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1	RPP-5074	N/A	0	TEST REPORT FOR ACCEPTANCE	SQ	1	1	1
				TEST PROCEDURE FOR PUMPING				
				INSTRUMENTATION AND				
				CONTROL SKID "M"				

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1		Design Authority	W. F. ZUROFF	12/13/99	57-24						
1		Design Agent	B. R. JOHNS	12/13/99	57-24						
1		Cog. Eng.	B. R. JOHNS	12/13/99	57-24						
1		Cog. Mgr.	M. R. KOCH	12/13/99							
1		QA	T. J. VOLKMAN	12/13/99							
1		Safety	F. A. ZAK	12/13/99							
		Env.	N/A								

18. Signature of EDT Originator B. R. JOHNS Date: 12/13/99		19. Authorized Representative for Receiving Organization M. R. KOCH Date: 12/13/99		20. Design Authority/Cognizant Manager W. F. ZUROFF Date: 12/13/99		21. DOE APPROVAL (if required) Ctrl No. N/A <input type="radio"/> Approved <input type="radio"/> Approved w/comments <input type="radio"/> Disapproved w/comments	
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TEST REPORT FOR ACCEPTANCE TEST PROCEDURE FOR PUMPING INSTRUMENTATION AND CONTROL SKID "M"

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COGEMA ENGINEERING CORPORATION
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

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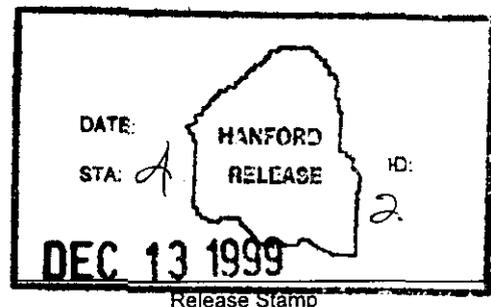
Abstract:

This is a Test Report for Acceptance Test Procedure (ATP) RPP-5073. This test report provides the results of the inspection and testing of the new Pumping Instrumentation and Control (PIC) skid designed as "M". The ATP was successfully completed. A copy of the completed ATP is in the Appendix of this document.

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Release Approval Date



Approved For Public Release

TEST REPORT FOR ACCEPTANCE TEST PROCEDURE FOR PUMPING INSTRUMENTATION AND CONTROL SKID "M"

1.0 INTRODUCTION

This test report provides the results from the performance of Acceptance Test Procedure (ATP) RPP-5073, for Pumping and Instrumentation Control (PIC) skid "M". The ATP verifies the proper construction of the PIC skid "M" by Site Fabrication Services along with proper programming of the Programmable Logic Controller (PLC) by engineering. New PIC skid "M" will be used for the pumping of tank U-102. A copy of the actual test results is in the Appendix of this document.

2.0 DESCRIPTION OF TEST

The test was performed at the Site Fabrication Services location. The ATP ensured the PIC skid was assembled and functioned as per the design drawings. Inputs to the skid were simulated to ensure proper equipment connections and wiring.

The ATP document provided detailed instructions for each test step and spaces for recording the data and signoffs. A copy of the test results including exceptions is in the Appendix.

3.0 TEST METHOD AND TEST EQUIPMENT

The ATP detailed the test methods and the test equipment to be used for testing. Test equipment identification and calibration dates are recorded on the ATP data sheets. Quality Control and Engineering witnessed the performance of the ATP.

4.0 TEST RESULTS

The ATP was successfully completed. Discrepancies in the test procedure were listed as exceptions. All the exceptions identified became part of the ATP and are in the Appendix along with the ATP results. All exceptions were reviewed, resolved and signed off as closed for this ATP.

A National Electrical Code (NEC) inspection was performed as part of the ATP. The NEC inspector accepted the electrical power portion of the skid and placed a blue acceptance sticker on the distribution panel. A Pressure Vessel inspector checked the water and air compressor tanks along with the associated relief valves. The installation of these tanks was acceptable. A copy of the NEC and Pressure Vessel inspection reports are in the Appendix of this document.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PIC skid is found to be ready for field operation. All exceptions were resolved. An Operational Test Procedure (OTP) will be performed after the skid is set up for field configuration.

6.0 REFERENCES

RPP-5073, REVISION 0, ACCEPTANCE TEST PROCEDURE FOR PUMPING AND INSTRUMENTATION CONTROL SKIDS, Lockheed Martin Hanford Corporation, Richland, Washington.

2H9903387, Site Fabrication Services work package.

7.0 APPENDIX

Copy of ATP, RPP-5073, Revision 0.

NEC Inspection Report

Pressure Vessel Inspection Report

4.0 PREREQUISITES

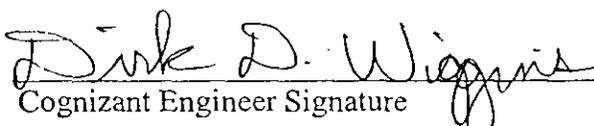
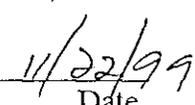
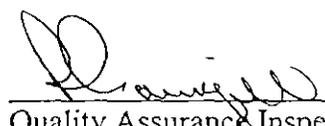
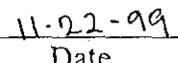
4.1 DRAWING VERIFICATION

A check of the constructed skid is to be compared to either the redlined drawings or the final unreleased skid drawings. Engineering and Quality Assurance shall verify the accuracy of the essential and support drawings. Engineering shall determine a resolution for all discrepancies by either correcting the drawings or changing the equipment.

The following drawings shall be walked down for verification of proper construction of the skid:

- 4.1.1 Wire terminations and wiring labeling on drawings H-14-103546, sheets 7 through 12 and H-14-103549, sheet 5.
- 4.1.2 Panel board arrangement on drawing H-14-103544.
- 4.1.3 Flow diagrams on drawings H-14-103546, sheet 5 and H-14-103551.

Drawing verification completed. (Final drawing release is not required to continue with this ATP.)

 Cognizant Engineer Signature	 Date	 11/22/99
 Quality Assurance Inspector Signature	 Date	

QC INSPECTION RECORD

A-1 of 60

4.4 SUPPLIES

The following supplies are required for this ATP:

Note: Test sections may commence prior to assembly of all the test equipment. Engineer and/or PIC are to ensure test equipment available prior to the start of each section.

4.4.1 Volt/ohm meter (VOM): Portable, 0-600vac.

Calibration No. 817-45-08-065 Exp. Date 2/17/2000 QA RE

Calibration No. _____ Exp. Date _____ QA _____

4.4.2 Transmation current (milliamp) simulator or equivalent

Calibration No. 817-45-08-065 Exp. Date 2-17-00 QA RE

Calibration No. 817-13-20-031 Exp. Date 3-31-00 QA RE

4.4.3 Manometer (capable of a minimum of 5 inches water gauge to a maximum of 20 inches water gauge for this ATP) must have a read out of variable test pressure.

Calibration No. 817-35-40-041 Exp. Date 11-24-99 QA RE

Calibration No. 817-35-40-024 Exp. Date 4/8/00 QA RE 11/29/99

817-35-40-054 9/16/00 RE 11/29/99

4.4.4 Megaohm meter, at least 500vac range.

681-45-45-001 9-16-00 RE 11/23/99

Calibration No. 817-45-08-065 Exp. Date 2-17-00 QA RE 11-22-99

- 4.4.5 480vac, 3 phase, 30-ampere power source for PIC skid.
- 4.4.6 Selector switches (2 each) with at least one NO and one NC contact.
- 4.4.7 Proximity switches (for simulating LS-1 and LS-2), 2 each.
- 4.4.8 Leak detector probes (2 each), (Not required to be green tagged.) or 2 ON/OFF switches can be used to simulate leak detectors.
- 4.4.9 Heat gun to warm thermocouple probes.
- 4.4.10 Thermocouple or thermocouple wire for simulating jumper and pump thermocouple probes.
- 4.4.11 Buckets or pans for water for leak detector probe test and catching water from DIP tubes and relief valve.

QC INSPECTION RECORD

4.5 PRESTART CONDITIONS

- 4.5.1 DP Fill the water tank at least one-third to half full of water.
- 4.5.2 DP Ensure the PIC skid is grounded in preparation for ATP testing.
- 4.5.3 Ensure the following PIC skid valves in the WFIE cabinet are OPEN prior to starting this ATP.

DP SALW-V-6035M (EQUALIZING)

DP SALW-V-6036M (EQUALIZING)

- 4.5.4 Ensure the following PIC skid valves are CLOSED prior to starting this ATP.

Air Compressor cabinet:

Water cabinet:

SALW-V-6025M
 SALW-V-6026M
 SALW-V-6034M
 SALW-V-6043M
 SALW-V-6044M
 SALW-V-6046M
 SALW-V-6047M
 SALW-V-6048M
 SALW-V-6049M

SALW-V-6027M
 SALW-V-6028M
 SALW-V-6029M
 SALW-V-6030M
 SALW-V-6031M
 SALW-V-6032M
 SALW-V-6037M

WFIE Cabinet:

SALW-V-6001M
 SALW-V-6002M
 SALW-V-6003M
 SALW-V-6004M
 SALW-V-6005M
 SALW-V-6006M
 SALW-V-6007M
 SALW-V-6008M
 SALW-V-6011M
 SALW-V-6012M
 SALW-V-6013M
 SALW-V-6014M

SALW-V-6015M
 SALW-V-6016M
 SALW-V-6017M
 SALW-V-6018M
 SALW-V-6019M
 SALW-V-6020M
 SALW-V-6021M
 SALW-V-6035M LOW
 SALW-V-6035M HIGH
 SALW-V-6036M LOW
 SALW-V-6036M HIGH

QC INSPECTION RECORD

- 4.5.5 Ensure the following PIC skid circuit disconnects, breakers and fuses are OPEN or OFF prior to starting this ATP.

SALW-DS-6002M SALW-DS-6003M SALW-DS-6004M SALW-DS-6005M

The following breakers are in distribution panel SALW-DP-6001M:

<input checked="" type="checkbox"/> Breaker "MAIN"	<input checked="" type="checkbox"/> Breaker 2
<input checked="" type="checkbox"/> Breaker 1	<input checked="" type="checkbox"/> Breaker 4
<input checked="" type="checkbox"/> Breaker 3	<input checked="" type="checkbox"/> Breaker 6
<input checked="" type="checkbox"/> Breaker 5	<input checked="" type="checkbox"/> Breaker 8
<input checked="" type="checkbox"/> Breaker 7	<input checked="" type="checkbox"/> Breaker 10
<input checked="" type="checkbox"/> Breaker 9	<input checked="" type="checkbox"/> Breaker 12
<input checked="" type="checkbox"/> Breaker 11	<input checked="" type="checkbox"/> Breaker 14
<input checked="" type="checkbox"/> Breaker 13	

The following fuses are inside the Instrument Enclosure:

Fuses FA/FB Fuses FC/FD
 Fuses (Leak detector/Heat trace)

- 4.5.6 Check for loose electrical connections at the following locations:

Terminal boards in Instrument Enclosure
 Motor starters and disconnect switches
 Terminal board in junction box inside the WFIE cabinet
 Terminal board in junction box for FGM outside WFIE cabinet
 Terminal board in heat trace splice box outside WFIE cabinet
 Distribution panel board
 480vac power plug

- 4.5.7 JS Ensure desiccant and filters are installed in the air compressor dryer and the before and after filters prior to performing sections 5.8 and 5.9.

- 4.5.8 All personnel initialing and/or signing this procedure shall enter their signature and initials on the Procedure Performer Signature Sheet on the last page of this document.

- 4.5.9 JS A pre-job safety meeting has been held before starting section 5.0 of this ATP.

QC INSPECTION RECORD

5.0 PROCEDURE

5.1 CONTINUITY CHECKS

Continuity checks shall be performed with a calibrated VOM. Perform the checks as identified below. Readings are to be less than 1 ohm. Record ohms reading on the line(s) provided. Out of tolerance readings must be corrected and rechecked prior to going to the next section. NOTE: NEC inspection must be completed prior to proceeding. *Close fuses as required to complete checks. (1) ~~2~~*

5.1.1 480vac main power plug to line side of main disconnect switch (SALW-DS-6002M). Check all three phases and ground.

.2 (RED) .2 (YELLOW) .2 (BLUE) .2 (GND)

5.1.2 Load side of main disconnect switch (SALW-DS-6002M) to line side of transformer disconnect switch (SALW-DS-6003M). Check all three phases and ground.

.2 (RED) .2 (YELLOW or BLUE) .2 (GND)

5.1.3 Load side of main disconnect switch (SALW-DS-6002M) to line side of jet pump motor starter (SALW-DS-6005M). Check all three phases and ground.

.1 (RED) .1 (YELLOW) .1 (BLUE) .1 (GND)

5.1.4 Load side of main disconnect switch (SALW-DS-6002M) to line side of air compressor motor starter (SALW-DS-6004M). Check all three phases and ground.

.2 (RED) .2 (YELLOW) .1 (BLUE) .1 (GND)

5.1.5 Load side of transformer disconnect switch (SALW-DS-6003M) through primary of transformer (SALW-XFMR-6001M). Check between the two-phase wires going to the transformer.

.4 (continuity through transformer primary)

QC INSPECTION RECORD

RPP-5074
REVISION 0

5.1.6 Line side of main breaker in panel board (SALW-DP-6001M) through secondary of transformer (SALW-XFMR-6001M). Check between the two phases and between each phase and neutral going to the transformer secondary.

.2 (Phase-A to phase-C, continuity through transformer secondary)

.2 (Phase-A to neutral, continuity through transformer secondary)

.2 (Phase-C to neutral, continuity through transformer secondary)

5.1.7 Load side of breakers in distribution panel (SALW-DP-6001M) to terminal point identified:

.2 Circuit 3 to TB10 in Instrument Enclosure

.2 Circuit 5 to TB13 in Instrument Enclosure

.2 Circuit 12 to Air Conditioner/Heater receptacle in Instrument Enclosure

.2 Circuit 6 to safe side terminal board in Intrinsic Safe Panel

.2 Circuit 1 to terminal board in FGM power junction box

.2 Circuit 11 to terminal board in FGM power junction box

.2 Circuit 13 to terminal board in FGM power junction box

.2 Circuit 14 to terminal board in FGM power junction box

.3 Circuit 2 to terminal board in FGM heat trace splice box

.3 Circuit 10 to terminal board in FGM heat trace splice box

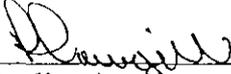
.3 Circuit 4 to receptacle in air compressor cabinet

.3 Circuit 7 to receptacles in WFIE cabinet

.3 Circuit 8 to receptacle in Water cabinet

.3 Circuit 9 to outside receptacle below panel board

Section 5.1 completed and all recorded readings within tolerance.


Quality Assurance Inspector Signature

11-22-99

Date

QC INSPECTION RECORD

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A-7 of 60

PAGE 183 OF

5.2 MEGGERING OF POWER WIRES

The power wires shall be checked for resistance to ground and phase to phase. A 500-volt megger shall be used for this check. Minimum acceptable readings expected are greater than 1000 megaohm or infinity. Test the circuits listed below. Record readings on the lines provided. Out of tolerance readings must be corrected and rechecked before going to the next section.

- 5.2.1 Each of the three phases at the pins of the power plug to ground and phase to phase. (Ensure main disconnect SALW-DS-6002M is OPEN.)

A-GND ∞ ; B-GND ∞ ; C-GND ∞ ; A-B ∞ ; A-C ∞ ; B-C ∞

- 5.2.2 Each of the three phases at the load side of the main disconnect switch (SALW-DS-6002M) to ground and phase to phase. (Ensure switches SALW-DS-6003M, SALW-DS-6004M and SALW-DS-6005M are OPEN.)

A-GND ∞ ; B-GND ∞ ; C-GND ∞ ; A-B ∞ ; A-C ∞ ; B-C ∞

- 5.2.3 Each of the two phases on the load side of the transformer disconnect switch (SALW-DS-6003M) to ground.

A-GND ∞ ; B-GND ∞ ;

- 5.2.4 Each of the three phases on the load side of the air compressor motor to ground.

A-GND ∞ ; B-GND ∞ ; C-GND ∞

- 5.2.5 Disconnect the neutral at the distribution panel from ground.

- 5.2.6 Each of the two phases and neutral to ground at the distribution panel.

A-GND ∞ ; B-GND ∞ ; NEUTRAL-GND ∞

- 5.2.7 Reconnect the ground to the neutral at the distribution panel.

- 5.2.8 Disconnect the circuit 6 wire at the safe side terminal block in the intrinsic safe panel.

QC INSPECTION RECORD

5.3 ELECTRICAL POWER CHECKS

The voltage checks are to verify proper voltages throughout the skid at specific termination points. Voltages checked are 480vac, 3 phase; 120vac, single phase; and 24vdc. Out of tolerance readings must be corrected when found before going to the next step in this section.

- 5.3.1 Ensure that all electrical connections are completed. Wires lifted during the megger checks are to be reconnected.
- 5.3.2 Ensure all switches and breakers are open and the six fuses in the instrument cabinet are open.
- 5.3.3 Ensure that all the fuses are in the two safety switches (SALW-DS-6002M) (SALW-DS-6003M) and motor starters (SALW-DS-6004M) (SALW-DS-6005M) including the control transformers are installed.
- 5.3.4 Connect the main power plug on the skid to a three phase, 480vac power source. Source to be protected by no greater than 30 amperes over current protection.
- 5.3.5 Turn ON the power source to the skid.
- 5.3.6 ENSURE 480vac +10vac/-20vac on the line side of the main disconnect switch (SALW-DS-6002M). Record the voltage.

499 vac A-B
496 vac A-C
495 vac B-C

- 5.3.7 Close the main disconnect switch (SALW-DS-6002M).
- 5.3.8 ENSURE 480vac +10vac/-20vac on the line side of the transformer disconnect switch (SALW-DS-6003M). Record the voltage.

498 vac A-C

- 5.3.9 ENSURE 480vac +10vac/-20vac on the line side of the air compressor motor starter (SALW-DS-6003M). Record the voltage.

499 vac A-B
499 vac A-C
497 vac B-C

QC INSPECTION RECORD

RPP-5074
REVISION 0

- 5.3.10 ENSURE 480vac +10vac/-20vac on the line side of the pump motor starter (SALW-DS-6005M). Record the voltage. 497 vac A-B
497 vac A-C
495 vac B-C
- 5.3.11 Remove the dead front on the panel board (SALW-DP-6001M) for access to the main breaker for a voltage measurement.
- 5.3.12 Close the transformer disconnect switch (SALW-DS-6003M).
- 5.3.13 Check for 240vac +10/-20 at the line side of the main breaker. Record voltage. 247.2 vac
- 5.3.14 Open the transformer disconnect switch (SALW-DS-6003M).
- 5.3.15 Replace the dead front on the panel board (SALW-DP-6001M).
- 5.3.16 Close the transformer disconnect switch (SALW-DS-6003M).
- 5.3.17 Close the 100 ampere main breaker in the panel board (SALW-DP-6001M).

QC INSPECTION RECORD

A-11 of 60

RPP-5074
REVISION 0

5.3.18 Check voltages for circuits at the following locations. Record the voltage reading on the space provided.

CKT #	CHECK VOLTAGE AT	BKR OPEN VOLTAGE (NEAR 0vac)	BKR CLOSED VOLTAGE (120+/-10vac)	OPEN BKR
1	FGM J-BOX	.2	124	✓
2	FGM HT BOX	1.4	124.4	✓
3	TB10, INSTR PNL	.2	124.3	✓
4	RCPT, AIR COMP	.4	124.2	✓
5	TB13, INSTR PNL	.4	124.1	✓
6	TB, INTRINSIC PNL	.6	124.1	✓
7	RCPT, WFIE	.5	124.1	✓
8	RCPT, WATER CAB	.7	124.1	✓
9	OUTSIDE RCPT.	.8	124.0	✓
10	FGM HT BOX	.7	124.3	✓
11	FGM J-BOX	.8	124.3	✓
12	RCPT, INSTR PNL	.4	124.1	✓
13	FGM J-BOX	.9	124.0	✓
14	FGM J-BOX	.9	124.2	✓

5.3.19 Install fuses FA, FB, FC and FD and close fuseholder.

5.3.20 Install fuses and close heat trace/leak detector fuseholder.

5.3.21 ENSURE 120vac +/-10vac at the following fuseholder load side locations. *Note: Close circuits in SALW-DP-6001M as required to complete these checks. (3) J.P. 1/25/97*

FA 124.2; FB 124.3; FC 124.4; FD 124.4;

Heat trace fuse(wire CKT3H-B) 124.3;

Leak Detector fuse(wire CKT3H-A) 124.3

5.3.22 ENSURE 24vdc +/-2vdc at each 24vdc power supply.

First power supply 24.2; second power supply 24.05

5.3.23 Open the 100 ampere main breaker in the panel board (SALW-DP-6001M).

5.3.24 Open the transformer disconnect switch (SALW-DS-6003M).

5.3.25 Open the main disconnect switch (SALW-DS-6002M).

QC INSPECTION RECORD

A-12 of 60

Voltage checks completed satisfactorily.

D. Rowell
 Quality Assurance Inspector Signature

11/23/99
 Date

5.5 SKID ELECTRICAL POWER UP

During the following sections for instrument calibration and PLC/DTAM programming, electrical power will be required to the skid. The following sequence can be used to power up and power down the skid. Record breakers closed or opened in table below. Only circuits requiring power need to be closed.

SWITCH OR BREAKER	Close	Open	Close	Open	Close	Open	Close	Open
SALW-DS-6002M								
SALW-DS-6003M								
CKT. #1								
CKT. #2								
CKT. #3								
CKT. #4								
CKT. #5								
CKT. #6								
CKT. #7								
CKT. #8								
CKT. #9								
CKT. #10								
CKT. #11								
CKT. #12								
CKT. #13								
CKT. #14								

QC INSPECTION RECORD

5.6 CALIBRATIONS

Instrumentation equipment on the skid requires calibration prior to the functional testing. Lockheed Martin procedures will be used for this calibration. The table below identifies the equipment requiring calibration and the procedure for performing the calibration.

INSTRUMENT	LOCATION	PROCEDURE
SALW-PS-6004M	INSTRU. AIR CAB.	6-PCD-508
SALW-WFT-6002M	WFIE CABINET	6-PCD-361
SALW-LT-6003M	WATER CABINET	6-PCD-361
SALW-SGT-6001M	WFIE CABINET	6-PCD-361
SALW-CONV-6001M	WFIE CABINET	6-CVT-520
SALW-FQIT-6001M	INSTRUMENT CAB.	Data sheet & Vendor Man.
SALW-PI-6006M	AIR COMPR. CABINET	6-TF-509
SALW-PI-6001M	WFIE CABINET	6-TF-509
SALW-PI-6005M	WFIE CABINET	6-TF-509
SALW-PI-6002M	WFIE CABINET	6-TF-509
SALW-PI-6003M	WFIE CABINET	6-TF-509
SALW-PI-6004M	WFIE CABINET	6-TF-509
SALW-PI-6007M	AIR COMPR. CABINET	6-TF-509
SALW-PI-6008M	WATER CABINET	6-TF-509

Calibrations completed. Work package no. 2W-99-01394, 85, 86, 87, 88
2W-99-01664 P.D. 11/1/99

D. DeFord 11/23/99
Engineer Signature Date

5.7 PLC/DTAM PROGRAMMING

This section is where the programs for the PLC and DTAM will be entered. Power will be required at the instrument cabinet to power up the PLC and DTAM. Power will also be required to the GFCI receptacle for power to the laptop computer. Lockheed Martin Interim Stabilization engineering will perform the programming of the PLC and DTAM. The final software programs shall be documented as required by HNF-5034. This documentation is not part of this ATP, but will be tracked by the Acceptance for Beneficial Use (ABU) document.

PLC/DTAM programmed.

D. DeFord 11/23/99
Engineer Signature Date

QC INSPECTION RECORD

5.8 SKID ELECTRICAL AND PROCESS AIR POWER-UP

NOTE: The Third Party Pressure Vessel inspection report must be received prior to proceeding with this section. Refer to section 4.2. Ensure desiccant in the air dryer.

5.8.1 ENSURE the skid and remote equipment are connected before proceeding with the functional testing.

5.8.2 ENERGIZE the Pumping and Instrumentation Control Skid by CLOSING the following DISCONNECT SWITCHES in the order found below:

DISCONNECT SWITCH	ENERGIZED (✓)
SALW-DS-6002M	✓
SALW-DS-6003M	✓
SALW-DS-6004M	✓
SALW-DS-6005M	✓

QC INSPECTION RECORD

5.8.3 ENERGIZE the Pumping and Instrumentation Control Skid by
 CLOSING the following Circuit Breakers located in SALW-DP-6001M
 "SALW SKID DIST PNL" in the order found below:

DISCONNECT SWITCH	ENERGIZED (✓)
"MAIN"	✓
1, FGM AND HEATER (SPARE)	✓
3, HEAT TRACE & LEAK DETECTION IN INSTRUMENT ENCLOSURE	✓
5, INSTRUMENT CABINET	✓
7, WEIGHT FACTOR INSTRUMENT ENCLOSURE RECEPTACLES	✓
9, RECEPTACLE NEAR PNLBD	✓
11, FGM AND HEATER	✓
13, FGM SAMPLE/RETURN HEAT TRACE (SPARE)	✓
2, HEAT TRACE/FGM IA LINE (SPARE)	✓
4, AIR COMPRESSOR CABINET FAN, HEATER & RECEPTACLE (GFCI)	✓
6, INTRINSICALLY SAFE PANEL	✓
8, WATER TANK CABINET HEATER	✓
10, HEAT TRACE FOR DIPTUBES & FGM IA LINE	✓
12, INSTR CAB A/C & HTR RCPT	✓
14, FGM SAMPLE/RETURN HEAT TRACE	✓

QC INSPECTION RECORD

RPP-5074
REVISION 0

- 5.8.16 ~~28~~ ✓ **ADJUST** Pressure Regulator Valve SALW-PCV-6006M to 30 psi (± 3 psig) as indicated by pressure gauge SALW-PI-6008M (WTR TK PRESS).
- 5.8.17 ✓ **VALVE IN** air to WFIE Cabinet by **PERFORMING** the following (Refer to H-14-103543 Sheet 1):
- 5.8.18 ✓ **SLOWLY OPEN** valve SALW-V-6026M located in the Air Compressor Cabinet.
- 5.8.19 ✓ **SLOWLY OPEN** valve SALW-V-6001M, located in the bottom of WFIE Cabinet. (NOTE: SALW-PRV-6002M may open if pressure through SALW-PCV-6001M is too high.)
- 5.8.20 ✓ **ADJUST** pressure control valve SALW-PCV-6001M in WFIE Cabinet to 20 psi (± 2.5 psi) as indicated by the pressure gauge located on the face of the valve.
- 5.8.21 ✓ **SLOWLY OPEN** valve SALW-V-6004M, located in the middle of WFIE Cabinet.
- 5.8.22 ✓ **SLOWLY OPEN** valve SALW-V-6003M, located in the middle of WFIE Cabinet.

CAUTION: The next three steps cause air to flow from ports on outside of WFIE cabinet.

- 5.8.23 ✓ **SLOWLY OPEN** valve SALW-V-6005M, located in the bottom left of WFIE Cabinet.
- 5.8.24 ✓ **SLOWLY OPEN** valve SALW-V-6006M, located in the bottom left of WFIE Cabinet.
- 5.8.25 ✓ **SLOWLY OPEN** valve SALW-V-6007M, located in the bottom left of WFIE Cabinet.
- 5.8.26 ✓ **SLOWLY OPEN** valve SALW-V-6020M, located in the middle left of WFIE Cabinet.
- 5.8.27 ✓ **SLOWLY OPEN** valve SALW-V-6021M, located in the middle left of WFIE Cabinet.
- 5.8.28 ✓ **SLOWLY OPEN** valve SALW-V-6019M, located in the middle left of WFIE Cabinet.

QC INSPECTION RECORD

WORK ORDER

2H9903387F

A-18 of 60

PAGE 194 OF _____

5.8.29 **ADJUST** the air flow through the diptubes by **PERFORMING** the following:

5.8.30 **ADJUST** flow to dip tubes to 1.5 CFH (\pm 0.5 CFH) as indicated by SALW-FIV-6002M.

1.5 D. DeF d 11/29/99
Flow Engineer Signature Date

5.8.31 **ADJUST** flow to dip tubes to 1.5 CFH (\pm 0.5 CFH) as indicated by SALW-FIV-6003M.

1.5 D. DeF d 11/29/99
Flow Engineer Signature Date

5.8.32 **ADJUST** flow to dip tubes to 1.5 CFH (\pm 0.5 CFH) as indicated by SALW-FIV-6004M.

1.5 D. DeF d 11/29/99
Flow Engineer Signature Date

5.8.33 **VALVE IN SALW-WFT-6002M AND SALW-SGT-6001M** by **PERFORMING** the following:

5.8.34 **ENSURE** the LOW side **AND** HIGH side isolation valves, located on SALW-V-6036M in cabinet WFIE Cabinet are OPEN.

5.8.35 **ENSURE** SALW-WFT-6002M EQUALIZING valve on valve manifold SALW-V-6036M in cabinet WFIE Cabinet is CLOSED.

5.8.36 **ENSURE** the LOW side **AND** the HIGH side isolation valves, located on SALW-V-6035M in cabinet WFIE Cabinet are OPEN.

5.8.37 **ENSURE** SALW-SGT-6001M equalizing valve on valve manifold SALW-V-6035M in cabinet WFIE Cabinet is CLOSED.

5.8.38 **CONFIRM** that a signal is present between WFIE Cabinet instruments and the Programmable Logic Controller by **PERFORMING** the following:

QC INSPECTION RECORD

RPP-5074
REVISION 0

5.8.39 ENSURE Weight Factor is approximately 0.0" (± 0.5 ") Water Gauge as indicated by Data Table Access Module. If DTAM displays "<<<<" indicating less than zero, ENSURE continuity between the transmitter and the Programmable Logic Controller and proceed with the test.

J. DeFord 11/29/99
Engineer Signature Date

5.8.41 ENSURE Specific Gravity is approximately 0.0" (± 0.5 ") Water Gauge as indicated by Data Table Access Module. If DTAM displays "<<<<" indicating less than zero, ENSURE continuity between the transmitter and the Programmable Logic Controller and proceed with the test.

D. DeFord 11/29/99
Engineer Signature Date

5.8.42 OPEN valve SALW-V-6035M Equalizing.

5.8.43 CLOSE valves SALW-V-6035M HI and LO.

5.8.44 OPEN valve SALW-V-6036M Equalizing.

5.8.45 CLOSE valves SALW-V-6036M HI and LO.

5.8.46 CLOSE valves SALW-V-6019M, SALW-V-6021M and SALW-V-6020M.

5.8.47 ENSURE all air leaks repaired.

D. DeFord 11/29/99
Engineer Signature Date

QC INSPECTION RECORD

5.8.48 Engineer to **VERIFY** that section 5.8 is complete by **SIGNING** below.

S. DeFol
Engineer Signature

11/29/99
Date

5.8.49 Quality Assurance Inspector to **VERIFY** that section 5.8 is complete by signing below.

[Signature]
Quality Assurance Inspector Signature

11/29/99
Date

QC INSPECTION RECORD

5.9 SKID WATER DRIP SYSTEM

- 5.9.1 NA Provide a container to capture water expelled from the dip tubes and pressure relief valve SALW-PRV-6001M on the outside of the WFIE cabinet.
- 5.9.2 BA ACTUATE the Dip Tube Drip system by SLOWLY OPENING the following valves:

VALVES	OPEN (✓)
SALW-V-6016M located in the middle of WFIE Cabinet	✓
SALW-V-6013M located in the middle of WFIE Cabinet	✓
SALW-V-6008M located in the middle of WFIE Cabinet	✓

CAUTION

Relief valve (SALW-PRV-6001M) will actuate and relieve pressure at 25 psig.

- 5.9.3 ✓ SLOWLY OPEN SALW-V-6018M WHILE CAREFULLY ADJUSTING Pressure Regulator SALW-PCV-6005M, located in the bottom of WFIE Cabinet to 20 psig (± 2 psig) as indicated by SALW-PI-6001M in the middle of WFIE Cabinet.
- 5.9.4 ✓ ADJUST valve SALW-V-6014M to allow APPROXIMATELY 2 drops/second as indicated by sight glass SALW-FG-6001M (± 1 drop/second).
- 5.9.5 ✓ ADJUST valve SALW-V-6015M to allow APPROXIMATELY 2 drops/second as indicated by sight glass SALW-FG-6002M (± 1 drop/second).

QC INSPECTION RECORD

5.9.6 BLX VALVE OUT the dip tube drip water by SLOWLY CLOSING the following:

VALVE	CLOSED (S)
SALW-V-6015M located in the middle of WFIE Cabinet	✓
SALW-V-6014M located in the middle of WFIE Cabinet	✓
SALW-V-6008M located in the middle of WFIE Cabinet	✓
SALW-V-6013M located in the middle of WFIE Cabinet	✓

5.9.7 ✓ Ensure equalizing valve SALW-V-6035M is OPEN.

5.9.8 ✓ Ensure HI and LO isolation valves on SALW-V-6035M are CLOSED.

5.9.9 ✓ Ensure equalizing valve SALW-V-6036M is OPEN.

5.9.10 ✓ Ensure HI and LO isolation valves on SALW-V-6036M are CLOSED.

5.9.11 ✓ Ensure the following valves in the order listed: SALW-V-6019M, SALW-V-6021M, SALW-V-6020M, SALW-V-6007M, SALW-V-6006M, and SALW-V-6005M are CLOSED.

5.9.12 ✓ SLOWLY open valve SALW-V-6044M in the Air Compressor Cabinet.

5.9.13 ✓ ENSURE air flows from pressure regulator SALW-PCV-6007M outside Air Compressor Cabinet.

5.9.14 ✓ CLOSE valve SALW-V-6044M in the Air Compressor Cabinet.

5.9.15 ✓ SLOWLY open valve SALW-V-6048M in Air Compressor Cabinet.

5.9.16 ✓ ENSURE air flows from pressure regulator SALW-PCV-6008M outside Air Compressor Cabinet.

QC INSPECTION RECORD

5.9.17 CLOSE valve SALW-V-6048M in the Air Compressor Cabinet.

5.9.18 SLOWLY crack open valve SALW-V-6046M in the Air Compressor Cabinet to ENSURE air flow at the fitting for the DOV (SALW-V-6042M), then RECLOSE SALW-V-6046M.

5.9.19 SLOWLY crack open valves SALW-V-6047M and SALW-V-6046M in the Air Compressor Cabinet to ENSURE air flow at the drain line.

5.9.20 CLOSE valves SALW-V-6047M and SALW-V-6046M in the Air Compressor Cabinet.

5.9.21 Engineer to VERIFY that section 5.9 is complete by SIGNING below.

BR Johns 11/29/99
Engineer Signature Date

5.9.22 Quality Assurance Inspector to VERIFY that section 5.9 is complete by signing below.

Dawson 11/29/99
Quality Assurance Inspector Signature Date

QC INSPECTION RECORD

A-24 of 60

5.10 ANALOG INPUT SIGNALS TO THE PLC AND DTAM

Water Tank Level Transmitter

- 5.10.1 PREPARE the Water Tank Level Transmitter SALW-LT-6003M for test signals by PERFORMING the following:
- BRJ ✓ 5.10.2 ENSURE valve SALW-V-6029M, located in the bottom of WATER TANK ENCL, is CLOSED.
- BRJ ✓ 5.10.3 ENSURE valve SALW-V-6031M, located in the bottom of WATER TANK ENCL, is CLOSED.
- BRJ ✓ 5.10.4 CONNECT test Manometer pressure source that can output at least to 62" water gauge to the HIGH PRESSURE vent/test port of the level transmitter SALW-LT-6003M.
- BRJ ✓ 5.10.5 ENSURE the LOW PRESSURE vent/test port of the level transmitter SALW-LT-6003M is OPEN to atmosphere.
- 5.10.6 ADJUST the test Manometer on the SALW-LT-6003M to a pressure of 31" Water Gauge (± 1 "). ~~30.98~~ 31.00 BRJ
- 5.10.7 RECORD the following:

DATA TABLE ACCESS MODULE WATER TANK LEVEL (RANGE: 28.5 TO 33.5 Inches)
31.1"

NOTE - In the next step, the alarm should annunciate between 11.75" and 12.75" Water Gauge.

- 5.10.8 VERY SLOWLY DECREASE the Level Transmitter test Manometer pressure UNTIL the Data Table Access Module "PIC WATER LEVEL LOW" alarm (alarm 9) annunciates. 12.17 on Mono. 12.2 DTAM BRJ
- 5.10.9 ACKNOWLEDGE the Water Tank Low Level alarm at the Data Table Access Module.

QC INSPECTION RECORD

A-25 of 60

- 5.10.10 **OBSERVE** the Data Table Access Module **AND RECORD** the water tank level readings below:

**DATA TABLE ACCESS MODULE
WATER TANK LEVEL
(RANGE 11.75 to 12.75 inches Water Gauge)**

12.2"

- 5.10.11 **SLOWLY INCREASE** the Level Transmitter test Manometer pressure to 15.5" Water Gauge.
- 5.10.12 **OBSERVE** the Data Table Access Module **AND RECORD** the water tank level readings below:

**DATA TABLE ACCESS MODULE
WATER TANK LEVEL
(RANGE 14.5 to 16.5 inches)**

15.48

- 5.10.13 **ENSURE** "PIC WATER" is back to "norm" on DTAM.
- 5.10.14 **REMOVE** the test manometer from the SALW-LT-6003M high pressure vent/test port, **AND RE-INSTALL** vent plugs.
- 5.10.15 **RESTORE** the Water Tank Level Transmitter SALW-LT-6003M by **PERFORMING** the following:
- 5.10.16 **OPEN** valve SALW-V-6029M, located in the bottom of WATER TANK ENCL.
- 5.10.17 **OPEN** valve SALW-V-6031M, located in the bottom of WATER TANK ENCL.
- 5.10.18 **ENSURE** "WATER TANK" on DTAM shows a value in inches.

QC INSPECTION RECORD

A-26 of 60

WEIGHT FACTOR TEST

5.10.19 **ENSURE** that NO Programmable Logic Controller input signals are FORCED and that the forcing function is DISABLED.

5.10.20 **CONNECT** the test Manometer pressure source that can output at least a 125" water gauge to the HIGH PRESSURE dip tube on the side of the "WFIE Cabinet."

5.10.21 **ENSURE** SALW-V-6001M is CLOSED.

5.10.22 **ENSURE** SALW-V-6005M is OPEN.

5.10.23 **ENSURE** SALW-V-6006M is OPEN.

5.10.24 **ENSURE** adjustment valves on SALW-FIV-6002M, SALW-FIV-6003M, SALW-FIV-6004M are CLOSED.

5.10.25 **ENSURE** SALW-WFT-6002M EQUALIZING valve located on SALW-V-6036M 3-Valve Manifold in cabinet WFIE Cabinet is CLOSED.

5.10.26 **ENSURE** the LOW side and HIGH side isolation valves, located on SALW-V-6036M 3-Valve Manifold in cabinet WFIE Cabinet are OPEN.

5.10.27 **SET** the test Manometer to 125" (+/- 1") Water Gauge. 125.04 *BRJ*

5.10.28 **OBSERVE** Data Table Access Module **AND RECORD** the Weight Factor on the table below.

DATA TABLE ACCESS MODULE WEIGHT FACTOR READING (RANGE 120 to 130 inches)
125.4"

5.10.29 **BLEED** off pressure from the manometer.

5.10.30 **CLOSE** SALW-V-6006M.

5.10.31 **OPEN** SALW-WFT-6002M equalizing valve, located on SALW-V-6036M 3-Valve Manifold in cabinet WFIE Cabinet.

QC INSPECTION RECORD

A-27 of 60

5.10.32 CLOSE the LOW side and HIGH side isolation valves, located on SALW-V-6036M 3-Valve Manifold in cabinet WFIE Cabinet.

SPECIFIC GRAVITY TEST

5.10.33 ENSURE SALW-V-6007M is OPEN.

5.10.34 ENSURE SALW-V-6005M is OPEN.

5.10.35 ENSURE the LOW side and the HIGH side isolation valves, located on SALW-V-6035M in cabinet WFIE Cabinet are OPEN.

5.10.36 CLOSE the Specific Gravity Transmitter equalizing valve located on SALW-V-6035M in cabinet WFIE Cabinet.

5.10.37 SET the test Manometer to 5" Water Gauge ($\pm .3$ "). 5.07 BRJ

5.10.38 OBSERVE Data Table Access Module AND RECORD the Specific Gravity reading on the table below.

DATA TABLE ACCESS MODULE
SPECIFIC GRAVITY READING
(RANGE 4.65 to 5.35 inches)

5.16

5.10.39 BLEED off pressure from the manometer.

5.10.40 DISCONNECT the test manometer pressure source.

5.10.41 CLOSE SALW-V-6007M.

5.10.42 CLOSE SALW-V-6005M.

5.10.43 OPEN SALW-SGT-6001M equalizing valve, located on SALW-V-6035M 3-Valve Manifold in cabinet WFIE Cabinet.

5.10.44 CLOSE the LOW side and HIGH side isolation valves, located on SALW-V-6035M 3-Valve Manifold in cabinet WFIE Cabinet.

QC INSPECTION RECORD

A-28 of 60

FLOW METER TEST

- 5.10.45 IF necessary **CONNECT** the brain terminal to the SALW-FQIT-6001M (SUPERNATANT FLOW XMIT), located in cabinet Instrument Cabinet.
- 5.10.46 **ENSURE** SALW-FQIT-6001M is powered and configured for simulated flow signals.
- 5.10.47 **SIMULATE** a flow signal of 2.0 gpm ^{25 BRG 12/2/99} (50% span) with the hand held calibrator, or from flowmeter face plate.
- 5.10.48 **ENSURE** the SALW-FQIT-6001M transmitter is operating properly by **RECORDING** the following:

DATA TABLE ACCESS MODULE SUPERNATANT FLOW (RANGE: 1.8 TO 2.2 GPM)	SUPERNATANT FLOW XMIT SUPERNATANT FLOW (RANGE: 1.8 TO 2.2 GPM)
2.00	2.00

- 5.10.49 **RESTORE** the SALW-FQIT-6001M (SUPERNATANT FLOW TRANSMITTER) to its original configuration.

SUCTION AND DISCHARGE PRESSURE SIGNAL

- 5.10.50 **ENSURE** a current source is connected to PSPT+ and PSPT- at the intrinsic side terminal board in the Intrinsic Safe panel. Set to transmitter simulate.
- 5.10.51 **SET** the current to 4mA and record the suction pressure on SALW-PI-6012M in the table below. Reading is to be approximately zero.
- 5.10.52 **SET** the current source to 20mA and record the suction pressure in the table below. Reading is to be approximately 100psi.
- 5.10.53 **DISCONNECT** the current source.

QC INSPECTION RECORD

A-29 of 60

- 5.10.54 **ENSURE** a current source is connected to PDPT+ and PDPT- at the intrinsic side terminal board in the Intrinsic Safe panel. Set to transmitter simulate.
- 5.10.55 **SET** the current to 4mA and record the discharge pressures on SALW-PI-6011M and on the DTAM in the table below. Readings are to be approximately zero.
- 5.10.56 **SET** the current source to 20mA and record the discharge pressures in the table below. Readings are to be approximately 300psi.
- 5.10.57 **DISCONNECT** the current source.

SALW-PI-6012M JET PUMP SUCTION PRESSURE		DTAM DISCHARGE PRESSURE	SALW-PI-6011M JET PUMP DISCHARGE PRESSURE	
0.1	At 4mA	0	.1	At 4mA
99.8	At 20mA	300	299.3	At 20mA

PIT FLAMMABLE GAS MONITOR ANALOG SIGNAL TO PLC

- 5.10.58 **ENSURE** a current source is connected to terminal board TB1 in the PICS Instrument Enclosure, points FGM 0(+) and FGM 0(-).
- 5.10.59 **SET** current source to 4 mA ($\pm .25$ mA).
- 5.10.60 **RECORD** the Data Table Access Module Flammable Gas DISPLAY on the "Pit FGM Input/Output Table" below. (Expected value to be approximately 0%.)
- 5.10.61 **SET** current source to 10 mA ($\pm .25$ mA).
- 5.10.62 **RECORD** the Data Table Access Module Flammable Gas display on the "Pit FGM Input/Output Table" below. (Expected value to be approximately 11%.)
- 5.10.63 **SET** current source to 20 mA ($\pm .25$ mA).

QC INSPECTION RECORD

5.10.64 **RECORD** the Data Table Access Module Flammable Gas display on the "Pit FGM Input/Output Table" below. (Expected value to be approximately 30%.)

Pit FGM Input/Output Table	
Input (mA)	Output (as displayed on Data Table Access Module)
4	10 %
10	11.2 %
20	30.0 %

5.10.65 **DISCONNECT** the current source.

DOME SPACE FLAMMABLE GAS MONITOR ANALOG SIGNAL TO PLC

5.10.66 **ENSURE** a current source is connected to terminal board TB1 in the PICS Instrument Enclosure, points FGM 1(+) and FGM 1(-).

5.10.67 **SET** current source to 4mA (+/- .25mA).

5.10.68 **RECORD** the Data Table Access Module Flammable Gas DISPLAY on the "Dome Space FGM Input/Output Table" below. (Expected value to be approximately 0%.)

5.10.69 **SET** current source to 10 mA (\pm .25 mA).

5.10.70 **RECORD** the Data Table Access Module Flammable Gas display on the "Dome Space FGM Input/Output Table" below. (Expected value to be approximately 11%.)

5.10.71 **SET** current source to 20 mA (\pm .25 mA).

5.10.72 **RECORD** the Data Table Access Module Flammable Gas display on the "Dome Space FGM Input/Output Table" below. (Expected value to be approximately 30%.)

QC INSPECTION RECORD

5.10.82 ENSURE Data Table Access Module displays a changed temperature.

BR Johns 11/29/99
Engineer Signature Date

5.10.83 ENSURE the connected probe temperature decreases after heat source removed.

5.10.84 DISCONNECT the temperature probe.

5.10.85 ENSURE a thermocouple probe is connected to the second thermocouple module in the Intrinsic Safe panel. (This will simulate jumper temperature.)

5.10.86 WARM the thermocouple probe.

5.10.87 ENSURE Data Table Access Module displays a changed temperature

BR Johns 11/29/99
Engineer Signature Date

5.10.88 ENSURE SALW-TE-6002M temperature decreases after heat source removed.

5.10.89 DISCONNECT the temperature probe.

RECIRCULATION FLUSH PRESSURE SIGNAL TO PLC

5.10.90 ENSURE a current source is connected to points RFPT+ and RFPT- at terminal board TB2 in the Instrument panel. (Set the current source to "TRANSMITTER SIMULATE.")

5.10.91 SET the current source to 4mA.

5.10.92 SLOWLY increase the current output until an alarm on the DTAM for High Recirc. Flush Pressure(alarm 39) occurs. (Approx. 12.5mA.) 12.08
BRJ

5.10.93 ACKNOWLEDGE alarm.

5.10.94 ENSURE the pressure on the DTAM for RFPT is approximately 15psi. 15.1
BRJ

QC INSPECTION RECORD

A-33 of 60

- 5.10.95 DECREASE the current source to approximately 4mA.
- 5.10.96 ENSURE the High Recirc. Flush Pressure alarm clears on the DTAM.
- 5.10.97 DISCONNECT the current source.
- 5.10.98 ENSURE a "RFPT SIGNAL LOSS" alarm (14) occurs.
- 5.10.99 ACKNOWLEDGE the alarm.

JUMPER FLUSH PRESSURE SIGNAL TO PLC

- 5.10.100 ENSURE a current source is connected to points JFPT+ and JFPT- at the intrinsic side terminal board in the Intrinsic Safe panel. (Set the current source to "TRANSMITTER SIMULATE.")
- 5.10.101 SET the current source to 4mA.
- 5.10.102 SLOWLY increase the current output until an alarm on the DTAM for High Flush Pressure(alarm 3) occurs and the BLUE light on the instrument panel is ON. (Approx. 12.5mA.)
- 5.10.103 ACKNOWLEDGE alarm.
- 5.10.104 ENSURE the pressure on the DTAM for JFPT is approximately 15psi. *15.0 BRJ*
- 5.10.105 DECREASE the current source to 4mA.
- 5.10.106 ENSURE the High Flush Pressure alarm clears on the DTAM and the BLUE light turns OFF.
- 5.10.107 DISCONNECT the current source.
- 5.10.108 ENSURE a "JFPT SIGNAL LOSS" alarm (16) occurs.
- 5.10.109 ACKNOWLEDGE the alarm.

LOW PRESSURE INTERLOCK (TRANSDUCER) INPUT

- 5.10.110 ENSURE a current source is connected to points PXPT+ and PXPT- at the intrinsic side terminal board in the Intrinsic Safe panel. (Set the current source to "TRANSMITTER SIMULATE.")

QC INSPECTION RECORD

A-34 of 60

- 5.10.111 ENSURE a normally closed transducer is connected across the LS-1+ and LS-1- and a normally open transducer across the LS-2+ AND LS-2- points on the intrinsic safe terminal board in the Intrinsic Safe panel.
- 5.10.112 ACTUATE both transducers by placing a piece of steel in front of the each transducer face.
- 5.10.113 ENSURE the laptop computer is connected to the PLC and on-line.
- 5.10.114 SET the current source to approximately 6mA on transmitter simulate.
- 5.10.115 ENSURE the GREEN light on the instrument panel is ON.
- 5.10.116 APPLY software forces or bypasses to allow the pump to start including the recirc low flow. Record the forces and bypasses installed.
- RFPT sig loss, Comm Fail. JFPT signal loss FGM
Recirc fail. Programmed -5 into RFPT and
JFPT to clear "Signal Loss"; Bypassed Comm Failure;
Forced FGM (I8.3) Recirc FL (I0.4) BRG*
- 5.10.117 TURN selector switch on Jet pump motor starter to ON.
- 5.10.118 PRESS the pump start from DTAM.
- 5.10.119 ENSURE the RED light on the instrument panel is ON and the GREEN light is OFF.
- 5.10.120 LOWER the current input to approximately 4.8mA or until Timer 4.1 starts timing on rung 0 of ladder 5 as observed on the lap top.
- 5.10.121 ENSURE that the amber light on the instrument panel turns ON immediately after the timer starts.

QC INSPECTION RECORD

A-35

5.10.122 **ENSURE** after a 30 second delay (Timer 4.1 times out) the following occurs:

- "XFR Pressure LOW" alarm (alarm 1) occurs at the DTAM;
- a pump shutdown occurs indicated by the horn sounding, strobe flashing;
- a pump shutdown alarm on the DTAM;
- the red light turns OFF;
- and the green light turns ON.

ACKNOWLEDGE alarms at Data Table Access Module to view the various alarms.

5.10.123 **INCREASE** the current to approximately 6mA to clear the "XFR PRESSURE LOW" alarm and turn OFF amber light.

5.10.124 **LEAVE** the current source in place for the high pressure section.

5.10.125 **RESET** as necessary the forces for the high pressure test. Record changes made.

No changes made BRJ

HIGH PRESSURE INTERLOCK (PS-1-1) INPUT

5.10.126 **PRESS** the pump start from DTAM.

5.10.127 **ENSURE** the RED light on the instrument panel is ON and the GREEN light is OFF.

5.10.128 **INCREASE** the current to approximately 11.5mA or until Timer 4.2 on rung 2 of ladder 5 starts timing as observed on the laptop computer.

5.10.129 **ENSURE** after a 3 second delay the following occurs:

- "XFR Pressure HIGH" alarm (alarm 2) at the DTAM;
- pump shutdown occurs indicated by the horn sounding, strobe flashing;
- shutdown alarm on the DTAM;
- the red light turns OFF;
- the green light turning ON.

ACKNOWLEDGE the alarms at the DTAM to view the various alarms.

5.10.130 **RETURN** the current to approximately 6mA and leave in place for the next section. **ENSURE** the high pressure alarm clears.

LEAVE the software forces and bypasses in place for the next sections.

QC INSPECTION RECORD

A-36 of 60

5.10.132 Engineer VERIFY that section 5.10 is complete by SIGNING below.

BR Johns 12/2/99
Engineer Signature Date

5.10.133 Quality Assurance Inspector VERIFY that section 5.10 is complete by signing below.

Lawyer 12/2/99
Quality Assurance Inspector Signature Date

QC INSPECTION RECORD

5.11 DISCRETE SIGNAL INPUTS TO PLC AND DTAM

NOTE: The DIP switches on the Intrinsic Safe Panel may require changing in order to get the proper responses for LS-1 and LS-2.

JR-1 VALVE POSITION (LS-1/LS-2) INPUT

- 5.11.1 ENSURE a normally closed transducer is connected across the LS-1+ and LS-1- and a normally open transducer across the LS-2+ AND LS-2- points on the intrinsic safe terminal board in the Intrinsic Safe panel.
- 5.11.2 ENSURE both transducers are actuated by a piece of steel in front of the each transducer face.
- 5.11.3 ENSURE the JR-1 valve indicates "norm" at the Data Table Access Module.
- 5.11.4 REMOVE the metal from in front of the LS-1 switch installed in the above step.
- 5.11.5 ENSURE the JR-1 valve indicates "NON-PROCESS" at the Data Table Access Module and address N20:32/0 is actuated on ladder 5 (rung 89).
- 5.11.6 REMOVE the metal from in front of the LS-2 switch.
- 5.11.7 ENSURE the JR-1 valve still indicates "NON-PROCESS" at the Data Table Access Module and address N20:32/1 is actuated on ladder 5 (rung 91).
- 5.11.8 REPLACE the metal in front of the LS-2 and the LS-1 transducers.
- 5.11.9 ENSURE the JR-1 valve indicates " norm" at the Data Table Access Module and addresses N20:32/0 and N20:32/1 are clear on ladder 5 (around rungs 89 and 91).
- 5.11.10 LEAVE the transducers in place and actuated for the following sections.

DILUTION TANK NO FLOW INPUT

- 5.11.11 ENSURE a normally closed switch is connected across terminal points DIL-F and CKT5H-A on terminal board TB4 in the Instrument Cabinet.

QC INSPECTION RECORD

A-38 of 60

- 5.11.12 ENSURE software forces and bypasses are in place to start the pump.
Record changes made.

Forces in place BRQ

- 5.11.13 ENSURE no dilution tank no flow alarm on the DTAM (alarm 35).

- 5.11.14 START the pump from the DTAM.

- 5.11.15 OPEN the switch at TB4.

- 5.11.16 ENSURE after a 5-minute delay a dilution tank no flow alarm on the DTAM and a pump shutdown occurs.

- 5.11.17 ACKNOWLEDGE the alarm.

- 5.11.18 CLOSE the switch.

- 5.11.19 ENSURE alarm clears.

- 5.11.20 DISCONNECT the switch.

FLAMMABLE GAS MONITOR INPUT

- 5.11.21 ENSURE a normally closed switch is connected to points FGM and CKT5H-A on terminal board TB 4 in the instrument cabinet.

- 5.11.22 ENSURE software forces and bypasses are in place to start the pump.
Record changes made.

Forces in-place. Removed FGM
force on I.B.3. BRQ

- 5.11.23 ENSURE no FGM interlock alarm on the DTAM (alarm 22).

- 5.11.24 START the pump from the DTAM.

- 5.11.25 OPEN the switch.

- 5.11.26 ENSURE an FGM alarm on the DTAM and the pump shuts down immediately.

- 5.11.27 ACKNOWLEDGE the alarm.

QC INSPECTION RECORD

A-39 of 60

- 5.11.28 CLOSE the switch.
- 5.11.29 ENSURE the FGM alarm clears.
- 5.11.30 LEAVE the switch connected for the Heat Trace check.

HEAT TRACE CONTROL FOR PUMP AND JUMPER

- 5.11.31 ENSURE the Heat Trace control on the DTAM is OFF.
- 5.11.32 ENSURE that heat trace relays HT-1 and HT-2 are deenergized by checking for zero voltage across points 2 and 7 at each relay.
- 5.11.33 ENSURE zero voltage at TB12 between HT-1 and CKT3-N.
- 5.11.34 TURN ON heat trace from DTAM to actuate relays HT-1 and HT-2.
- 5.11.35 CHECK for 120vac at TB-12, points HT-1 and CKT3-N. *123.6vac*
- 5.11.36 OPEN the FGM switch.
- 5.11.37 ENSURE 0vac at TB-12, points HT-1 and CKT3-N.
- 5.11.38 TURN OFF heat trace from the DTAM.
- 5.11.39 REMOVE the switch.
- 5.11.40 REMOVE all software forces and bypasses. *Remove Reduc force
Restore LFPT and JFPT
back to 2500. Removed
Comm Failure Bypass.
BRJ*
- 5.11.41 REMOVE the LS-1 and LS-2 transducers.
- 5.11.42 Engineer **VERIFY** that section 5.11 is complete by **SIGNING** below.

BR Johns 11/30/99
Engineer Signature Date

- 5.11.43 Quality Assurance Inspector **VERIFY** that section 5.11 is complete by signing below.

D. Smith 11/30/99
Quality Assurance Inspector Signature Date

QC INSPECTION RECORD
A-40 of 60

5.12 HEATERS AND AIR CONDITIONER

- 5.12.1 **TURN** the heater ON in the air compressor cabinet. Set the thermostat high enough to allow the unit to operate.
- 5.12.2 **RESET** the thermostat to approximately 40 degrees F to allow the heat to turn OFF.
- 5.12.3 **TURN** the fan thermostat switch low to allow the fan in the air compressor cabinet to run.
- 5.12.4 **RESET** the fan switch to approximately 90 degrees.
- 5.12.5 **TURN** the heater ON in the WFIE cabinet. Set the thermostat high enough to allow the unit to operate.
- 5.12.6 **RESET** the thermostat to approximately 40 degrees F to allow the heat to turn OFF.
- 5.12.7 **TURN** the heater ON in the Water cabinet. Set the thermostat high enough to allow the unit to operate.
- 5.12.8 **RESET** the thermostat to approximately 40 degrees F to allow the heat to turn OFF.
- 5.12.9 **TURN** the heater ON in the Instrument cabinet. Set the thermostat high enough to allow the unit to operate.
- 5.12.10 **RESET** the thermostat to approximately 40 degrees F to allow the heat to turn OFF.
- 5.12.11 **TURN ON** the air conditioner in the Instrument cabinet. If necessary, remove the front grill on the unit and adjust the temperature setting lower to get the unit to operate.
- 5.12.12 **RESET** the temperature setting to approximately 90 to 95 degrees. (Remove the grill and filter on the front of the unit for access to the adjustment.)

QC INSPECTION RECORD

2 H 9 9 0 3 3 8 7 F

A-41 of 60

5.13 LEAK DETECTION INTERLOCK CHECK

- 5.13.1 Set up one or two buckets for leak detector testing if leak detector probes are used for testing.

NOTE - A supply of water needs to be available to pour into the buckets during testing.

- Pump operation will be simulated during the remainder of the ATP.

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical. Comply with HNF-PRO-088, ELECTRICAL WORK SAFETY to avoid personnel electrical shock hazards.

- 5.13.2 ENSURE performed the CGI dedication for the leak detector relays per HNF-4275 and WTF-1-18 and WTF-30-16. *BRJ*
- 5.13.3 ENSURE a leak detector probe is connected to the primary leak detector terminals at TB11 in the Instrument Cabinet, points SD-1A, SD-1B, SA-1A, and SA-1B and CONNECT a leak detector probe to leak detector #1 terminals at TB11 in the Instrument Cabinet, points SD-2A, SD-2B, SA-2A, and SA-2B. IF NECESSARY remove the jumpers from the terminal block for leak detector #1.

OR

- BRJ A/A* ENSURE a normally open switch is connected to the primary leak detector terminals at TB11 in the Instrument Cabinet, points SD-1A, SD-1B, SA-1A, and SA-1B and CONNECT a normally open switch to leak detector #1 terminals at TB11 in the Instrument Cabinet, points SD-2A, SD-2B, SA-2A, and SA-2B. (NOTE: Connect SD-MA and SA-MA wires to one pole of the switch and SD-MB and SA-MB wires to the other pole of the switch.) IF NECESSARY remove the jumpers from the terminal block for leak detector #1.
- 5.13.4 ENSURE no primary leak detector alarms at the DTAM (alarms 6 and 7).
- 5.13.5 PLACE the primary leak detector assembly in a bucket of water or close the test switch on the primary leak detector.

QC INSPECTION RECORD

A-43 of 60

RPP-5074
REVISION 0

- 5.13.6 ENSURE a leak detector leak alarm for the primary leak detector is received at the DTAM (alarm 6) after a 3 second delay.
- 5.13.7 ACKNOWLEDGE the Leak Detector Alarm at the Data Table Access Module.
- 5.13.8 REMOVE the leak detector assembly from the bucket and allow the water to drain off the assembly into the bucket or open the test switch.
- 5.13.9 ENSURE the leak detector alarms clear at the DTAM.
- 5.13.10 DISCONNECT one of the "SD" wires going to the probe or switch.
- 5.13.11 ENSURE trouble alarm 7 occurs.
- 5.13.12 ACKNOWLEDGE the alarm.
- 5.13.13 ENSURE no leak detector #1 alarms at the DTAM (alarms 18 and 19).
- 5.13.14 PLACE the leak detector #1 assembly in a bucket of water or close the switch for leak detector #1.
- 5.13.15 ENSURE a leak detector leak for leak detector #1 is received at the DTAM (alarm 18) after a 3 second delay.
- 5.13.16 ACKNOWLEDGE the Leak Detector Alarm at the Data Table Access Module.
- 5.13.17 REMOVE the leak detector assembly from the bucket and allow the water to drain off the assembly into the bucket or open the test switch.
- 5.13.18 ENSURE the leak detector alarms clear at the DTAM.
- 5.13.19 DISCONNECT one of the "SD" wires going to the probe or switch.
- 5.13.20 ENSURE trouble alarm 19 occurs.
- 5.13.21 ACKNOWLEDGE the alarm.
- 5.13.22 DISCONNECT the probes or switches from TB11.
- 5.13.23 ENSURE the jumpers for leak detector #1 are installed at TB11.

QC INSPECTION RECORD

A-44 of 60

5.13.24 Engineer **VERIFY** that section 5.13 is complete by **SIGNING** below.

BR Johns 11/30/99
Engineer Signature Date

5.13.25 Quality Assurance Inspector **VERIFY** that section 5.13 is complete by signing below.

[Signature] 11/30/99
Quality Assurance Inspector Signature Date

QC INSPECTION RECORD

A-45 of 60

5.14 SKID SHUTDOWN AFTER ATP

5.14.1 Bleed the air pressure off the air system by turning the selector switch on the air compressor starter to OFF and then OPENING the air drain valves SALW-V-6043M, SALW-V-6046M, SALW-V-6047M, AND SALW-V-6037M. *Done BAY*

5.14.2 Ensure the following PIC skid circuit disconnects, breakers and fuses are OPEN or OFF.

SALW-DS-6002M SALW-DS-6003M SALW-DS-6004M SALW-DS-6005M

The following breakers are in distribution panel SALW-DP-6001M:

<input checked="" type="checkbox"/> Breaker "MAIN"	<input checked="" type="checkbox"/> Breaker 2
<input checked="" type="checkbox"/> Breaker 1	<input checked="" type="checkbox"/> Breaker 4
<input checked="" type="checkbox"/> Breaker 3	<input checked="" type="checkbox"/> Breaker 6
<input checked="" type="checkbox"/> Breaker 5	<input checked="" type="checkbox"/> Breaker 8
<input checked="" type="checkbox"/> Breaker 7	<input checked="" type="checkbox"/> Breaker 10
<input checked="" type="checkbox"/> Breaker 9	<input checked="" type="checkbox"/> Breaker 12
<input checked="" type="checkbox"/> Breaker 11	<input checked="" type="checkbox"/> Breaker 14
<input checked="" type="checkbox"/> Breaker 13	

5.14.3 DISCONNECT the power plug from the 480vac power source.

5.14.4 Ensure the following PIC skid valves in the WFIE cabinet are OPEN.

SALW-V-6035M (EQUALIZING)
 SALW-V-6036M (EQUALIZING)

5.14.5 Ensure the following PIC skid valves are CLOSED.

Air Compressor cabinet:

SALW-V-6025M
 SALW-V-6026M
 SALW-V-6034M
 SALW-V-6043M
 SALW-V-6044M
 SALW-V-6046M
 SALW-V-6047M
 SALW-V-6048M
 SALW-V-6049M

Water cabinet:

SALW-V-6027M
 SALW-V-6028M
 SALW-V-6029M
 SALW-V-6030M
 SALW-V-6031M
 SALW-V-6032M
 SALW-V-6037M

QC INSPECTION RECORD

A-46

WFIE Cabinet:

- | | |
|--|---|
| <input checked="" type="checkbox"/> SALW-V-6001M | <input checked="" type="checkbox"/> SALW-V-6015M |
| <input checked="" type="checkbox"/> SALW-V-6002M | <input checked="" type="checkbox"/> SALW-V-6016M |
| <input checked="" type="checkbox"/> SALW-V-6003M | <input checked="" type="checkbox"/> SALW-V-6017M |
| <input checked="" type="checkbox"/> SALW-V-6004M | <input checked="" type="checkbox"/> SALW-V-6018M |
| <input checked="" type="checkbox"/> SALW-V-6005M | <input checked="" type="checkbox"/> SALW-V-6019M |
| <input checked="" type="checkbox"/> SALW-V-6006M | <input checked="" type="checkbox"/> SALW-V-6020M |
| <input checked="" type="checkbox"/> SALW-V-6007M | <input checked="" type="checkbox"/> SALW-V-6021M |
| <input checked="" type="checkbox"/> SALW-V-6008M | <input checked="" type="checkbox"/> SALW-V-6035M LOW |
| <input checked="" type="checkbox"/> SALW-V-6011M | <input checked="" type="checkbox"/> SALW-V-6035M HIGH |
| <input checked="" type="checkbox"/> SALW-V-6012M | <input checked="" type="checkbox"/> SALW-V-6036M LOW |
| <input checked="" type="checkbox"/> SALW-V-6013M | <input checked="" type="checkbox"/> SALW-V-6036M HIGH |
| <input checked="" type="checkbox"/> SALW-V-6014M | |

5.14.6 ENSURE the power plug on the power cable is the correct model per H-14-103546, item 41.

5.14.7 Engineer VERIFY that section 5.14 is complete by SIGNING below.

BR Johns 12/2/99
Engineer Signature Date

5.14.8 Quality Assurance Inspector VERIFY that section 5.14 is complete by signing below.

Raujell 12/2/99
Quality Assurance Inspector Signature Date

QC INSPECTION RECORD

A-47 of 60

5.15 REDLINE INCORPORATION

5.15.1 ENSURE the redlines identified in the redline log in the Fabrication work package are incorporated into the revised drawings for skid "M".

NOTE: Redlines incorporation must meet the intent of the redline log. The redlines may not be exactly the same as marked on the working drawings. Example: If a part was added to a drawing and then it is discovered that the part already existed on the drawing, then the final incorporation may be to increase the quantity of the existing part. Drawing views may change from the redline version in order to meet drafting standards.

5.15.2 Engineer to VERIFY section 5.15 is completed by signing below.

BR Johns 11/16/99
Engineer Signature Date

5.15.3 Quality Assurance Inspector to VERIFY section 5.15 is completed by signing below.

[Signature] 11-16-99
Quality Assurance Inspector Signature Date

QC INSPECTION RECORD

ACCEPTANCE TEST PROCEDURE

This page may be reproduced as necessary

PAGE _____ of _____

ACCEPTANCE TEST PROCEDURE LOG		
Name	Date	Comment
11/23/99	11/23/99	Left off at end of day at step 5.8.22. Turned off all power. Air leak in EPC.
B Johns	11/29/99	Had to skip water level transmitter test due to transmitter not being calibrated.
B Johns	11/29/99	Add to prog to have instr. techs to have correct fittings for connecting manometer to "High Press. DIP tube".
B Johns	11/29/99	Add to voltage checks to verify 32 volts at I-S modules.
B Johns	11/29/99	Completed sections 5.9 and 5.12. Need to finish section 5.10. Need to do sections 5.11 and 5.13 of ATP testing.
B Johns	11/30/99	on future ATP's rewrite 5.13.23 to have installing jumpers as optional.
B Johns	12/2/99	step 5.10.47 Editorial change. Changed 50% to 25% BRJ

QC INSPECTION RECORD

A-49 of 60

ACCEPTANCE TEST PROCEDURE EXCEPTION LOG

This page may be reproduced as necessary

PAGE _____ of _____

ACCEPTANCE TEST PROCEDURE EXCEPTION LOG		
Number	Date	Description
1	11/22/99	Add note to section 5.1 to close buses as req'd for continuity checks. P.P.
2	11/23/99	DEVICE CONFIGURATION WAS REQUIRED TO GET CORRECT MEGGER READINGS FOR CKS 3,4,5,7.
3	11/23/99	Add note to section 5.3.21 to close circuits as req'd for voltage checks. P.P.
4	11/30/99	Flow converter not calibrated.
5	11/30/99	Labels on water level transmitter incorrect.

Editorial
 Changes
 12/2/99
 Editorial
 Change
 12/2/99

QC INSPECTION RECORD
 A-50 of 60

ACCEPTANCE TEST PROCEDURE EXCEPTION RECORD

This page may be reproduced as necessary.

ATP step number: 5.2.9	ATP Exception Log Number 2
Description of Exception: Megger readings were below required 1000 MEGA OHMS.	
Resolution of Exception: MEGGER READINGS WERE BEING TAKEN "THROUGH" DEVICE WINDINGS (SUCH AS CABINET HEATERS). CONFIGURE CKTS PER ATTACHED SHEET AND RETEST. ALL RESULTS SHOULD BE WITHIN SPECIFIED RANGE (> 1000 MEGA OHMS)	
Date of Resolution:	11/23/99
Cognizant Engineer signature:	BR Johns 11/30/99 M.R. KOCH
Quality Assurance signature:	[Signature] 12/1/99
Design Authority:	[Signature] 12/1/99
RESOLUTION COMPLETED: (date)	12/1/99
Quality Assurance:	[Signature] 12/1/99
Cognizant Engineer:	BR Johns

QC INSPECTION RECORD

A-51 of 60

MEGGER TESTING
SKID "M"FOR CKT 3,

DISCONNECT LOAD TO PREVENT READING DEVICE IMPEDANCE AND CAUSING MEGGER TEST FAILURE, BY PERFORMING THE FOLLOWING:

"OPEN" OR "REMOVE" 10A LEAK DETECTION FUSE AND 10A HEAT TRACE FUSE IN INSTRUMENT ENCLOSURE,

✓ - CLOSE AT COMPLETION OF TEST

REFERENCE H-14-103546 SHEET 13

FOR CKT 4,

TO PREVENT READING HEATER AND COOLING FAN WINDING IMPEDANCE, PERFORM THE FOLLOWING:

- ENSURE HEATER IS TURNED DOWN LOWER THAN AMBIENT OR UNPLUG.

- ENSURE FAN THERMOSTAT IS TURNED HIGHER THAN AMBIENT.

- ENSURE NO OTHER DEVICES PLUGGED INTO CONVENIENCE RECEPTACLE IN AIR COMPRESSOR ENCLOSURE.

REFERENCE H-14-103546 SHEET 5.

✓ - RESET TEMPERATURES AT COMPLETION OF MEGGER TEST

FOR CKT 5

"OPEN" OR REMOVE FUSES

5A	CKT 5H-A
5A	CKT 5H-B
10A	CKT 5H-C
5A	CKT 5H-D

- ENSURE ENCLOSURE LIGHT IS "OFF" OR DISCONNECT FIXTURE

REFERENCE H-14-103546 SHEET 13

✓ - CLOSE FUSES AND RESTORE FIXTURE AT COMPLETION OF MEGGER TESTING.

FOR CKT 7

- UNPLUG HEATER AND LIGHT FIXTURE IN W/FIE

- ENSURE NO OTHER DEVICES ARE PLUGGED IN
H-14-103546 SH 5

✓
A-52 of 60

m/wh/rlh
11/23/99

ACCEPTANCE TEST PROCEDURE EXCEPTION RECORD

This page may be reproduced as necessary.

ATP step number: 5.10.45 to 5.10.49	ATP Exception Log Number 4
Description of Exception: Unable to perform flow meter test due to flowmeter not calibrated.	
Resolution of Exception: The flow meter test will be performed after it is calibrated. This will be done at the salt well maintenance shop. The ATP procedure will be signed off as complete after the flow meter test is completed.	
Date of Resolution:	11/30/99
Cognizant Engineer signature:	BR Johns
Quality Assurance signature:	TJ Volkman 12/1/99
Design Authority:	A. S. Zumbly 12/1/99
RESOLUTION COMPLETED: (date)	12/2/99
Quality Assurance:	Revised 12/2/99
Cognizant Engineer:	BR Johns

ACCEPTANCE TEST PROCEDURE EXCEPTION RECORD

This page may be reproduced as necessary.

ATP step number: <i>Final Signoff</i>	ATP Exception Log Number <i>5</i>
Description of Exception: <i>Three water tank enclosure labels have errors, do not match final dwgs.</i>	
Resolution of Exception: <i>The labels for valves SALW-V-6031M and SALW-V-6029M and for transmitter SALW-LT-6003M are to be replaced with correct labels. This will be completed at the saltwell maintenance shop after the skid is received from the fab shop.</i>	
Date of Resolution:	<i>11/30/99</i>
Cognizant Engineer signature:	<i>BR Johns</i>
Quality Assurance signature:	<i>TJ Volkman 12/1/99</i>
Design Authority:	<i>A. S. Zulf 12/1/99</i>
RESOLUTION COMPLETED: (date)	<i>12/2/99</i>
Quality Assurance:	<i>Raymond W 12/2/99</i>
Cognizant Engineer:	<i>BR Johns</i>

PROCEDURE PERFORMER SIGNATURE SHEET

All personnel who will be performing, initialing and signing the procedure shall enter their printed name, signature and initials below.

PRINT NAME	SIGNATURE	INITIALS
Dirk D. Wiggins	Dirk D. Wiggins	DDW
DOUG DEFORD	D. Deford	DD
Ron Cowgill	R. Cowgill	RC
MELISSA HERRON	M. Herron	MCH
Tim YEAROUT	Tim Yearout	TJ
BRAD DAUENHAUER	B. Dauenhauer	^{EFD 11/28/95} BTD -BTD
Bruce R Johns	BR Johns	BRJ
ROY C. FERGUSON	Roy C. Ferguson	RCF
James R Harris	JR Harris	JRH

QC INSPECTION RECORD
 A-56 of 60

UNFIRED PRESSURE VESSEL - REPORT OF INSPECTION (Form NB-7)
THE HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY, HARTFORD, CT

TPI WO NO: 2W-99- _____ (1 Hrs)

1	Date Inspected 11/16/1999	Cert Exp 11/2001	Cert. Posted <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Owner No TK-6002M	Jurisdiction No TPI-WT-141	National Board / Other NB-27469L
2	Owner: DEPARTMENT OF ENERGY (RL)		Owner Address: HANFORD, RICHLAND, WA 99352		Kind of Inspection Certificate Inspection <input type="checkbox"/> Int'l <input checked="" type="checkbox"/> Ext <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
3	User Name: (LMHC) LOCKHEED MARTIN HANFORD CORP.			User Location: 200-W TANK FARM		Specific Location: SALT WELL SKID -M
4	Type <input checked="" type="checkbox"/> AIR TANK <input type="checkbox"/> WATER TANK <input type="checkbox"/> Other			Year Built 1998	Manufacture: BRUNNER ENG	
5	Use: Storage <input checked="" type="checkbox"/> Receiver <input type="checkbox"/> Process		Heat <input type="checkbox"/> Exchange <input type="checkbox"/> Other		Size: 14" X 20"	Inspection opening size: 2" PLUGS
	Pressure Gauge Tested <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			Hydro Test: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
6	Pressure Allowed (MAWP) This Inspection: 200 PSIG		Safety-Relief Valve: Stamped PSI: 125		Valve: SALW-PRV-6004M How Tested: 1/2", 296 CFM NEW	
7	Certificate may be issued? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If No, explain fully under conditions)					
	7a. INSPECTION STATUS: <input checked="" type="checkbox"/> Passed <input type="checkbox"/> Failed <input type="checkbox"/> Passed with Discrepancy <input type="checkbox"/> Reinspect					
	7b. VESSEL STATUS: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive <input checked="" type="checkbox"/> New <input type="checkbox"/> Exempt <input type="checkbox"/> Removed					
8	CONDITIONS: Small Horizontal Air Accumulator for salt well support skid M.					

Inspected at 277-W Fabrication Shop during final assembly. Scheduled to be located at Tank Farms

8a: Internal Inspection not done or required this inspection.

Original Thickness: Shell = 0.106 Heads = 0.094

8b: External Inspection shows no dents, damage, leakage, corrosion or excess vibration.

Pressure guage: Installed & Proper Bottom drain: Installed & Suitable

Safety-Relief Valve Seal was intact with no evidence of damage or tampering

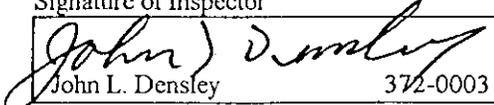
9	REQUIREMENTS/RECOMMENDATIONS: The following items are to be corrected:
---	--

1. None this inspection

10	Name of Facility Contact to whom requirements were explained: Bruce Johns Tel: 373-3429 S7-24 Copies to: David Saucressig Tel: 373-0183 S7-20, Mike Koch Tel: 373-2699 S7-24
----	---

I hereby Certify this is a true report of my inspection

Signature of Inspector

 John L. Densley 372-0003	Commission No NB- 8032W	Employed By: The Hartford Steam Boiler Inspection and Insurance Co.
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TPI-WT-141.doc

A-58 of 60

UNFIRED PRESSURE VESSEL - REPORT OF INSPECTION (Form NB-7)
 THE HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY, HARTFORD, CT

TPI WO NO: 2W-99- _____ (1 Hrs)

1	Date Inspected 11/16/1999	Cert Exp 11/2001	Cert. Posted <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Owner No TK-6001M	Jurisdiction No TPI-WT-142	National Board / Other NB- 100784
2	Owner: DEPARTMENT OF ENERGY (RL)		Owner Address: HANFORD, RICHLAND, WA 99352		Kind of Inspection Certificate Inspection <input type="checkbox"/> Intl'l <input checked="" type="checkbox"/> Ext <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
3	User Name: (LMHC) LOCKHEED MARTIN HANFORD CORP.			User Location: 200-W TANK FARMS		Specific Location: SALT WELL SKID-M
4	Type <input type="checkbox"/> AIR TANK <input checked="" type="checkbox"/> WATER TANK <input type="checkbox"/> Other			Year Built 1998	Manufacture: STOYSTOWN	
5	Use: Storage <input checked="" type="checkbox"/> Receiver <input type="checkbox"/> Process		Heat <input type="checkbox"/> Exchange <input type="checkbox"/> Other		Size: 20" X 60"	Inspection opening size: 2" PLUGS
Pressure Gauge Tested <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Hydro Test: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
6	Pressure Allowed (MAWP) This Inspection: 125 PSIG		Safety-Relief Valve: Stamped PSI: 60		Valve: SALW-PRV-6005M 3/4in, 158 CFM	How Tested: NEW
7	Certificate may be issued? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If No, explain fully under conditions)					
7a. INSPECTION STATUS: <input checked="" type="checkbox"/> Passed <input type="checkbox"/> Failed <input type="checkbox"/> Passed with Discrepancy <input type="checkbox"/> Reinspect						
7b. VESSEL STATUS: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive <input checked="" type="checkbox"/> New <input type="checkbox"/> Exempt <input type="checkbox"/> Removed						
8	CONDITIONS: Vertical Water Accumulator for salt well support skid M.					

Inspected at 277-W Fabrication Shop during final assembly. Scheduled to be located at Tank Farms

8a: Internal Inspection not done or required this inspection. Vessel is galvanized and not subject to internal corrosion.

8b: External Inspection shows no dents, damage, leakage, corrosion or excess vibration.

Pressure gauge: Installed & Proper Bottom drain: Installed & Suitable

Safety-Relief Valve Seal was intact with no evidence of damage or tampering

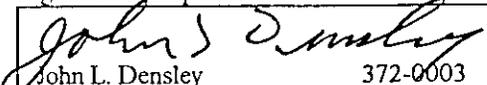
9	REQUIREMENTS/RECOMMENDATIONS: The following items are to be corrected:
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1. None this inspection

10	Name of Facility Contact to whom requirements were explained: Bruce Johns Tel: 373-3429 S7-24 Copies to: David Saueressig Tel: 373-0183 S7-20, Mike Koch Tel: 373-2699 S7-24
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I hereby Certify this is a true report of my inspection

Signature of Inspector

 John L. Densley	372-0003	Commission No NB- 8032W	Employed By: The Hartford Steam Boiler Inspection and Insurance Co.
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TPI-WT-142.doc

Send to Ron McMurphy T1-31

NEC INSPECTION REPORT

ORIGINAL

Project/W.O. No N/A	Building No. 277W	Code Edition NEC, 1999 Edition	Report No. 8158
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Inspection Requested By Ron McMurphy	Phone 373-3793	Inspector Bresina WL	Phone 376-5265	Page 1 of 1
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Item Inspected Pumping instrumentation control skid-M, shop built

Condition Found Acceptable	Unacceptable (see description below)
Inspector Signature WL Bresina <i>WL Bresina</i>	Original Inspection Date Nov 9, 1999
	Closure Date Nov 9, 1999

	Description of NEC Violation	Cause Code	Days to Correct	Violation Corrected	Date
1					
2					
3					
4					
5					
6					
7					

Post-It Fax Note	7671	Date	# of pages
To	BRUCE JOHNS	From	BILL BRESINA
City/Dept		Co.	
Address		Phone #	
Fax #		Fax #	

Electricity will be discontinued for the equipment or facility identified if violations are not corrected within the allowed in the "Days to correct" column. "Days to Correct" starts with the original inspection date. For more info regarding this, call the Chief Electrical Engineer at 376-6347.

A-60 of 60