MCC	WHC-SD-W049H-ATP-002, Rev 0	
2	Hoist (68A-HOIST-01) & lifting cables have been load tested.	Load test cerifications are stamped on hoist & lifting cables	WHC-SD-W049H-ATP-002, Rev 0	
3	Flow switches (FSL-68A-007, -021, -033, -68A-041) functionally tested to verify activation of internal micro switch & wiring to LCU & MCC.	As measured at the MCC & LCU: - Open contact resistance >5 megohms - Vane activated closed contact resistance approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
4	Level switches (LSL/LE-68A-005, -031) functionally tested to verify operation.	As measured at the LCU: - Open contact resistance >5 megohms - Closed contact resistance (grounded liquid level electrode) approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
5	Pressure indicating transmitters (PIT-68A-003U, -003D, -008U, -008D, -020U, -020D, -025U, -025D) functionally tested to verify operation	As measured at the PIT & LCU: - at 4 mA the reading is $\leq$ 0 psi - at 20 mA the PIT reading is 100 psi - verify pressure readings at LCU display	WHC-SD-W049H-ATP-002, Rev 0 OSP-68-011	
6	Flow meter (FE/FT-68A-052) functionally tested to verify generation of a meter signal & wiring to LCU	As measured at the flow sensor - voltage across TP 12 & TP 8 is between -2.0 & -3.0 V dc - voltage across TP 13 & TP 8 is between -2.0 & -3.0 V dc	WHC-SD-W049H-ATP-002, Rev 0	
7	Temperature transmitters (TE/TT-68A-056, -68WA-001) functionally tested to show change in output signal & verify wiring to LCU	As measured at the LCU - current in mA rises with increasing temperature - current in mA decreases with decreasing temperature	WHC-SD-W049H-ATP-002, Rev 0	
8	Position switches (ZSH/ZSL-68A-004N, -004C, -009N, -009C, 021N, -021C, -026N, -026C) functionally tested to verify operation of position indicating limit switches	As measured at the valve & LCU - Closed contact measures 0 ohms resistance - Open contact measures >5 megohms resistance	WHC-SD-W049H-ATP-002, Rev 0	

Table A-1 200 Area TEDF Pump Station #1

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
25	Pumps 68A-P-A1/B1/A2/B2 operate automatically at set points	As measured from floor of wet well: - -A1/-B1 start at the level setpoint of 54 inches. - -A1/-B1 shut down at the low level setpoint of 36 inches. - -A1/-B1 shut down at the high level setpoint of 60 inches. - -A2/-B2 start at the level setpoint of 60 inches. - -A2/B2 shut down at the low level setpoint of 36 inches. - the high level alarm is activated at the setpoint of 72 inches.	OSP-68-011	
26	Pumps 68A-P-A1/A2/B1/B2 can be operated manually and automatically for both single & dual side operation according to documented logic	As measured by - Manual operation from the MCC, LCU-55C-20 and MCS operator control stations - Automatic operation from LCU-55C-20 and MCS operator control stations - pump shuts down when STOP switch is activated from LCU-55C-20 and MCS operator control stations.	OSP-68-011	
27	Pumps 68A-P-A1/B1/A2/B2 meet design minimum flow specifications	As measured at LCU-55C-20 or MCS operator control stations - -A1/-B1 at 225 gpm - -A2/-B2 at 490 gpm	WHC-SD-W049H-ATP-002, Rev 0	
28	Pumps 68A-P-A1/-A2/-B1/-B2 operational status and current demand (amperage) is monitored & displayed	As measured at LCU-55C-20 and MCS operator control stations	WHC-SD-W049H-ATP-002, Rev 0	

Table A-1 200 Area TEDF Pump Station #1				
#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
29	Fans (68A-FAN-01/-02/-03) & damper (68A-DPR-1) are operational	As measured at the fan - fan rotation & operation is correct - damper opens on fan start & damper shuts on fan stop	WHC-SD-W049H-ATP-002, Rev 0	
30	Air conditioner (68A-FCU-001) & electric heater (68A-EUH-001) are operable.	Building temperature is maintained at 50-85 degrees F	OSP-68-011	

Table A-2 Pump Station 1 Valve Operation Verification

Equipment Number	Functional Description/Criteria	Completion per Procedure	Verification Date/Initials
MV-68A-001 MV-68A-002	Diversion Valves: - manual operation at valve - manual operation at LCU-55C-020 & operator control stations - fail open - position indication at LCU-55C-020 & MCS operator control stations	WHC-SD-W049H -ATP-002, Rev 0 WHC-SD-W049H -ATP-003, Rev 0 OSP-68-011	
68A-V-04 68A-V-05 68A-V-09 68A-V-10 68A-V-11 68A-V-13 68A-V-15 68A-V-16 68A-V-17 68A-V-18 68A-V-19 68A-V-21 68A-V-22 68A-V-26 68A-V-27	Manual Valves: - manual operation at valve - position indication at LCU-55C-20 & MCS operator control stations for: 68A-V-04 68A-V-09 68A-V-21 68A-V-26	WHC-SD-W049H -ATP-002, Rev 0 WHC-SD-W049H -ATP-003, Rev 0 OSP-68-011	
68A-SLG-51	Sluice Gate: - manual operation at valve - manual operation at LCU-55C-020 & MCS operator control stations - fail as is - position indication at LCU-55C-020 & MCS operator control stations	WHC-SD-W049H -ATP-003, Rev 0 OSP-68-011	

Table A-3 200 Area TEDF Pump Station #2

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
1	Normal power is available.	Power supply is available at the MCC	WHC-SD-W049H-ATP-002, Rev 0	
2	Hoist (68B-HOIST-01) & lifting cables have been load tested.	Load test cerifications are stamped on hoist & lifting cables	WHC-SD-W049H-ATP-002, Rev 0	
3	Flow switches (FSL-68B-007, -025 functionally tested to verify activation of internal micro switch & wiring to LCU & MCC.	As measured at the MCC & LCU: - Open contact resistance >5 megohms - Vane activated closed contact resistance approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
4	Level switches (LSL/LE-68B-005, -023) functionally tested to verify operation.	As measured at the LCU: - Open contact resistance >5 megohms - Closed contact resistance (grounded liquid level electrode) approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
5	Pressure indicating transmitters (PIT-68B-003U, -003D, -021U, -021D) functionally tested to verify operation	As measured at the PIT & LCU: - at 4 mA the U PIT's reading is $\leq$ 0 psi - at 20 mA the PIT reading is 100 psi - verify there is a pressure reading at the LCU display	WHC-SD-W049H-ATP-002, Rev 0 OSP-68-011	
6	Flow meter (FE/FT-68B-042) functionally tested to verify generation of a meter signal & wiring to LCU	As measured at the flow sensor - voltage across TP 12 & TP 8 is between -2.0 & -3.0 V dc - voltage across TP 13 & TP 8 is between -2.0 & -3.0 V dc	WHC-SD-W049H-ATP-002, Rev 0	
7	Temperature transmitters (TE/TT-68B-046, -68WB-001) functionally tested to show change in output signal & verify wiring to LCU	As measured at the LCU - current in mA rises with increasing temperature - current in mA decreases with decreasing temperature	WHC-SD-W049H-ATP-002, Rev 0	

Table A-3 200 Area TEDF Pump Station #2				
#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
8	Position switches (ZSH/ZSL-68B-004N, -004C, -022N, -022C, -041N, -041C) functionally tested to verify operation of position indicating limit switches	As measured at the valve & LCU - Closed contact measures 0 ohms resistance - Open contact measures >5 megohms resistance	WHC-SD-W049H-ATP-002, Rev 0	
9	Electric check valve (68B-ECV-003, -021) functionally tested to verify operation of solenoid type valves & roller cam type micro switch and wiring to LCU	As measured at the microswitch - Open contact resistance >5 megohms - Closed contact resistance approximately 0 ohms	WHC-SD-W049H-ATP-002, Rev 0	
10	Electric check valves (68B-ECV-003/ -021)	As measured at the valve - demonstrate automatic operation - demonstrate manual operation using the normal solenoid pilot valves - demonstrate automatic closure on loss of power	WHC-SD-W049H-ATP-002, Rev 0	
11	Solenoids (PV-68B-014, -015, -031, -032) are functional	As measured at the solenoid - magnetic compass deflection noted when power is applied to the solenoid & returns to normal position when power is turned off	WHC-SD-W049H-ATP-002, Rev 0	
12	Automatic transfer switch functionally tested for automatic transfer of power feed to generator upon failure of primary power feed	As measured at the automatic transfer switch - power feed is transfered to standby power feed within 5 minutes of primary power supply failure	WHC-SD-W049H-ATP-002, Rev 0	

Table A-3 200 Area TEDF Pump Station #2

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
13	Influent valves (MV-68B-001, -002), position indicators (ZSH-68B-001N, -001C, -002N, -002C) & fail safe units are functionally tested	As measured at the valve - valve opens & closes manually - two lower limit switches are set to indicate closure - two upper limit switches are set to indicate open - valve opens upon power failure	WHC-SD-W049H-ATP-002, Rev 0	
14	Pumps (68B-P-A1, -B1) are functionally tested	As measured at the pump & fan - pump oil level is correct - pump rotation & operation is correct - pump installation is correct	WHC-SD-W049H-ATP-002, Rev 0	
15	Sluice gate (68B-SLG-41) does not leak	As measured in the wet well Side A & B	WHC-SD-W049H-ATP-002, Rev 0	
16	Flow switch, pump current & line pressure test	As measured at - the MCC: pump motor current - the current transmitter: current output - the pressure transmitter: pressure	WHC-SD-W049H-ATP-002, Rev 0	
17	Level element (LE/LT-68B-004, -022) verification	As measured at the level element - set 0 level at 4 mA - set full level at 20 mA	WHC-SD-W049H-ATP-002, Rev 0	
18	Verify hydraulic design of pumping systems	As measured at the pressure transmitters - system head	WHC-SD-W049H-ATP-002, Rev 0	
19	Verify pumps (68B-P-A1, -B1) can be started & stopped at the MCC	As measured at the MCC	WHC-SD-W049H-ATP-003, Rev 0	
20	Verify all I & C communication between the Control Room and Pump Station 2	As measured at the MCS Operator Control Stations and Pump Station 2 (LCU 55C10)	WHC-SD-W049H-ATP-003, Rev 0	

Table A-3 200 Area TEDF Pump Station #2				
#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
21	System 68B equipment has been calibrated	By individual calibration procedures	OSP-68-011	
22	All switches and alarms have been verified to actuate at given set values/alarm points.	As measured at LCU 55C10 & MCS	WHC-SD-W049H-ATP-003, Rev 0 OSP-68-011	
23	Verify all valves listed in Table A-4 can be stroked fully open and fully closed with manual & electrical actuators	As measured at the valve	WHC-SD-W049H-ATP-002, Rev 0 WHC-SD-W049H-ATP-003, Rev 0 OSP-68-011	
24	System 68B equipment returns to a fail safe position on failure of the the system, including a loss of utilities.	As measured at the equipment	WHC-SD-W049H-ATP-002, Rev 0 OSP-68-011	
25	Pumps 68B-P-A1/B1 operate automatically at set points	As measured from floor of wet well: - -A1/-B1 start at the level setpoint of 48 inches. - -A1/-B1 shut down at the low level setpoint of 36 inches. - the high level alarm is activated at the setpoint of 54 inches.	OSP-68-011	

Table A-3 200 Area TEDF Pump Station #2

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
26	Pumps 68B-P-A1/B1 can be operated manually & automatically for both single & dual side operation according to documented logic	As measured by - Manual operation from the MCC & LCU-55C-10 - Automatic operation from LCU-55C-20 and MCS operator control stations - pump shuts down when STOP switch is activated from LCU-55C-10 & MCS operator control station	OSP-68-011	
27	Pumps 68B-P-A1/B1 meet design minimum flow specifications	As measured at LCU-55C-10 or MCS operator control stations - -A1/-B1 at 340 gpm	WHC-SD-W049H-ATP-002, Rev 0	
28	Pumps 68B-P-A1/B1 operational status and current demand (amperage) is monitored & displayed	As measured at LCU-55C-10 and MCS operator control stations	WHC-SD-W049H-ATP-002, Rev 0	
29	Fans (68B-FAN-04/-05/-06) & damper (68B-DPR-1) are operational	As measured at the fan - fan rotation & operation is correct - damper opens on fan start & damper shuts on fan stop	WHC-SD-W049H-ATP-002, Rev 0	
30	Air conditioner (68B-FCU-001) & electric heater (68B-EUH-001) are operable.	Building temperature is maintained at 50-85 degrees F	OSP-68-011	

Table A-4 Pump Station 2 Valve Operation Verification

Equipment Number	Functional Description	Completion per Procedure	Verification Date/Initials
MV-68B-001 MV-68B-002	Diversion Valves: - manual operation at valve - manual operation at LCU-55C-010 & MCS operator control stations - fail open - position indication at LCU-55C-010 & MCS operator control stations	WHC-SD-W049H -ATP-002, Rev 0 WHC-SD-W049H -ATP-003, Rev 0 OSP-68-011	
68B-V-04 68B-V-05 68B-V-06 68B-V-07 68B-V-08 68B-V-09 68B-V-10 68B-V-20 68B-V-22 68B-V-23	Manual Valves: - manual operation at valve - position indication at LCU-55C-10 & MCS operator control stations for: 68B-V-04 68B-V-22	WHC-SD-W049H -ATP-002, Rev 0 WHC-SD-W049H -ATP-003, Rev 0 OSP-68-011	
68B-SLG-41	Sluice Gate: - manual operation at valve - manual operation at LCU-55C-010 & MCS operator control stations - fail as is - position indication at LCU-55C-010 & MCS operator control stations	WHC-SD-W049H -ATP-002, Rev 0 WHC-SD-W049H -ATP-003, Rev 0 OSP-68-011	

Table A-5 200 Area TEDF Collection System

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
1	H Line flowmeter (FE/FT-68B-100) & multiplexers (MUX-1A, MUX-1B) functions verified	As measured at the flowmeter & LCU's: - 4 mA at 0 gpm - 12 mA at 385 gpm - 20 mA at 770 gpm	WHC-SD-W049H-ATP-002, Rev 0	
2	Verify integrity of transfer & facility collection lines	As measured by hydrostatic testing & visual inspection	W-049H-C1 Collection System Construction Spec. WHC-SD-W049H-ATP-002, Rev 0	
3	Verify all valves listed in Table A-6 can be stroked fully open and fully closed with manual actuators	As measured at the valve	WHC-SD-W049H-ATP-002, Rev 0	

Table A-6 Collection & Transfer Valve Operation Verification			
Equipment Number	Functional Description	Completion per Procedure	Verification Date/Initials
68T-BV-01 68T-BV-02 68T-BV-03 68T-BV-04 68T-BV-05 68T-BV-06 68T-BV-07 68T-BV-08 68T-BV-09 68T-BV-10 68T-BV-11 68T-BV-12 68T-BV-13 68T-BV-15 68T-BV-16 68T-BV-18 68T-BV-20 68T-BV-21 68T-BV-22 68T-BV-23 68T-BV-24 68T-BV-25 68T-BV-26 68T-BV-27 68T-BV-28 68T-BV-30 68T-BV-31 68T-BV-32 68T-BV-33 68T-BV-34 68T-BV-35 68T-BV-36 68T-BV-37 68T-BV-38 68T-BV-39 68T-BV-40 68T-BV-41 68T-BV-42	Transfer Line Sectional Isolation Valves: - manual operation at valve	WHC-SD-W049H -ATP-002, Rev 0	
68S-BV-02 68S-BV-03 68H-BV-04	Facility Collection Line Sectional Isolation Valves: - manual operation at valve	WHC-SD-W049H -ATP-002, Rev 0	

Table A-6 Collection & Transfer Valve Operation Verification			
Equipment Number	Functional Description	Completion per Procedure	Verification Date/Initials
68T-GV-01 68T-GV-02 68T-GV-03 68T-GV-04 68T-GV-05 68T-GV-06 68T-GV-07 68T-GV-08 68T-GV-09 68T-GV-10 68T-GV-11 68T-GV-12 68T-GV-13 68T-GV-15 68T-GV-16 68T-GV-18 68T-GV-20 68T-GV-21 68T-GV-22 68T-GV-23 68T-GV-24 68T-GV-25 68T-GV-26 68T-GV-27 68T-GV-28 68T-GV-30 68T-GV-31 68T-GV-32 68T-GV-33 68T-GV-34 68T-GV-35 68T-GV-36 68T-GV-37 68T-GV-38 68T-GV-39 68T-GV-40 68T-GV-41 68T-GV-43	Transfer Line Air/Vacuum Relief Isolation Valves: - manual operation at valve	WHC-SD-W049H -ATP-002, Rev 0	

Table A-6 Collection & Transfer Valve Operation Verification			
Equipment Number	Functional Description	Completion per Procedure	Verification Date/Initials
68S-GV-02 68S-GV-03 68E-GV-02 68E-GV-03 68F-GV-02 68F-GV-03 68H-GV-04 68H-GV-05 68H-GV-06 68H-GV-08 68H-GV-09	Facility Collection Line Air/Vacuum Relief Isolation Valves: - manual operation at valve	WHC-SD-W049H -ATP-002, Rev 0	

Table A-6 Collection & Transfer Valve Operation Verification			
Equipment Number	Functional Description	Completion per Procedure	Verification Date/Initials
68T-VBAR-01 68T-VBAR-02 68T-VBAR-03 68T-VBAR-04 68T-VBAR-05 68T-VBAR-06 68T-VBAR-07 68T-VBAR-08 68T-VBAR-09 68T-VBAR-10 68T-VBAR-11 68T-VBAR-12 68T-VBAR-13 68T-VBAR-15 68T-VBAR-16 68T-VBAR-18 68T-VBAR-20 68T-VBAR-21 68T-VBAR-22 68T-VBAR-23 68T-VBAR-24 68T-VBAR-25 68T-VBAR-26 68T-VBAR-27 68T-VBAR-29 68T-VBAR-30 68T-VBAR-31 68T-VBAR-32 68T-VBAR-33 68T-VBAR-34 68T-VBAR-35 68T-VBAR-36 68T-VBAR-37 68T-VBAR-38 68T-VBAR-39 68T-VBAR-40 68C-VBAR-41	Transfer Line Air/Vacuum Relief Valves: - no leakage at valve	WHC-SD-W049H -ATP-002, Rev 0	

Table A-6 Collection & Transfer Valve Operation Verification

Equipment Number	Functional Description	Completion per Procedure	Verification Date/Initials
68S-VBAR-02 68S-VBAR-03 68E-VBAR-02 68F-VBAR-02 68H-VBAR-04 68H-VBAR-05 68H-VBAR-06 68H-VBAR-08 68H-VBAR-09	Facility Collection Line Air/Vacuum Relief Valves: - no leakage at valve	WHC-SD-W049H -ATP-002, Rev 0	
68E-GV-03 68F-GV-03 68H-GV-09	Facility Collection Line Isolation Valves: - manually operated at valve	WHC-SD-W049H -ATP-002, Rev 0	
68H-CV-08	Facility Collection Line Check Valves: - no operational checks required	NA	
68T-DV-14 68T-DV-17 68T-DV-19 68T-DV-29	Transfer Line Drain Valves: - manually operated at valve	WHC-SD-W049H -ATP-002, Rev 0	
68S-DV-03 68H-DV-07	Facility Collection Line Drain Valves: - manually operated at valve	WHC-SD-W049H -ATP-002, Rev 0	

Table A-7 200 Area TEDF Monitor & Control System				
#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
1	MCS receives, displays and sends all required 200 Area TEDF signals	At MCS - verification of design drawing logic diagrams - operation of TEDF - verification of alarms	OSP-68-011	

Table A-8 200 Area TEDF Disposal System

#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
1	Normal power is available.	Power supply is available at the MCC	WHC-SD-W049H-ATP-003, Rev 0	
2	Disposal line flowmeter (FE/FT-68C-003), fault detection (FXS-68C-003) & current isolator (IB-68C-003) functions verified	As measured at the flowmeter & current isolator - 4 mA at 0 gpm - 6 mA at 400 gpm - 12 mA at 1500 gpm - 20 mA at 3000 gpm	WHC-SD-W049H-ATP-001, Rev 0	
3	Temperature transmitters (TE/TT-68C-09) functionally tested to show change in output signal & verify wiring to LCU 55C16	As measured at LCU 55C16 - current in mA rises with increasing temperature - current in mA decreases with decreasing temperature	WHC-SD-W049H-ATP-001, Rev 0	
4	Influent valves (MV-68C-004, -005), position indicators (ZSH-68C-004N, -004C, -005N, -005C) are functionally tested	As measured at the valve & LCU - valve opens & closes manually - closed contact measures 0 ohms resistance - open contact measures infinite ohms - two lower limit switches are set to indicate closure - two upper limit switches are set to indicate open - both valves cannot be shut at the same time	WHC-SD-W049H-ATP-001, Rev 0 WHC-SD-W049H-ATP-003, Rev 0 OSP-68-011	
5	Level element (LE/LT-68C-007/-008) verification	As measured at the level element - set 0 level at 4 mA - set full level at 20 mA	WHC-SD-W049H-ATP-001, Rev 0 WHC-SD-W049H-ATP-003, Rev 0	
6	Samplers (68C-SMPL-1/-2) functionally tested	As measured at the sampler - programs entered - samples drawn	WHC-SD-W049H-ATP-001, Rev 0 WHC-SD-W049H-ATP-002, Rev 0	

Table A-8 200 Area TEDF Disposal System				
#	Test Requirement	Acceptance Criteria	Completion Reqd By (Document)	Verification Initials/Date
6	Samplers (68C-SMPL-1/-2) functionally tested	As measured at the sampler - programs entered - samples drawn	WHC-SD-W049H-ATP-001, Rev 0 WHC-SD-W049H-ATP-002, Rev 0	
7	Verify pressure relief valves (PSV-68C-001/-002) relieve excess pressure	As measured at the pressure relief valves - valve discharges at 18-22 psig - valve reseats	WHC-SD-W049H-ATP-001, Rev 0	
8	System 68C equipment has been calibrated	By individual calibration procedures	OSP-68-011	
9	All switches and alarms have been verified to actuate at given set values/alarm points.	As measured at LCU 55C16 & MCS	OSP-68-011	
10	Verify all valves in Table A-9 can be stroked fully open and fully closed with manual & electrical actuators	As measured at the valve	WHC-SD-W049H-ATP-002, Rev 0 WHC-SD-W049H-ATP-003, Rev 0 OSP-68-011	
11	System 68C equipment returns to a fail safe position on failure of the the system, including a loss of utilities.	As measured at the equipment	WHC-SD-W049H-ATP-003, Rev 0 WHC-SD-LEF-OTP-001, Rev 0	
12	Air conditioner (68C-FCU-001) & electric heater (68C-EUH-001) are operable.	Building temperature is maintained at 50-85 degrees F	OSP-68-011	

Table A-9 Disposal Valve Operation Verification

Equipment Number	Functional Description	Completion per Procedure	Verification Date/Initials
MV-68C-004 MV-68C-005	Motor operated valves: - manual operation at valve - manual operation at LCU-55C-016 & operator control stations - fail as is - position indication at LCU-55C-016 & operator control stations	WHC-SD-W049H -ATP-001, Rev 0 WHC-SD-W049H -ATP-003, Rev 0 OSP-68-011	
68C-V-01 68C-V-02 68C-V-03 68C-V-04	Manual Valves: - manually operated at valve	WHC-SD-W049H -ATP-001, Rev 0 OSP-68-011	
68C-SLG-06 68C-SLG-07 68C-SLG-08	Sluice Gate: - manual operation at valve	WHC-SD-W049H -ATP-001, Rev 0 OSP-68-011	