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Document #: SD-W030-ATR-004

Title/Desc:

W-030 AY & AZ TANK FARM COOLING & MISC
INSTRUMENTATION [VENTILATION UPGRADES]

Pages: 54

APR 29 1996

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT No 615251

2. To: (Receiving Organization) W-030 Test Review Board		3. From: (Originating Organization) Project W-030, Tank Farm Projects		4. Related EDT No.: 613210	
5. Proj./Prog./Dept./Div.: Project W-030		6. Cog. Engr.: F.T.Clifton		7. Purchase Order No.: N/A	
8. Originator Remarks: Approval of W-030 Acceptance Test Report by W-030 Test Review Board (TRB). Project W-030 provides the AY/AZ tank farms ventilation upgrades.				9. Equip./Component No.: N/A	
				10. System/Bldg./Facility: AY/AZ TANK FARMS	
11. Receiver Remarks:				12. Major Assm. Dwg. No.: N/A	
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				14. Required Response Date: April 15, 1996	

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1	WHC-SD-W030-004 ATR		0	W030 AY/AZ TANK FARM COOLING AND MISC. INSTRUMENTATION	Q	2	2	

16. KEY									
Approval Designator (F)		Reason for Transmittal (G)				Disposition (H) & (I)			
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		2. Release		5. Post-Review		2. Approved w/comment		5. Reviewed w/comment	
		3. Information		6. Dist. (Receipt Acknow. Required)		3. Disapproved w/comment		6. Receipt acknowledged	
SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)									
(G)	(H)	17.				(G)	(H)		
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN
2	2	Cog. Eng.	<i>D.B. Cole</i>	R3-25	4/25/96	KA Colosi	R3-25	6	
2	2	Cog. Mgr.	<i>G.L. Parsons</i>	R3-25	4/25/96				
2	2	QA	<i>Hank M. Chaffin</i>	R3254	4-25-96				
		Safety	<i>AJA</i>						
		Env.	<i>AJA</i>						
18.		19.		20.		21. DOE APPROVAL (if required) Ctrl. No.			
<i>D.B. Cole</i> 4/26/96 Signature of EDT Originator		<i>KA Colosi</i> 4/26/96 Authorized Representative for Receiving Organization		<i>D.B. Cole</i> 4/26/96 <i>G.L. Parsons</i> 4/25/96 Cognizant Manager		☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments			

W030 AY/AZ TANK FARM COOLING AND MISCELLANEOUS INSTRUMENTATION

D.B.COLE

WHC, Richland, WA 99352

U.S. Department of Energy Contract DE-AC06-87RL10930

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UC: 2030

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Charge Code: NK201

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Total Pages: 38 51 *KMB 4/29/96*

Key Words: TEST, VENTILATION, INSTRUMENTATION, REPORT, W-030, STARTUP

Abstract: Acceptance test report for construction functional testing of Project W-030 cooling systems and related instrumentation. Project W-030 provides a ventilation upgrade for the four Aging Waste Facility tanks. The Tank Farm Cooling System consists of four forced draft cooling towers, a chilled water system, and associated controls.

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Kate J. Bore *4/29/96*
Release Approval Date

Approved for Public Release

ACCEPTANCE TEST PROCEDURE - TANK FARM AND MISC. INSTRUMENTATION

FT Clifton
Westinghouse Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 613210 UC: 2030
Org Code: 8K240 Charge Code: NK201
B&R Code: EW3130010 Total Pages: 37

Key Words: Test, Ventilation, instrumentation, acceptance, W-030, startup

Abstract: Acceptance Test Procedure for construction functional testing of Project W-030 cooling systems and related instrumentation. Project W-030 provides a ventilation upgrade for the four Aging Waste Facility tanks.

KEN	STATION 33
CONTROLLED DOCUMENT	
DATE	JAN 31 1996
PROJECT NO.	W-030
REV.	REV 2

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[Signature] 1/19/96
Release Approval Date

DATE:	
STA: 4	
JAN 19 1996	

Release Stamp

Approved for Public Release

ACCEPTANCE TEST PROCEDURE WHC-SD-W030-ATR-004

TEST TITLE AY/AZ Tank Farm Cooling and Miscellaneous Instrumentation

LOCATION AY/AZ Tank Farm

PROJECT NUMBER W-030

WORK ORDER P48738 and P48739

PROJECT TITLE Tank Farm Ventilation Upgrade

Prepared By
ICF Kaiser Hanford Company
Richland, Washington

For Westinghouse Hanford Company
Subcontract WHC-380393

PROCEDURE APPROVAL

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1-16-96

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Date

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1-18-96

Date

D. D. D. D.

Safety

1-18-96

Date

M. D. Harding

Operations

1-19-96

Date

EXECUTION AND TEST APPROVAL

EXECUTED BY

_____ Test Director/Organization	_____ Date	_____ Test Operator/Organization	_____ Date
_____ Recorder/Organization	_____ Date		

WITNESSES

_____ Witness/Organization	_____ Date	_____ Title III Inspector	_____ Date
_____ Witness/Organization	_____ Date	_____ Witness/Organization	_____ Date

A-E APPROVAL

ICF Kaiser Hanford Company (ICF KH)

Without exceptions _____	With exceptions resolved _____	With exceptions outstanding _____
--------------------------	--------------------------------	-----------------------------------

_____ Acceptance Inspection	_____ Date	_____ Design Engineer	_____ Date
_____ Project Manager	_____ Date		

TEST APPROVAL AND ACCEPTANCE

Westinghouse Hanford Company)

Without exceptions _____	With exceptions resolved _____	With exceptions outstanding _____
--------------------------	--------------------------------	-----------------------------------

_____ Projects Department	_____ Date	_____ Quality Assurance	_____ Date
_____ Safety	_____ Date	_____ Operations	_____ Date

EXECUTION AND TEST APPROVAL

EXECUTED BY

<u><i>David M. Hayes</i></u> <u>ICF/KH</u>	<u>2/13/96</u>	<u><i>Frank Anderson</i></u>	<u>2-13-96</u>
Test Director/Organization	Date	Test Operator/Organization	Date
<u><i>Bruce Bels</i></u> <u>ICF KH</u>	<u>2-13-96</u>		
Recorder/Organization	Date		

WITNESSES

<u><i>M. D. Harding</i></u> <u>ETOPS</u>	<u>4-15-96</u>	<u><i>Bruce Bels</i></u>	<u>2-13-96</u>
Witness/Organization	Date	Title III Inspector	Date
<u><i>S.B. Cole</i></u>	<u>4/15/96</u>		
Witness/Organization	Date	Witness/Organization	Date

A-E APPROVAL

ICF Kaiser Hanford Company (ICF KH)

Without exceptions	With exceptions resolved	With exceptions outstanding
_____	_____	_____

<u><i>Bruce Bels</i></u>	<u>3-28-96</u>	<u><i>Mark A. Friedland</i></u>	<u>4/23/96</u>
Acceptance Inspection	Date	Design Engineer	Date
<u><i>J. Benoit</i></u>	<u>4/23/96</u>		
Project Manager	Date		

TEST APPROVAL AND ACCEPTANCE

Westinghouse Hanford Company)

Without exceptions	With exceptions resolved	With exceptions outstanding
_____	_____	<u>X</u>

<u><i>Dennis B. Cole</i></u>	<u>4/16/96</u>	<u><i>Frank M. Chapin</i></u>	<u>4-17-96</u>
Projects Department	Date	Quality Assurance	Date
<u><i>N/A</i></u>	_____	<u><i>M. D. Harding</i></u>	<u>4-15-96</u>
Safety	Date	Operations	Date

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	NOTE: At completion of test, enter pages added during performance of test to this Table of Contents.	

1 PURPOSE

This Acceptance Test Procedure (ATP) has been prepared in order to verify or demonstrate the following:

1.1 That the Contractor has performed the required calibration and wiring checks for all new instrumentation associated with:

1.1.1 Four packaged cooling towers and supply pumps.

1.1.2 One packaged process water chiller, condenser, and supply pumps.

1.2 Limited operational checks (including control devices) of:

1.2.1 Four packaged cooling towers and supply pumps.

1.2.2 One packaged process water chiller and supply pumps.

Local Control System testing will be accomplished by aligning the components as required for testing, actuating the local control switches, and verifying that the control signal is received at the component circuit breaker or motor starter. Manufacturer's representative will be consulted prior to energizing packaged equipment.

2 REFERENCES

2.1 DRAWINGS

H-2-131067, Sh 1, Rev 0	P&ID AY101EW Recirc Cond Cooling
H-2-131068, Sh 1, Rev 0	P&ID AY102EW Recirc Cond Cooling
H-2-131069, Sh 1, Rev 0	P&ID AZ101EW Recirc Cond Cooling
H-2-131070, Sh 1, Rev 0	P&ID AZ102EW Recirc Cond Cooling
H-2-131071, Sh 1, Rev 0	P&ID AZCW Vent Cond Cooling Sys
H-2-131357, Sh 1, Rev 0	Electrical Yard Plan & General Notes
H-2-131366, Sh 1, Rev 0	Electrical Elementary Diagram Recirc Bldg AY-101 & AY-102
H-2-131366, Sh 2, Rev 0	Electrical Elementary Diagram Recirc Bldg AZ-101 & AZ-102
H-2-131366, Sh 3, Rev 0	Electrical Elementary Diagram Evap Twr AY-101
H-2-131366, Sh 4, Rev 0	Electrical Elementary Diagram Evap Twr AY-102
H-2-131366, Sh 5, Rev 0	Electrical Elementary Diagram Evap Twr AZ-101
H-2-131366, Sh 6, Rev 0	Electrical Elementary Diagram Evap Twr AZ-102
H-2-131366, Sh 7, Rev 0	Electrical Elementary Diagram Chiller Pad

2.2 SPECIFICATIONS

W-030-C3, Rev. 0

Construction Specification for Tank Farm
Ventilation Upgrade

2.3 VENDOR INFORMATION (VI)

VI-22525

3 RESPONSIBILITIES

3.1 GENERAL

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

3.2 WHC PROJECT ENGINEER

- 3.2.1 Designates a Test Director.
- 3.2.2 Coordinates testing with 200-East Tank Farms Operations.
- 3.2.3 Acts as liaison between the participants in acceptance testing.
- 3.2.4 Distributes the approved testing schedule before start of testing.
- 3.2.5 Schedules and conducts a pretest kickoff meeting with test participants when necessary.
- 3.2.6 Notifies the persons supporting the test 2 days before the start of testing.
- 3.2.7 Schedules a dry run when necessary.
- 3.2.8 Notifies concerned parties when a change is made in the testing schedule.
- 3.2.9 Signs Execution and Test Approval page when test is approved and accepted.
- 3.2.10 Takes necessary action to clear exceptions to the test.
- 3.2.11 Signs Exception Form when exception has been resolved.
- 3.2.12 Provides a distribution list for the approved and accepted ATP.

3.3 TEST DIRECTOR

- 3.3.1 Coordinates and directs acceptance testing.
- 3.3.2 Confirms that field testing and inspection of the system or portion of the system to be tested has been completed.

- 3.3.3 Stops any test which, in his or her judgment, may cause damage to the system until the problem has been resolved.
- 3.3.4 After verifying there is no adverse impact, may alter the sequence in which systems or subsystems are tested.
- 3.3.5 Ensures that required environmental conditions are maintained.
- 3.3.6 If a test is to be suspended for a period of time, ensures that the system is left in a safe mode.
- 3.3.7 Before restarting suspended test, re verifies the test prerequisites.
- 3.3.8 Initiates Engineering Change Notices (ECNs) to document required changes to the ATP.
- 3.3.9 Reviews recorded data, discrepancies, and exceptions.
- 3.3.10 Obtains information or changes necessary to clear or resolve objections during the performance of the test.
- 3.3.11 Signs Execution and Test Approval page when test has been performed.
- 3.3.12 Signs Exception Form when exception has been resolved.
- 3.3.13 Obtains required signatures on the ATP Master prior to reproduction and distribution.
- 3.4 WITNESSES (Provided by Participating Organizations. One witness shall be a Title III acceptance inspector.)
 - 3.4.1 Witness the tests.
 - 3.4.2 Review results of testing.
 - 3.4.3 Assist the Test Director when requested.
 - 3.4.4 Sign Execution and Test Approval page when test has been performed.
 - 3.4.5 Sign Exception Form when exception has been resolved.
- 3.5 RECORDER (Provided by ICF KH)
 - 3.5.1 Prepares a Field copy from the ATP Master.
 - 3.5.2 Records names of all designated personnel on Field copy of ATP prior to start of testing.
 - 3.5.3 Records test instrument identification numbers and calibration expiration dates, as required.
 - 3.5.4 Initials and dates every test step on the Field copy as it is completed next to the step number or on a data sheet, when provided. Records test data. On data sheets where there is not room for both the initial and date, date may be entered at bottom of column.

- 3.5.5 Records objections and exceptions on an Exception form. Uses additional Exception forms as needed. Notifies the Test Director at time the objection is made.
- 3.5.6 Signs Execution and Test Approval page when test has been performed.
- 3.5.7 After test is finished, assigns alpha numeric page numbers to added data sheets and Exception forms. Records page numbers in the Table of Contents.
- 3.5.8 Transfers Field copy entries for each step to the Master in ink or type, signs, and dates. Transmits the completed Master to the Test Director for approval signature routing. Transmits the Field copy to Construction Document Control for inclusion in the official project file.
- 3.5.9 Signs Exception Form when exception has been resolved and transmits to Test Director.

3.6 TEST OPERATOR

- 3.6.1 Performs test under direction of the Test Director.
- 3.6.2 Provides labor, equipment, and test instruments required for performing tests which have not been designated as being provided by others.
- 3.6.3 Requests in writing from the Test Director those services, materials, or equipment that have been designated as being supplied by others.
- 3.6.4 Confirms that all equipment required for performing test will be available at the start of testing.
- 3.6.5 Signs the Execution and Test Approval page.

3.7 A-E ACCEPTANCE INSPECTION, DESIGN ENGINEER, AND PROJECT MANAGER

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

4 CHANGE CONTROL

Test procedure editorial changes required during testing may be accommodated as exceptions in the released ATP and Test Report, if the changes do not affect operating facility safety, function, or performance and do not compromise or influence test data. Requirement changes, changes to acceptance criteria, or changes to Danger, Caution, Special Precautions, or other safety or environmental instructions must be processed on ECNs in accordance with company procedures, and if a need for such a change is discovered in the course of running the test, the test shall be stopped until the ECN is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

5 EXECUTION

5.1 OCCUPATIONAL SAFETY AND HEALTH

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

5.2 PERFORMANCE

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

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

6 EXCEPTIONS

6.1 GENERAL

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

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

6.2 RECORDING

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

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

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

6.3 RETEST/RESOLUTION

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

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

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

6.4 APPROVAL AND ACCEPTANCE

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

- 6.4.1 Retest Approved and Accepted: Applicable when Retest Execution and Acceptance section is completed.
- 6.4.2 Exception Accepted-As-Is: Requires detailed explanation.
- 6.4.3 Other: Requires detailed explanation.

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

- 6.5 DISTRIBUTION

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

7 PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS

7.1 PREREQUISITES

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

- BB 2-27-96 7.1.1 The recirculating condensation cooling systems have been inspected for compliance with construction documents.
- BB 2-27-96 7.1.2 The AZCW ventilation condensation cooling system has been inspected for compliance with construction documents.
- BB 2-27-96 7.1.3 Reference documents (including this ATP) have been verified for correct revision number and outstanding ECNs.
- BB 2-27-96 7.1.4 A Job Safety Analysis (JSA) has been prepared, read and signed, and a Prejob Safety Meeting has been conducted.
- BB 2-27-96 7.1.5 A prejob walkdown of systems being tested has been conducted.
- BB 2-27-96 7.1.6 Test instruments have a valid calibration stamp attached. Test instrument identification numbers and calibration expiration dates have been recorded in Para 7.2.
- BB 2-27-96 7.1.7 120 V ac power is available. See Drawing H-2-131366, Sh 1 and 2.
- BB 2-27-96 7.1.8 Ice and hot water are available.
- BB 2-27-96 7.1.9 Verification of required testing (meggering and continuity checks of all associated power cables and instrument and control cables) has been completed.
- BB N/A 7.1.10 RWP has been approved by WHC Operations if required.
2-27-96

7.2 EQUIPMENT/INSTRUMENTS

Supplied by Test Operator unless otherwise noted.

- 7.2.1 Digital Multimeter (DMM): 4-1/2 digit or better 0.5% minimum accuracy (ac volts).

Manufacturer Flyke Model No. 83 Serial No. 61200721

Calibration Date 12-21-95 Expiration Date 12-21-96

- ~~7.2.2~~ ~~Process Instrument Calibrator (PIC): Output 4-20 mA, 0-5 V, input 4-20 mA, 0-5 V, accuracy ± 0.01 mA, 0.1 V.~~

~~Manufacturer _____ Model No. _____ Serial No. _____~~

~~Calibration Date _____ Expiration Date _____~~

- 7.2.3 Container: To hold water for leak or level detector tests 4-inch depth.
- 7.2.4 Thermometer.
- 7.2.5 Shorting Switches.

8 AY RECIRCULATING CONDENSATION COOLING TEST

This test will demonstrate the integrity of the instruments and equipment associated with the tank recirculating condensation cooling systems located at the AY evaporator pad. (Reference Drawings H-2-131067, Sh 1, H-2-131068, Sh 1, and H-2-131357, Sh 1)

8.1 FLUID COOLER SPRAY PUMP AY101-EW-SP-1 (Reference Drawing H-2-131366, Sh 3)

- BB 2-27-96 8.1.1 Verify that the disconnect switch to Fluid Cooler UIC-AY101EWT-1 is OPEN or OFF.
- BB 2-27-96 8.1.2 Verify that Spray Pump Handswitch HS-AY101EWSP-1A is in the ^{ECN 198} ~~STOP~~ OFF position.
- BB 2-27-96 8.1.3 Verify that Fluid Cooler Fan Handswitch HS-AY101EWT-1A1 is in the ~~STOP~~ position.
^{OFF ECN 198}
- BB 2-27-96 8.1.4 Verify that Pan Heater Handswitch HS-AY101EWT-1A2 is in the OFF position.
- BB 2-27-96 8.1.5 Verify that Damper Actuator Handswitch HS-AY101EWT-1A3 is in the AUTO position.
- BB 2-27-96 8.1.6 Verify that sump water make-up Isolation Valve HV-AY101RW-1 is CLOSED.
- BB 2-27-96 8.1.7 Verify that the spray pump sump is dry or water level is below the LSL-AY101EWT-1 level probes.
- BB 3-4-96 8.1.8 ^{Delete ex #1} ~~Set timer of fan-on-Delay Relay 2MS, to 20 seconds at control panel UIC-AY101EWT-1.~~
- BB 2-27-96 8.1.9 Disconnect Motor Leads AY101EWT1-1T1, AY101EWT1-1T2, and AY101EWT1-1T3 from spray pump.
- BB 2-27-96 8.1.10 Disconnect Power Leads AY101EWT1-3T1, AY101EWT1-3T2, and AY101EWT1-3T3 from pan heater.
- BB 2-27-96 8.1.11 Install shorting switches at UIC-AY101EWT-1 between LLC level probe terminals as follows:
 - BB 2-27-96 8.1.11.1 Terminals "G" and "H," Switch "H" in the ON or CLOSED position.
 - BB 2-27-96 8.1.11.2 Terminals "G" and "L," Switch "L" in the ON or CLOSED position.
 - BB 2-27-96 8.1.11.3 Terminals "G" and LLCO, Switch LLCO in the ON or CLOSED position.
- NOTE: Shorting switches to remain in place until all tests associated with Fluid Cooler UIC-AY101EWT-1 have been completed.
- ~~BB 2-27-96 8.1.12 Connect a DMM between UIC-AY101EWT-1 Terminals 2 and 4.~~ ^{Delete ECN 198}
- BB 2-27-96 8.1.13 CLOSE disconnect switch (see Step 8.1.1).
- BB 2-27-96 8.1.14 ^{ECN 198} ~~13~~ Move Spray Pump Handswitch HS-AY101EWSP-1A to ^{The Local ECN 198} START position.

- ~~contactor 1 ms closes ECU 198~~
- ~~BB 2-27-96~~ 8.1.15¹⁴ Verify DMM reads line voltage (120 V ac nominal).
~~contactor 1 ms opens ECU 198~~
- ~~BB 2-27-96~~ 8.1.16 Verify spray pump motor starter is ON.
- ~~BB 2-27-96~~ 8.1.17¹⁶ Move Spray Pump Handswitch HS-AY101EWSP-1A to ~~STOP~~ ^{the off} ECU 198.
- ~~BB 2-27-96~~ 8.1.18 Verify DMM reads 0 V ac. ~~contactor 1 ms closes ECU 198~~
- ~~BB 2-27-96~~ 8.1.19¹⁷ Verify spray pump motor starter is OFF. ~~Delete ECU 198~~
- ~~BB 2-27-96~~ 8.1.20¹⁷ Move Spray Pump Handswitch HS-AY101EWSP-1A to ~~START~~ ^{the local} ECU 198.
~~"H" ECU 198~~
- ~~BB 2-27-96~~ 8.1.21¹⁹ Move ILC Shorting Switch ~~LL60~~ between terminals "B" and LL60 to the OFF or OPEN position.
 Verify contactor 1 ms remains closed ECU 198
- ~~BB 2-27-96~~ 8.1.22²¹ ~~Verify DMM reads 0 V ac. move ILC Shorting switch "L" to the off position~~
- ~~BB 2-27-96~~ 8.1.22 Verify contactor 1 ms opens ^{the ECU 198}
- ~~BB 2-27-96~~ 8.1.23 Return ILC Shorting Switch ~~LL60~~ ^{"L"} to ON or CLOSED position.
- ~~BB 2-27-96~~ 8.1.24 Verify DMM reads line voltage. ~~contactor 1 ms remains open~~
- ~~BB 2-27-96~~ 8.1.25²⁸ move ILC Shorting switch "H" to the on position ECU 198
- ~~BB 2-27-96~~ 8.1.25²⁸ Open disconnect switch. (see step 8.1.12)
- ~~BB 2-27-96~~ 8.1.27 move spray pump handswitch HS-AY101EWSP-1A to the off position
- ~~BB 2-27-96~~ 8.1.26 Disconnect DMM from UIC terminals 2 and 4. ECU 198
 Verify contactor 1 ms closes
- 8.2 FLUID COOLER FAN HS-AY101EWT-1A1 (Reference Drawing H-2-131366, Sh 3)
- ~~BB 2-27-96~~ 8.2.1 Verify that the disconnect switch to Fluid Cooler UIC-AY101EWT-1 is OPEN or OFF.
- ~~BB 2-27-96~~ 8.2.2 Verify that Spray Pump Handswitch HS-AY101EWSP-1A is in the ~~STOP~~ ^{off} ECU 198 position.
- ~~BB 2-27-96~~ 8.2.3 Verify that Fluid Cooler Fan Handswitch HS-AY101EWT-1A1 is in the ~~STOP~~ ^{off} ECU 198 position.
- ~~BB 2-27-96~~ 8.2.4 Verify that Pan Heater Handswitch HS-AY101EWT-1A2 is in the OFF position.
- ~~BB 2-27-96~~ 8.2.5 Verify that Damper Actuator Handswitch HS-AY101EWT-1A3 is in the AUTO position.
- ~~BB 2-27-96~~ 8.2.6 Verify that sump water make-up Isolation Valve HV-AY101RW-1 is CLOSED.
~~Delete~~
- ~~BB 2-4-96~~ 8.2.7 ~~Set timer of fan on Delay Relay 2MS, to 20 seconds at Control Panel UIC-AY101EWT-1.~~
- ~~BB 2-27-96~~ 8.2.8 Set inlet fan damper temperature controller range indicator at 60 °F using the set point adjusting knob on top of the controller.
- ~~BB 2-27-96~~ 8.2.9 Set inlet fan damper temperature controller throttling range to minimum position using the adjusting screw next to the set point adjustment knob.

- BB 2-27-96 8.2.10 Remove inlet damper temperature element from thermowell and place temperature element in container of 75 °F or greater, water.
- BB 2-27-96 8.2.12 Move spray pump handswitch HS-AY101EWSP-1A to the Local position
- BB 2-27-96 8.2.11 ~~Connect a DMM between Terminals 2 and 11. ECU 198~~
- BB 2-27-96 8.2.12.11 CLOSE disconnect switch (see Step 8.2.1).
- BB 2-27-96 8.2.13 Move Cooling Fan Handswitch HS-AY101EWT-1A1 to ^{Local} ~~START~~ position.
- BB 3-4-96 8.2.14 Verify ^{That contactor 2ms closes ECU 198} ~~DMM reads line voltage (120 V ac nominal) after approximately 20 seconds. Ex #2~~
- BB 2-27-96 8.2.15 Verify cooling fan motor is rotating.
- BB 2-27-96 8.2.16 Verify that inlet fan damper position indicator is in the OPEN position.
- BB 2-27-96 8.2.17 ^{ECU 198} Place temperature element in a container of cold water (less than 60°F) ~~Adjust inlet damper temperature controller range indicator to 10 °F.~~
- BB 2-27-96 8.2.18 Verify that inlet fan damper position indicator moves to the CLOSED position.
- BB 2-27-96 8.2.19 ^{ECU 198} Verify ~~DMM reads 0 V ac.~~ contactor 2ms opens
- BB 2-27-96 8.2.20 Verify cooling fan motor stops rotating.
- BB 2-27-96 8.2.21 ^{Place temperature element in a container of 75 °F or hotter water} ~~Adjust inlet fan damper temperature controller range indicator to 60 °F. ECU 198~~
- BB 2-27-96 8.2.22 Verify that inlet fan damper position indicator is in the OPEN position.
- BB 2-27-96 8.2.23 ^{ECU 198} Verify ~~DMM reads line voltage.~~ contactor 2ms closes
- BB 2-27-96 8.2.24 Move Fan Control Handswitch HS-AY101EWT-1A1 to the ^{off} ~~STOP~~ position.
- BB 2-27-96 8.2.25 ^{ECU 198} Verify ~~DMM reads 0 V ac.~~ contactor 2ms opens
- BB 2-27-96 8.2.26 OPEN disconnect switch.
- BB 2-27-96 8.2.27 ^{ECU 198} ~~move spray pump handswitch to the off position~~ Disconnect DMM from UIC Terminals 2 and 11.
- BB 2-27-96 8.2.28 Remove inlet fan damper temperature element from container of water, dry element, and reinstall element in thermowell.

8.3 FLUID COOLER PAN HEATERS (Reference Drawing H-2-131366, Sh 3)

- BB 2-27-96 8.3.1 Verify disconnect switch of fluid cooler is OPEN or OFF.
- BB 2-27-96 8.3.2 Verify that Spray Pump Handswitch HS-AY101EWSP-1A is in the ^{ECU 198} ~~STOP~~ ^{off} position.
- BB 2-27-96 8.3.3 Verify that Sump Water Make-up Isolation Valve HV-AY101RW-1 is CLOSED.

- ~~8.3.4~~ 8.3.4 Verify that the spray pump sump is dry or water level is below the LSL-AY101EWT-1 level probes.
- ~~8.3.5~~ 8.3.5 Remove cover of pan heater thermostat housing and adjust thermostat to ~~maximum~~ ^{minimum exception #2} temperature setting (150 degrees).
Delete ECU 198 0°F
- ~~8.3.6~~ ~~Connect a DMM between Control Panel Terminals 2 and 20.~~
Delete ECU 198
- ~~8.3.7~~ 8.3.7 CLOSE disconnect switch.
- ~~8.3.8~~ 8.3.8 Move the heater control handswitch to the ON position.
contactor 1C closes ECU 198
- ~~8.3.9~~ 8.3.9 Verify DMM reads line voltage (120 V ac nominal).
- ~~8.3.10~~ 8.3.10 Move "1LC" Switch "LLCO" to the OFF or OPEN position.
- ~~8.3.11~~ 8.3.11 Verify ~~DMM reads 0 V ac.~~ ^{ECU 198} contactor 1C opens
- ~~8.3.12~~ 8.3.12 Move "1LC" Switch "LLCO" to the ON or CLOSED position.
- ~~8.3.13~~ 8.3.13 Verify ~~DMM reads line voltage.~~ ^{ECU 198} contactor 1C closes
- ~~8.3.14~~ 8.3.14 Adjust pan heater thermostat to ~~minimum~~ ^{maximum ex #3} setting (0 °F).
Delete ECU 198 150
- ~~8.3.15~~ 8.3.15 Verify ~~DMM reads 0 V ac.~~ ^{ECU 198} contactor 1C opens
- ~~8.3.16~~ 8.3.16 Adjust pan heater thermostat to ~~maximum~~ ^{minimum ex #2} setting (150 °F).
Delete ECU 198
- ~~8.3.17~~ 8.3.17 Verify ~~DMM reads line voltage.~~ ^{ECU 198} contactor 1C closes
- ~~8.3.18~~ 8.3.18 Move heater control handswitch to the OFF position.
- ~~8.3.19~~ 8.3.19 Verify ~~DMM reads 0 V ac.~~ ^{ECU 198} contactor 1C opens
- ~~8.3.20~~ 8.3.20 OPEN disconnect switch.
- ~~8.3.21~~ ~~Disconnect DMM.~~ Delete ECU 198
- ~~8.3.22~~ 8.3.22 Adjust pan heater thermostat to 40 °F setting and install thermostat housing cover.
- 8.4 FLUID COOLER MAKE-UP WATER SOLENOID VALVE EV-AY101EWT-1A1 (Reference Drawing H-2-131366, Sh 3)
- ~~8.4.1~~ 8.4.1 Verify that the disconnect switch to Fluid Cooler UIC-AY101EWT-1 is OPEN or OFF.
- ~~8.4.2~~ 8.4.2 Verify that Spray Pump Handswitch HS-AY101EWSP-1A is in the ~~STOP~~ ^{off} position.
Delete ECU 198
- ~~8.4.3~~ 8.4.3 Verify that Sump Water Make-up Isolation Valve HV-AY101RW-1 is CLOSED.
- ~~8.4.4~~ 8.4.4 Verify that the spray pump sump is dry or the water level is below the LSL-AY101EWT-1 level probes.

- BB 2-27-96 8.4.5 CLOSE disconnect switch (see Step 8.4.1).
- BB 2-27-96 8.4.6 Verify water make-up Solenoid Valve EV-AY101EWT-1A1 is DE-ENERGIZED.
- BB 2-27-96 8.4.7 Move ILC Shorting Switch "H" to the OFF or OPEN position.
- BB 2-27-96 8.4.8 Verify water make-up Solenoid Valve EV-AY101EWT-1A1 is still DE-ENERGIZED.
- BB 2-27-96 8.4.9 Move ILC Shorting Switch "L" to the OFF or OPEN position.
- BB 2-27-96 8.4.10 Verify water make-up solenoid valve is ENERGIZED (Shorting Switch "L" must remain OFF or OPEN for at least 6 seconds before ILC energizes the valve).
- BB 2-27-96 8.4.11 Move ILC Shorting Switch "L" to the ON or CLOSED position.
- BB 2-27-96 8.4.12 Verify water make-up solenoid valve is still ENERGIZED.
- BB 2-27-96 8.4.13 Move ILC Shorting Switch "H" to the ON or CLOSED position.
- BB 2-27-96 8.4.14 Verify water make-up solenoid valve is DE-ENERGIZED (Shorting Switch "H" must remain ON or CLOSED for at least 6 seconds before ILC DE-ENERGIZES the valve).
- BB 2-27-96 8.4.15 OPEN disconnect switch (see Step 8.4.1).
- BB 2-27-96 8.4.16 Remove shorting switches at UIC-AY101EWT-1 between ILC level probe.
- BB 2-27-96 8.4.17 Reconnect Motor Leads AY101EWT1-1T1, AY101EWT1-1T2, and AY101EWT1-1T3 to spray pump (see Step 8.1.9).
- BB 2-27-96 8.4.18 Reconnect Power Leads AY101EWT1-3T1, AY101EWT1-3T2, and AY101EWT1-3T3 to pan heater (see Step 8.1.10).

8.5 RECIRCULATION PUMP AY101-EW-P-1A (Reference Drawing H-2-131366, Sh 3)

- BB 2-27-96 8.5.1 Verify that the disconnect switch to Recirculation Pump AY101-EW-P-1A is OPEN or OFF.
- BB 2-27-96 8.5.2 Disconnect Motor Leads AY101EWP1A-T1, AY101EWP1A-T2, and AY101EWP1A-T3 from Recirculation Pump AY101-EW-P-1A.
- BB 2-27-96 8.5.3 ^{ECN 148} Close disconnect switch.
- BB 2-27-96 8.5.4 ^{ECN 148} Place HS-AY101EWP-1A in the STOP position.
- BB 2-27-96 8.5.5 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 8.5.6 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 8.5.7 Place HS-AY101EWP-1A in the START position.
- BB 2-27-96 8.5.8 ^{contactor m1 is closed ECN 148} Verify ~~Pump AY101-EW-P-1A motor starter is ON.~~
- BB 2-27-96 8.5.9 Verify that the green light for the recirculation pump is OFF.

- BB 2-27-96 8.5.10 Verify that the red light for the recirculation pump is ON.
- BB 2-27-96 8.5.11 Place HS-AY101EWP-1A in the STOP position.
- BB 2-27-96 8.5.12 Verify ^{contactor m1 is open ECN 198} ~~Pump AY101-EW-P-1A motor starter is OFF.~~
- BB 2-27-96 8.5.13 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 8.5.14 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 8.5.15 Open disconnect switch.
- BB 2-27-96 8.5.16 Reconnect Motor Leads AY101EWP1A-T1, AY101EWP1A-T2, and AY101EWP1A-T3 to recirculation pump.

8.6. RECIRCULATION PUMP AY101-EW-P-1B (Reference Drawing H-2-131366, Sh 3)

- BB 2-27-96 8.6.1 Verify that the disconnect switch to Recirculation Pump AY101-EW-P-1B is OPEN or OFF.
- BB 2-27-96 8.6.2 Disconnect Motor Leads AY101EWP1B-T1, AY101EWP1B-T2, and AY101EWP1B-T3 from Recirculation Pump AY101-EW-P-1B.
- BB 2-27-96 8.6.2⁴ Close disconnect switch.
- BB 2-27-96 8.6.2³ Place HS-AY101EWP-1B in the STOP position.
- BB 2-27-96 8.6.5 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 8.6.6 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 8.6.7 Place HS-AY101EWP-1B in the START position.
- BB 2-27-96 8.6.8 Verify ^{contactor m2 is closed ECN 198} ~~Pump AY101-EW-P-1B motor starter is ON.~~
- BB 2-27-96 8.6.9 Verify that the green light for the recirculation pump is OFF.
- BB 2-27-96 8.6.10 Verify that the red light for the recirculation pump is ON.
- BB 2-27-96 8.6.11 Place HS-AY101EWP-1B in the STOP position.
- BB 2-27-96 8.6.12 Verify ^{contactor m2 is open ECN 198} ~~Pump AY101-EW-P-1B motor starter is OFF.~~
- BB 2-27-96 8.6.13 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 8.6.14 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 8.6.15 Open disconnect switch.
- BB 2-27-96 8.6.16 Reconnect Motor Leads AY101EWP1B-T1, AY101EWP1B-T2, and AY101EWP1B-T3 to recirculation pump.

8.7 FLUID COOLER SPRAY PUMP AY102-EW-SP-1 (Reference Drawing H-2-131366, Sh ⁴~~3~~ ECN 198)

- BB 2-27-96 8.7.1 Verify that the disconnect switch to Fluid Cooler UIC-AY102EWT-1 is OPEN or OFF.

- ECW 198
- ~~BB 227-96~~ 8.7.2 Verify that Spray Pump Handswitch HS-AY102EWSP-1A is in the ~~STOP~~ OFF position.
- ~~BB 227-96~~ 8.7.3 Verify that Fluid Cooler Fan Handswitch HS-AY102EWT-1A1 is in the ~~STOP~~ OFF position.
- ~~BB 227-96~~ 8.7.4 Verify that Pan Heater Handswitch HS-AY102EWT-1A2 is in the OFF position.
- ~~BB 227-96~~ 8.7.5 Verify that Damper Actuator Handswitch HS-AY102EWT-1A3 is in the AUTO position.
- ~~BB 227-96~~ 8.7.6 Verify that sump water make-up Isolation Valve HV-AY102RW-1 is CLOSED.
- ~~BB 227-96~~ 8.7.7 Verify that the spray pump sump is dry or water level is below the LSL-AY102EWT-1 level probes.
- ~~BB 227-96~~ 8.7.8 ~~Delete EX-1~~
Set timer of fan-on-Delay-Relay 2MS, to 20 seconds at control panel UIC-AY102EWT-1.
- ~~BB 227-96~~ 8.7.9 Disconnect Motor Leads AY102EWT1-1T1, AY102EWT1-1T2, and AY102EWT1-1T3 from spray pump.
- ~~BB 227-96~~ 8.7.10 Disconnect Power Leads AY102EWT1-3T1, AY102EWT1-3T2, and AY102EWT1-3T3 from pan heater.
- ~~BB 227-96~~ 8.7.11 Install shorting switches at UIC-AY102EWT-1 between 1LC level probe terminals as follows:
- ~~BB 227-96~~ 8.7.11.1 Terminals "G" and "H," Switch "H" in the ON or CLOSED position.
- ~~BB 227-96~~ 8.7.11.2 Terminals "G" and "L," Switch "L" in the ON or CLOSED position.
- ~~BB 227-96~~ 8.7.11.3 Terminals "G" and LLCO, Switch LLCO in the ON or CLOSED position.
- NOTE: Shorting switches to remain in place until all tests associated with Fluid Cooler UIC-AY102EWT-1 have been completed.
- ~~BB 227-96~~ ~~8.7.12~~ ~~Delete ECW 198~~
~~Connect a DMM between UIC-AY102EWT-1 Terminals 2 and 4.~~
- ~~BB 227-96~~ 8.7.13¹² CLOSE disconnect switch (see Step 8.7.1). ^{ECW 198}
- ~~BB 227-96~~ 8.7.14¹³ Move Spray Pump Handswitch HS-AY102EWSP-1A to ~~START~~ position. ^{The Local}
- ~~BB 227-96~~ 8.7.15¹⁴ Verify ~~DMM reads line voltage (120 V ac nominal)~~. ^{ECW 198}
~~BB 227-96~~ 8.7.16 ~~Verify spray pump motor starter is ON.~~ ^{ECW 198}
~~BB 227-96~~ 8.7.17¹⁵ Move Spray Pump Handswitch HS-AY102EWSP-1A to ~~STOP~~ position. ^{The off}
- ~~BB 227-96~~ ~~8.7.18~~ ~~Verify DMM reads 0 V ac. Delete~~ ^{ECW 198}
- ~~BB 227-96~~ 8.7.19¹⁸ Verify spray pump motor starter is OFF. ^{ECW 198}
- ~~BB 227-96~~ 8.7.20¹⁷ Move Spray Pump Handswitch HS-AY102EWSP-1A to ~~START~~ position. ^{ECW 198}

- "H" ECU 198
- ~~BB 2-27-96~~ 8.7.21¹⁹ Move ILC Shorting Switch ~~LL60 between terminals "B" and LL60~~ to the OFF or OPEN position. ECU 198
- ~~BB 2-27-96~~ 8.7.20 Verify contactor 1ms remains closed ECU 198
- ~~BB 2-27-96~~ 8.7.22²¹ Verify ~~DMM reads 0 V ac~~. move ILC shorting switch "L" to the off position
- ~~BB 2-27-96~~ 8.7.22 Verify contactor 1ms opens "L" The ECU 198
- ~~BB 2-27-96~~ 8.7.23 Return ILC Shorting Switch ~~LL60~~ to ON or CLOSED position. ECU 198
- ~~BB 2-27-96~~ 8.7.24 Verify ~~DMM reads line voltage~~. Contactor 1ms remains open ECU 198
- ~~BB 2-27-96~~ 8.7.25 move ILC Shorting Switch "H" to the ON position
- ~~BB 2-27-96~~ 8.7.25²⁸ Open disconnect switch. (See step 8.7.12) ECU 198
- ~~BB 2-27-96~~ 8.7.27 move spray pump handswitch HS-AY102EWSP-1A to the off position
- ~~BB 2-27-96~~ 8.7.26 Disconnect DMM from UIC Terminals 2 and 4. ECU 198
- Verify contactor 1ms closes
- 8.8 FLUID COOLER FAN HS-AY102EWT-1A1 (Reference Drawing H-2-131366, Sh⁴)
- ~~BB 2-27-96~~ 8.8.1 Verify that the disconnect switch to Fluid Cooler UIC-AY102EWT-1 is OPEN or OFF.
- ~~BB 2-27-96~~ 8.8.2 Verify that Spray Pump Handswitch HS-AY102EWSP-1A is in the STOP or OFF position.
- ~~BB 2-27-96~~ 8.8.3 Verify that Fluid Cooler Fan Handswitch HS-AY102EWT-1A1 is in the STOP or OFF position.
- ~~BB 2-27-96~~ 8.8.4 Verify that Pan Heater Handswitch HS-AY102EWT-1A2 is in the OFF position.
- ~~BB 2-27-96~~ 8.8.5 Verify that Damper Actuator Handswitch HS-AY102EWT-1A3 is in the AUTO position.
- ~~BB 2-27-96~~ 8.8.6 Verify that the sump water make-up Isolation Valve HV-AY102RW-1 is CLOSED.
- ~~BB 3-4-96~~ 8.8.7 ~~Delete Ex #1~~
Set timer of fan-on-Delay Relay ZMS, to 20 seconds at Control Panel UIC-AY102EWT-1.
- ~~BB 2-27-96~~ 8.8.8 Set inlet fan damper temperature controller range indicator at 60 °F using the set point adjusting knob on top of the controller.
- ~~BB 2-27-96~~ 8.8.9 Set inlet fan damper temperature controller throttling range to minimum position using the adjusting screw next to the set point adjustment knob.
- ~~BB 2-27-96~~ 8.8.10 Remove inlet damper temperature element from thermowell and place temperature element in container of 75 °F or greater, water.
- ~~BB 2-27-96~~ 8.8.11¹² move spray pump handswitch HS-AY102EWSP-1A to the local position
- ~~BB 2-27-96~~ 8.8.11¹² Connect a DMM between Terminals 2 and 11. ECU 198
- ~~BB 2-27-96~~ 8.8.12¹¹ CLOSE disconnect switch (see Step 8.7.1).
- ~~BB 2-27-96~~ 8.8.13 Move Cooling Fan Handswitch HS-AY102EWT-1A1 to START position. the local that contactor 2ms closes ECU 198
- ~~BB 3-4-96~~ 8.8.14 Verify DMM reads line voltage (120 V ac nominal) after approximately 20 seconds. Delete Ex #1
- ~~BB 2-27-96~~ 8.8.15 Verify cooling fan motor is rotating.

- ~~BB 2-27-96~~ 8.8.16 Verify that inlet fan damper position indicator is in the OPEN position.
ECW 198
Place temperature element in a container of cold water (Less than 60°F)
- ~~BB 2-27-96~~ 8.8.17 ~~Adjust inlet damper temperature controller range indicator to 10°F.~~
- ~~BB 2-27-96~~ 8.8.18 Verify that inlet fan damper position indicator moves to the CLOSED position.
- ~~BB 2-27-96~~ 8.8.19 Verify ~~DMM reads 0 V ac.~~ ^{ECW 198} Contactor 2ms opens
- ~~BB 2-27-96~~ 8.8.20 Verify cooling fan motor stops rotating. ^{ECW 198}
~~Place temperature element in a container of water 75°F or hotter~~
- ~~BB 2-27-96~~ 8.8.21 ~~Adjust inlet fan damper temperature controller range indicator to 60°F.~~
- ~~BB 2-27-96~~ 8.8.22 Verify that inlet fan damper position indicator is in the OPEN position.
- ~~BB 2-27-96~~ 8.8.23 Verify ~~DMM reads line voltage.~~ ^{ECW 198} contactor 2ms closes
- ~~BB 2-27-96~~ 8.8.24 Move Fan Control Handswitch HS-AY102EWT-1A1 to the ~~STOP~~ ^{off} position.
- ~~BB 2-27-96~~ 8.8.25 Verify ~~DMM reads 0 V ac.~~ ^{ECW 198} contactor 2ms opens
- ~~BB 2-27-96~~ 8.8.26 OPEN disconnect switch. ^{ECW 198}
~~move spray pump handswitch to the off position~~
- ~~BB 2-27-96~~ 8.8.27 ~~Disconnect DMM from UIC Terminals 2 and 11.~~
- ~~BB 2-27-96~~ 8.8.28 Remove inlet fan damper temperature element from container of water, dry element, and reinstall element in thermowell.
- 8.9 FLUID COOLER PAN HEATERS (Reference Drawing H-2-131366, Sh ⁴/₃)
- ~~BB 2-27-96~~ 8.9.1 Verify disconnect switch of fluid cooler is OPEN or OFF.
- ~~BB 2-27-96~~ 8.9.2 Verify that Spray Pump Handswitch HS-AY102EWSP-1A is in the ~~STOP~~ ^{off} position.
- ~~BB 2-27-96~~ 8.9.3 Verify that Sump Water Make-up Isolation Valve HV-AY102RW-1 is CLOSED.
- ~~BB 2-27-96~~ 8.9.4 Verify that the spray pump sump is dry or water level is below the LSL-AY102EWT-1 level probes.
- ~~BB 3-4-96~~ 8.9.5 Remove cover of pan heater thermostat housing and adjust thermostat to ~~maximum~~ ^{minimum} temperature setting (150 degrees). ^{0°F}
- ~~BB 2-27-96~~ ~~8.9.6~~ ~~Connect a DMM between Control Panel Terminals 2 and 20.~~ ^{Delete ECW 198}
- ~~BB 2-27-96~~ 8.9.7 CLOSE disconnect switch.
- ~~BB 2-27-96~~ 8.9.8 Move the heater control handswitch to the ON position.
^{contactor IC closes ECW 198}
- ~~BB 2-27-96~~ 8.9.9 Verify ~~DMM reads line voltage (120 V ac nominal).~~
- ~~BB 2-27-96~~ 8.9.10 Move "ILC" Switch "LLCO" to the OFF or OPEN position.

- ~~BB 2-27-96~~ 8.9.1110 Verify ~~DDM reads 0 V ac.~~ contactor 1C opens
- ~~BB 2-27-96~~ 8.9.1211 Move "1LC" Switch "LLCO" to the ON or CLOSED position.
- ~~BB 2-27-96~~ 8.9.1312 Verify ~~DDM reads line voltage.~~ contactor 1C closes
- ~~BB 3-4-96~~ 8.9.1413 Adjust pan heater thermostat to ~~minimum~~ setting (40°F). ^{maximum 2x3 150} ECN 198
- ~~BB 2-27-96~~ 8.9.1514 Verify ~~DDM reads 0 V ac.~~ contactor 1C opens
- ~~BB 3-4-96~~ 8.9.1615 Adjust pan heater thermostat to ~~maximum~~ setting (150°F). ^{minimum 2x2 0°F}
- ~~BB 2-27-96~~ 8.9.1716 Verify ~~DDM reads line voltage.~~ contactor 1C closes
- ~~BB 2-27-96~~ 8.9.1817 Move heater control handswitch to the OFF position.
- ~~BB 2-27-96~~ 8.9.1918 Verify ~~DDM reads 0 V ac.~~ contactor 1C opens
- ~~BB 2-27-96~~ 8.9.2019 OPEN disconnect switch.
- ~~8.9.21~~ ^{Delete ECN 198} Disconnect DDM.
- ~~BB 2-27-96~~ 8.9.2220 Adjust pan heater thermostat to 40 °F setting and install thermostat housing cover.
- 8.10 FLUID COOLER MAKE-UP WATER SOLENOID VALVE EV-AY102EWT-1A1 (Reference Drawing H-2-131366, Sh 3)
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- ~~BB 2-27-96~~ 8.10.1 Verify that the disconnect switch to Fluid Cooler UIC-AY102EWT-1 is OPEN or OFF.
- ~~BB 2-27-96~~ 8.10.2 Verify that Spray Pump Handswitch HS-AY102EWSP-1A is in the ~~STOP~~ off position.
- ~~BB 2-27-96~~ 8.10.3 Verify that Sump Water Make-up Isolation Valve HV-AY102RW-1 is CLOSED.
- ~~BB 2-27-96~~ 8.10.4 Verify that the spray pump sump is dry or the water level is below the LSL-AY102EWT-1 level probes.
- ~~BB 2-27-96~~ 8.10.5 CLOSE disconnect switch (see Step 8.10.1).
- ~~BB 2-27-96~~ 8.10.6 Verify water make-up Solenoid Valve EV-AY102EWT-1A1 is DE-ENERGIZED.
- ~~BB 2-27-96~~ 8.10.7 Move 1LC Shorting Switch "H" to the OFF or OPEN position.
- ~~BB 2-27-96~~ 8.10.8 Verify water make-up Solenoid Valve EV-AY102EWT-1A1 is still DE-ENERGIZED.
- ~~BB 2-27-96~~ 8.10.9 Move 1LC Shorting Switch "L" to the OFF or OPEN position.
- ~~BB 2-27-96~~ 8.10.10 Verify water make-up solenoid valve is ENERGIZED (Shorting Switch "L" must remain OFF or OPEN for at least 6 seconds before 1LC energizes the valve).
- ~~BB 2-27-96~~ 8.10.11 Move 1LC Shorting Switch "L" to the ON or CLOSED position.

- ~~BB 2-27-96~~ 8.10.12 Verify water make-up solenoid valve is still ENERGIZED.
- ~~BB 2-27-96~~ 8.10.13 Move ILC Shorting Switch "H" to the ON or CLOSED position.
- ~~BB 2-27-96~~ 8.10.14 Verify water make-up solenoid valve is DE-ENERGIZED (Shorting Switch "H" must remain ON or CLOSED for at least 6 seconds before ILC DE-ENERGIZES the valve).
- ~~BB 2-27-96~~ 8.10.15 OPEN disconnect switch (see Step 8.10.11).
- ~~BB 2-27-96~~ 8.10.16 Remove shorting switches at UIC-AY102EWT-1 between ILC level probe.
- ~~BB 2-27-96~~ 8.10.17 Reconnect Motor Leads AY102EWT1-1T1, AY102EWT1-1T2, and AY102EWT1-1T3 to spray pump (see Step 8.10.9). ECN 198
- ~~BB 2-27-96~~ 8.10.18 Reconnect Power Leads AY102EWT1-3T1, AY102EWT1-3T2, and AY102EWT1-3T3 to pan heater (see Step 8.10.10).
- 8.11 RECIRCULATION PUMP AY102-EW-P-1A (Reference Drawing H-2-131366, Sh ⁴/₃)
- ~~BB 2-27-96~~ 8.11.1 Verify that the disconnect switch to Recirculation Pump AY102-EW-P-1A is OPEN or OFF.
- ~~BB 2-27-96~~ 8.11.2 Disconnect Motor Leads AY102EWP1A-T1, AY102EWP1A-T2, and AY102EWP1A-T3 from Recirculation Pump AY102-EW-P-1A.
- ~~BB 2-27-96~~ 8.11.3 Close disconnect switch.
- ~~BB 2-27-96~~ 8.11.4 Place HS-AY102EWP-1A in the STOP position.
- ~~BB 2-27-96~~ 8.11.5 Verify that the green light for the recirculation pump is ON.
- ~~BB 2-27-96~~ 8.11.6 Verify that the red light for the recirculation pump is OFF.
- ~~BB 2-27-96~~ 8.11.7 Place HS-AY102EWP-1A in the START position.
- ~~BB 2-27-96~~ 8.11.8 Verify Pump AY102-EW-P-1A motor starter is ON. contactor m1 is closed ECN 198
- ~~BB 2-27-96~~ 8.11.9 Verify that the green light for the recirculation pump is OFF.
- ~~BB 2-27-96~~ 8.11.10 Verify that the red light for the recirculation pump is ON.
- ~~BB 2-27-96~~ 8.11.11 Place HS-AY102EWP-1A in the STOP position.
- ~~BB 2-27-96~~ 8.11.12 Verify Pump AY102-EW-P-1A motor starter is OFF. contactor m1 is open ECN 198
- ~~BB 2-27-96~~ 8.11.13 Verify that the green light for the recirculation pump is ON.
- ~~BB 2-27-96~~ 8.11.14 Verify that the red light for the recirculation pump is OFF.
- ~~BB 2-27-96~~ 8.11.15 Open disconnect switch.
- ~~BB 2-27-96~~ 8.11.16 Reconnect Motor Leads AY102EWP1A-T1, AY102EWP1A-T2, and AY102EWP1A-T3 to recirculation pump.

- 8.12 RECIRCULATION PUMP AY102-EW-P-1B (Reference Drawing H-2-131366, Sh. ⁴2)
- ~~BB 2-27-96~~ 8.12.1 Verify that the disconnect switch to Recirculation Pump AY102-EW-P-1B is OPEN or OFF.
- ~~BB 2-27-96~~ 8.12.2 Disconnect Motor Leads AY102EWP1B-T1, AY102EWP1B-T2, and AY102EWP1B-T3 from Recirculation Pump AY102-EW-P-1B.
- ~~BB 2-27-96~~ 8.12.3 Close disconnect switch.
- ~~BB 2-27-96~~ 8.12.4 Place HS-AY102EWP-1B1 in the STOP position.
ECN 198
- ~~BB 2-27-96~~ 8.12.5 Verify that the green light for the recirculation pump is ON.
- ~~BB 2-27-96~~ 8.12.6 Verify that the red light for the recirculation pump is OFF.
- ~~BB 2-27-96~~ 8.12.7 Place HS-AY102EWP-1B1 in the START position.
- ~~BB 2-27-96~~ 8.12.8 Verify ^{contactor m1 is closed ECN 198} Pump AY102-EW-P-1B motor starter is ON.
- ~~BB 2-27-96~~ 8.12.9 Verify that the green light for the recirculation pump is OFF.
- ~~BB 2-27-96~~ 8.12.10 Verify that the red light for the recirculation pump is ON.
- ~~BB 2-27-96~~ 8.12.11 Place HS-AY102EWP-1B1 in the STOP position.
- ~~BB 2-27-96~~ 8.12.12 Verify ^{contactor m1 is open ECN 198} Pump AY102-EW-P-1B motor starter is OFF.
- ~~BB 2-27-96~~ 8.12.13 Verify that the green light for the recirculation pump is ON.
- ~~BB 2-27-96~~ 8.12.14 Verify that the red light for the recirculation pump is OFF.
- ~~BB 2-27-96~~ 8.12.15 Open disconnect switch.
- ~~BB 2-27-96~~ 8.12.16 Reconnect Motor Leads AY102EWP1B-T1, AY102EWP1B-T2, and AY102EWP1B-T3 to recirculation pump.

END OF SECTION 8

9 AZ RECIRCULATING CONDENSATION COOLING TEST

This test will demonstrate the integrity of the instruments and equipment associated with the tank recirculating condensation cooling systems located at the AZ evaporator pad. (Reference Drawings H-2-131069, Sh 1, H-2-131070, Sh 1, and H-2-131357, Sh 1)

9.1 FLUID COOLER SPRAY PUMP AZ101-EW-SP-1 (Reference Drawing H-2-131366, Sh 5)

- ~~BB 2-27-96~~ 9.1.1 Verify that the disconnect switch to Fluid Cooler UIC-AZ101EWT-1 is OPEN or OFF.
 - ~~BB 2-27-96~~ 9.1.2 Verify that Spray Pump Handswitch HS-AZ101EWSP-1A is in the ~~STOP~~ OFF position.
 - ~~BB 2-27-96~~ 9.1.3 Verify that Fluid Cooler Fan Handswitch HS-AZ101EWT-1A1 is in the ~~STOP~~ OFF position.
 - ~~BB 2-27-96~~ 9.1.4 Verify that Pan Heater Handswitch HS-AZ101EWT-1A2 is in the OFF position.
 - ~~BB 2-27-96~~ 9.1.5 Verify that Damper Actuator Handswitch HS-AZ101EWT-1A3 is in the AUTO position.
 - ~~BB 2-27-96~~ 9.1.6 Verify that sump water make-up Isolation Valve HV-AZ101RW-1 is CLOSED.
 - ~~BB 2-27-96~~ 9.1.7 Verify that the spray pump sump is dry or water level is below the LSL-AZ101EWT-1 level probes.
 - ~~BB 3-4-96~~ 9.1.8 ~~Set timer of fan-on-Delay-Relay 2MS, to 20 seconds at control panel UIC-AZ101EWT-1. Delete EX-2L~~
 - ~~BB 2-27-96~~ 9.1.9 Disconnect Motor Leads AZ101EWT1-1T1, AZ101EWT1-1T2, and AZ101EWT1-1T3 from spray pump.
 - ~~BB 2-27-96~~ 9.1.10 Disconnect Power Leads AZ101EWT1-3T1, AZ101EWT1-3T2, and AZ101EWT1-3T3 from pan heater.
 - ~~BB 2-27-96~~ 9.1.11 Install shorting switches at UIC-AZ101EWT-1 between LLC level probe terminals as follows:
 - ~~BB 2-27-96~~ 9.1.11.1 Terminals "G" and "H," Switch "H" in the ON or CLOSED position.
 - ~~BB 2-27-96~~ 9.1.11.2 Terminals "G" and "L," Switch "L" in the ON or CLOSED position.
 - ~~BB 2-27-96~~ 9.1.11.3 Terminals "G" and LLC0, Switch LLC0 in the ON or CLOSED position.
- NOTE: Shorting switches to remain in place until all tests associated with Fluid Cooler UIC-AZ101EWT-1 have been completed.
- ~~9.1.12 Delete ECU 19B~~
~~Connect a DMM between UIC-AZ101EWT-1 Terminals 2 and 4.~~
- ~~BB 2-27-96~~ 9.1.13 CLOSE disconnect switch (see Step 9.1.1).
 - ~~BB 2-27-96~~ 9.1.14 ^{the local} Move Spray Pump Handswitch HS-AZ101EWSP-1A to START position.

- BB 2-27-96 9.1.15¹⁴ Verify ~~contactor 1ms closes ECU 198~~
~~DMM reads line voltage (120 V ac nominal).~~
- BB 2-27-96 9.1.16 Verify ~~contactor 1ms opens ECU 198~~
~~spray pump motor starter is ON.~~
- BB 2-27-96 9.1.17¹⁵ Move Spray Pump Handswitch HS-AZ101EWSP-1A to ~~STOP~~ ^{The off} position.
- ~~9.1.18 Verify DMM reads 0 V ac. Delete ECU 198~~
- BB 2-27-96 9.1.19¹⁸ Verify ~~contactor 1ms closes ECU 198~~
~~spray pump motor starter is OFF.~~
- BB 2-27-96 9.1.20¹⁷ Move Spray Pump Handswitch HS-AZ101EWSP-1A to ~~START~~ ^{The local} position.
- ~~9.1.21 Move 1LC Shorting Switch "H" to the ON position. ECU 198~~
- BB 2-27-96 9.1.21¹⁹ Move 1LC Shorting Switch ~~LLC0~~ ^{"H"} between terminals ~~"G"~~ and ~~LLC0~~ to the OFF or OPEN position.
- BB 2-27-96 9.1.20 Verify ~~contactor 1ms remains closed ECU 198~~
- BB 2-27-96 9.1.22²¹ Verify ~~DMM reads 0 V ac. move 1LC Shorting Switch "L" to the off position~~
- BB 2-27-96 9.1.22 Verify ~~contactor 1ms opens ECU 198~~
- BB 2-27-96 9.1.23 Return 1LC Shorting Switch ~~LLC0~~ ^{"L"} to ON or CLOSED position.
- BB 2-27-96 9.1.24 Verify ~~DMM reads line voltage. contactor 1ms remains open~~
- BB 2-27-96 9.1.25 move 1LC Shorting Switch ~~"H"~~ ^{"H"} to the ON position
- BB 2-27-96 9.1.25²⁸ Open disconnect switch. (SEE STEP 9.1.12) ECU 198
- BB 2-27-96 9.1.27 move spray pump handswitch HS-AZ101EWSP-1A to the off position
- BB 2-27-96 9.1.26 Disconnect DMM from UIC Terminals 2 and 4.
Verify ~~contactor 1ms closes ECU 198~~
- 9.2 FLUID COOLER FAN UIC-AZ101EWT-1 (Reference Drawing H-2-131366, Sh 5)
- BB 2-27-96 9.2.1 Verify that the disconnect switch to Fluid Cooler UIC-AZ101EWT-1 is OPEN or OFF.
- BB 2-27-96 9.2.2 Verify that Spray Pump Handswitch HS-AZ101EWSP-1A is in the ~~STOP~~ ^{off} position.
- BB 2-27-96 9.2.3 Verify that Fluid Cooler Fan Handswitch HS-AZ101EWT-1A1 is in the ~~STOP~~ ^{off} position.
- BB 2-27-96 9.2.4 Verify that Pan Heater Handswitch HS-AZ101EWT-1A2 is in the OFF position.
- BB 2-27-96 9.2.5 Verify that Damper Actuator Handswitch HS-AZ101EWT-1A3 is in the AUTO position.
- BB 2-27-96 9.2.6 Verify that the sump water make-up Isolation Valve HV-AZ101RW-1 is CLOSED.
- BB 2-4-96 9.2.7 Set timer of fan on Delay Relay 2MS, to 20 seconds at Control Panel UIC-AZ101EWT-1. Delete Ex #1
- BB 2-27-96 9.2.8 Set inlet fan damper temperature controller range indicator at 60 °F using the set point adjusting knob on top of the controller.
- BB 2-27-96 9.2.9 Set inlet fan damper temperature controller throttling range to minimum position using the adjusting screw next to the set point adjustment knob.

- ~~BB 2-27-96~~ 9.2.10 Remove inlet damper temperature element from thermowell and place temperature element in container of 75 °F or greater, water.
move spray pump handswitch HS-AZ101EWSP-1A to the local position
Connect a DMM between terminals 2 and 11. ECU 198
- ~~BB 2-27-96~~ 9.2.111 CLOSE disconnect switch (see Step 9.2.1).
- ~~BB 2-27-96~~ 9.2.13 Move Cooling Fan Handswitch HS-AZ101EWT-1A1 to ^{The local} START position.
that contactor 2ms closes ECU 198
- ~~Delete Exception #4~~ 9.2.14 Verify ~~DMM reads line voltage (120 V ac nominal)~~ after approximately 20 seconds.
- 9.2.15 Verify cooling fan motor is rotating.
- 9.2.16 Verify that inlet fan damper position indicator is in the OPEN position.
ECU 198
- 9.2.17 ~~Place Temperature element in a container of cold water (Less than 60°F)~~
Adjust inlet fan damper temperature controller range indicator to 10 °F.
- 9.2.18 Verify that inlet fan damper position indicator moves to the CLOSED position.
- 9.2.19 Verify ~~DMM reads 0 V ac~~ ^{ECU 198} contactor 2ms opens
- 9.2.20 Verify cooling fan motor stops rotating. ^{ECU 198}
- 9.2.21 ~~Place temperature element in a container of 75°F or hotter water~~
Adjust inlet fan damper temperature controller range indicator to 60 °F.
- 9.2.22 Verify that inlet fan damper position indicator is in the OPEN position.
- 9.2.23 Verify ~~DMM reads line voltage~~ ^{ECU 198} contactor 2ms closes
- 9.2.24 Move Fan Control Handswitch HS-AZ101EWT-1A1 to the ^{off} STOP position.
- 9.2.25 Verify ~~DMM reads 0 V ac~~ ^{ECU 198} contactor 2ms opens
- 9.2.26 OPEN disconnect switch.
- 9.2.27 ~~move spray pump handswitch to the off position~~
Disconnect DMM from UIC Terminals 2 and 11. ECU 198
- ✓ 9.2.28 Remove inlet fan damper temperature element from container of water, dry element, and reinstall element in thermowell.

9.3 FLUID COOLER PAN HEATER UIC-AZ101EWT-1 (Reference Drawing H-2-131366, Sh 5)

- ~~BB 2-27-96~~ 9.3.1 Verify disconnect switch of fluid cooler is OPEN or OFF.
- ~~BB 2-27-96~~ 9.3.2 Verify that Spray Pump Handswitch HS-AZ101EWSP-1A is in the ^{off} STOP position.
- ~~BB 2-27-96~~ 9.3.3 Verify that Sump Water Make-up Isolation Valve HV-AZ101RW-1 is CLOSED.

- ~~PS 2-27-96~~ 9.3.4 Verify that the spray pump sump is dry or water level is below the LSL-AZ101EWT-1 level probes.
- ~~PS 2-27-96~~ 9.3.5 Remove cover of pan heater thermostat housing and adjust thermostat to maximum temperature setting (150 degrees).
- ~~9.3.6~~ ~~Connect a DMM between Control Panel Terminals 2 and 20.~~
Delete ECN 198
- ~~PS 2-27-96~~ 9.3.7 CLOSE disconnect switch.
- ~~PS 2-27-96~~ 9.3.8 Move the heater control handswitch to the ON position.
Contactors 1C closes ECN 198
- ~~PS 2-27-96~~ 9.3.9 Verify DMM reads line voltage (120 V ac nominal).
- ~~PS 2-27-96~~ 9.3.10 Move "1LC" Switch "LLCO" to the OFF or OPEN position.
- ~~PS 2-27-96~~ 9.3.11 Verify DMM reads 0 V ac. ECN 198
Contactors 1C opens
- ~~PS 2-27-96~~ 9.3.12 Move "1LC" Switch "LLCO" to the ON or CLOSED position.
- ~~PS 2-27-96~~ 9.3.13 Verify DMM reads line voltage. ECN 198
Contactors 1C closes
- ~~PS 3-4-96~~ 9.3.14 Adjust pan heater thermostat to maximum setting (150 °F).
maximum ex #3
- ~~PS 2-27-96~~ 9.3.15 Verify DMM reads 0 V ac. ECN 198
Contactors 1C opens
- ~~PS 3-4-96~~ 9.3.16 Adjust pan heater thermostat to minimum setting (150 °F).
minimum ex #2
- ~~PS 2-27-96~~ 9.3.17 Verify DMM reads line voltage. ECN 198
Contactors 1C closes
- ~~PS 2-27-96~~ 9.3.18 Move heater control handswitch to the OFF position.
- ~~PS 2-27-96~~ 9.3.19 Verify DMM reads 0 V ac. ECN 198
Contactors 1C opens
- ~~PS 2-27-96~~ 9.3.20 OPEN disconnect switch.
- ~~9.3.21~~ ~~Disconnect DMM.~~ Delete ECN 198
- ~~PS 2-27-96~~ 9.3.22 Adjust pan heater thermostat to 40 °F setting and install thermostat housing cover.
- 9.4 FLUID COOLER MAKE-UP WATER SOLENOID VALVE EV-AY101EWT-1A1 (Reference Drawing H-2-131366, Sh 5)
- ~~PS 2-27-96~~ 9.4.1 Verify that the disconnect switch to Fluid Cooler UIC-AZ101EWT-1 is OPEN or OFF.
- ~~PS 2-27-96~~ 9.4.2 Verify that Spray Pump Handswitch HS-AZ101EWS-1A is in the STOP position.
OFF
- ~~PS 2-27-96~~ 9.4.3 Verify that Sump Water Make-up Isolation Valve HV-AZ101RW-1 is CLOSED.
- ~~PS 2-27-96~~ 9.4.4 Verify that the spray pump sump is dry or the water level is below the LSL-AZ101EWT-1 level probes.

- BB 2-27-96 9.4.5 CLOSE disconnect switch (see Step 9.4.1).
- BB 2-27-96 9.4.6 Verify water make-up Solenoid Valve EV-AZ101EWT-1A1 is DE-ENERGIZED.
- BB 2-27-96 9.4.7 Move ILC Shorting Switch "H" to the OFF or OPEN position.
- BB 2-27-96 9.4.8 Verify water make-up Solenoid Valve EV-AZ101EWT-1A1 is still DE-ENERGIZED.
- BB 2-27-96 9.4.9 Move ILC Shorting Switch "L" to the OFF or OPEN position.
- BB 2-27-96 9.4.10 Verify water make-up solenoid valve is ENERGIZED (Shorting Switch "L" must remain OFF or OPEN for at least 6 seconds before ILC energizes the valve).
- BB 2-27-96 9.4.11 Move ILC Shorting Switch "L" to the ON or CLOSED position.
- BB 2-27-96 9.4.12 Verify water make-up solenoid valve is still ENERGIZED.
- BB 2-27-96 9.4.13 Move ILC Shorting Switch "H" to the ON or CLOSED position.
- BB 2-27-96 9.4.14 Verify water make-up solenoid valve is DE-ENERGIZED (Shorting Switch "H" must remain ON or CLOSED for at least 6 seconds before ILC DE-ENERGIZES the valve).
- BB 2-27-96 9.4.15 OPEN disconnect switch (see Step 9.4.1).
- BB 2-27-96 9.4.16 Remove shorting switches at UIC-AZ101EWT-1 between ILC level probe.
- BB 2-27-96 9.4.17 Reconnect Motor Leads AZ101EWT1-1T1, AZ101EWT1-1T2, and AZ101EWT1-1T3 to spray pump (see Step 9.1.9).
- BB 2-27-96 9.4.18 Reconnect Power Leads AZ101EWT1-3T1, AZ101EWT1-3T2, and AZ101EWT1-3T3 to pan heater (see Step 9.1.10).
- 9.5 RECIRCULATION PUMP AZ101-EW-P-1A (Reference Drawing H-2-131366, Sh 5)
- BB 2-27-96 9.5.1 Verify that the disconnect switch to Recirculation Pump AZ101-EW-P-1A is OPEN or OFF.
- BB 2-27-96 9.5.2 Disconnect Motor Leads AZ101EWP1A-T1, AZ101EWP1A-T2, and AZ101EWP1A-T3 from Recirculation Pump AZ101-EW-P-1A.
- BB 2-27-96 9.5.2/4 Close disconnect switch.
ECN 198
- BB 2-27-96 9.5.2/3 Place HS-AZ101EWP-1A1 in the STOP position.
- BB 2-27-96 9.5.5 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.5.6 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.5.7 Place HS-AZ101EWP-1A1 in the START position.
- BB 2-27-96 9.5.8 Verify Pump AZ101-EW-P-1A motor starter is ON.
contractor me is closed ECN 198
- BB 2-27-96 9.5.9 Verify that the green light for the recirculation pump is OFF.

- BB 2-27-96 9.5.10 Verify that the red light for the recirculation pump is ON.
- BB 2-27-96 9.5.11 Place HS-AZ101EWP-1A in the STOP position.
- BB 2-27-96 9.5.12 Verify Pump AZ101-EW-P-1A ^{contactor m1 is open ECU 198} ~~motor starter is OFF.~~
- BB 2-27-96 9.5.13 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.5.14 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.5.15 Open disconnect switch.
- BB 2-27-96 9.5.16 Reconnect Motor Leads AZ101EWP1A-T1, AZ101EWP1A-T2, and AZ101EWP1A-T3 to recirculation pump.

9.6 RECIRCULATION PUMP AZ101-EW-P-1B (Reference Drawing H-2-131366, Sh 5)

- BB 2-27-96 9.6.1 Verify that the disconnect switch to Recirculation Pump AZ101-EW-P-1B is OPEN or OFF.
- BB 2-27-96 9.6.2 Disconnect Motor Leads AZ101EWP1B-T1, AZ101EWP1B-T2, and AZ101EWP1B-T3 from Recirculation Pump AZ101-EW-P-1B.
- BB 2-27-96 9.6.3⁴ Close disconnect switch.
- BB 2-27-96 9.6.4³ Place HS-AZ101EWP-1B in the STOP position.
- BB 2-27-96 9.6.5 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.6.6 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.6.7 Place HS-AZ101EWP-1B in the START position.
- BB 2-27-96 9.6.8 Verify Pump AZ101-EW-P-1B ^{contactor m1 is closed ECU 198} ~~motor starter is ON.~~
- BB 2-27-96 9.6.9 Verify that the green light for the recirculation pump is OFF.
- BB 2-27-96 9.6.10 Verify that the red light for the recirculation pump is ON.
- BB 2-27-96 9.6.11 Place HS-AZ101EWP-1B in the STOP position.
- BB 2-27-96 9.6.12 Verify Pump AZ101-EW-P-1B ^{contactor m1 is open ECU 198} ~~motor starter is OFF.~~
- BB 2-27-96 9.6.13 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.6.14 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.6.15 Open disconnect switch.
- BB 2-27-96 9.6.16 Reconnect Motor Leads AZ101EWP1B-T1, AZ101EWP1B-T2, and AZ101EWP1B-T3 to recirculation pump.

9.7 FLUID COOLER SPRAY PUMP AZ102-EW-SP-1 (Reference Drawing H-2-131366, Sh 6)

- BB 2-27-96 9.7.1 Verify that the disconnect switch to Fluid Cooler UIC-AZ102EWT-1 is OPEN or OFF.

- ~~B 2-27-96~~ 9.7.2 Verify that Spray Pump Handswitch HS-AZ102EWSP-1A is in the ^{OFF} ~~STOP~~ position.
- ~~B 2-27-96~~ 9.7.3 Verify that Fluid Cooler Fan Handswitch HS-AZ102EWT-1A1 is in the ~~STOP~~ position.
- ~~B 2-27-96~~ 9.7.4 Verify that Pan Heater Handswitch HS-AZ102EWT-1A2 is in the OFF position.
- ~~B 2-27-96~~ 9.7.5 Verify that Damper Actuator Handswitch HS-AZ102EWT-1A3 is in the AUTO position.
- ~~B 2-27-96~~ 9.7.6 Verify that sump water make-up Isolation Valve HV-AZ102RW-1 is CLOSED.
- ~~B 2-27-96~~ 9.7.7 Verify that the spray pump sump is dry or water level is below the LSL-AZ102EWT-1 level probes.
- ~~B 2-24-96~~ 9.7.8 ~~Set timer of fan on Delay Relay 2MS, to 20 seconds at control panel UIC-AZ102EWT-1. Delete Ex #1~~
- ~~B 2-27-96~~ 9.7.9 Disconnect Motor Leads AZ102EWT1-1T1, AZ102EWT1-1T2, and AZ102EWT1-1T3 from spray pump.
- ~~B 2-27-96~~ 9.7.10 Disconnect Power Leads AZ102EWT1-3T1, AZ102EWT1-3T2, and AZ102EWT1-3T3 from pan heater.
- ~~B 2-27-96~~ 9.7.11 Install shorting switches at UIC-AZ102EWT-1 between LLC level probe terminals as follows:
- ~~B 2-27-96~~ 9.7.11.1 Terminals "G" and "H," Switch "H" in the ON or CLOSED position.
- ~~B 2-27-96~~ 9.7.11.2 Terminals "G" and "L," Switch "L" in the ON or CLOSED position.
- ~~B 2-27-96~~ 9.7.11.3 Terminals "G" and LLC0, Switch LLC0 in the ON or CLOSED position.
- NOTE: Shorting switches to remain in place until all tests associated with Fluid Cooler UIC-AZ102EWT-1 have been completed.
- ~~9.7.12~~ ^{Delete Ecn 198} ~~Connect a DMM between UIC-AZ102EWT-1 Terminals 2 and 4.~~
- ~~B 2-27-96~~ 9.7.13 ~~12~~ CLOSE disconnect switch (see Step 9.7.1).
- ~~B 2-27-96~~ 9.7.14 ~~13~~ Move Spray Pump Handswitch HS-AZ102EWSP-1A to START position.
- ~~B 2-27-96~~ 9.7.15 ~~14~~ Verify DMM reads line voltage (120 V ac nominal).
- ~~B 2-27-96~~ 9.7.16 Verify spray pump motor starter is ON.
- ~~B 2-27-96~~ 9.7.17 ~~15~~ Move Spray Pump Handswitch HS-AZ102EWSP-1A to STOP position.
- ~~9.7.18~~ ^{Delete Ecn 198} ~~Verify DMM reads 0 V ac.~~
- ~~B 2-27-96~~ 9.7.19 ~~18~~ ^{contractor 1ms closes Ecn 198} ~~Verify spray pump motor starter is OFF.~~
- ~~B 2-27-96~~ 9.7.20 ^{The local} ~~17~~ Move Spray Pump Handswitch HS-AZ102EWSP-1A to ~~START~~ position.

- "H"
- ~~BB 2-27-96~~ 9.7.2119 Move ILC Shorting Switch ~~LLCO~~ between Terminals "G" and LLCO to the OFF or OPEN position.
Verify contactor 1ms remains closed ECU19B
- ~~BB 2-27-96~~ 9.7.20 Verify DMM reads 0 V ac. move ILC Shorting Switch "L" to the off position
Verify contactor 1ms opens
- ~~BB 2-27-96~~ 9.7.22 Return ILC Shorting Switch ~~LLCO~~ to ON or CLOSED position.
"L" ECU19B
- ~~BB 2-27-96~~ 9.7.24 Verify ~~DMM reads line voltage.~~ contactor 1ms remains open
move ILC Shorting Switch "H" to the on position
- ~~BB 2-27-96~~ 9.7.25 Open disconnect switch. (See Step 9.7.12) ECU19B
- ~~BB 2-27-96~~ 9.7.252B move spray pump handswitch HS-AZ102EWSP-1A to the off position
- ~~BB 2-27-96~~ 9.7.27 Disconnect DMM from UIC Terminals 2 and 4. ECU19B
- ~~BB 2-27-96~~ 9.7.26 Verify contactor 1ms closes
- 9.8 FLUID COOLER FAN UIC-AZ102EWT-1A1 (Reference Drawing H-2-131366, Sh 6)
- ~~BB 2-27-96~~ 9.8.1 Verify that the disconnect switch to Fluid Cooler UIC-AZ102EWT-1 is OPEN or OFF.
- ~~BB 2-27-96~~ 9.8.2 Verify that Spray Pump Handswitch HS-AZ102EWSP-1A is in the ~~STOP~~ off position.
- ~~BB 2-27-96~~ 9.8.3 Verify that Fluid Cooler Fan Handswitch HS-AZ102EWT-1A1 is in the ~~STOP~~ off position.
- ~~BB 2-27-96~~ 9.8.4 Verify that Pan Heater Handswitch HS-AZ102EWT-1A2 is in the OFF position.
- ~~BB 2-27-96~~ 9.8.5 Verify that Damper Actuator Handswitch HS-AZ102EWT-1A3 is in the AUTO position.
- ~~BB 2-27-96~~ 9.8.6 Verify that the sump water make-up Isolation Valve HV-AZ102RW-1 is CLOSED.
- ~~BB 3-4-96~~ 9.8.7 Set timer of fan on-Delay Relay 2MS, to 20 seconds at Control Panel UIC-AZ102EWT-1. Delete EX #1
- ~~BB 2-27-96~~ 9.8.8 Set inlet fan damper temperature controller range indicator at 60 °F using the set point adjusting knob on top of the controller.
- ~~BB 2-27-96~~ 9.8.9 Set inlet fan damper temperature controller throttling range to minimum position using the adjusting screw next to the set point adjustment knob.
- ~~BB 2-27-96~~ 9.8.10 Remove inlet damper temperature element from thermowell and place temperature element in container of 75 °F or greater, water.
move spray pump handswitch HS-AZ102EWSP-1A to the local position
- ~~BB 2-27-96~~ 9.8.1112 Connect a DMM between Terminals 2 and 11. ECU19B
- ~~BB 2-27-96~~ 9.8.121) CLOSE disconnect switch (see Step 9.8.1).
- ~~BB 2-27-96~~ 9.8.13 Move Cooling Fan Handswitch HS-AZ102EWT-1A1 to-START position.
That contactor 2ms closes ECU19B
- ~~BB 3-4-96~~ 9.8.14 Verify DMM reads line voltage (120 V ac nominal) after approximately 20 seconds. Delete EX #1
- ~~Delete exception #5~~ 9.8.15 Verify cooling fan motor is rotating.

Delete
exception #5

- 9.8.16 Verify that inlet fan damper position indicator is in the OPEN position. ECU 198
Place temperature element in a container of cold water (Less than 60°F)
Adjust inlet damper temperature controller range indicator to 10°F.
- 9.8.17
- 9.8.18 Verify that inlet fan damper position indicator moves to the CLOSED position.
- 9.8.19 Verify DMM reads 0 V ac. contactor 2ms opens ECU 198
- 9.8.20 Verify cooling fan motor stops rotating. ECU 198
- 9.8.21 Place temperature element in a container of 75°F or hotter water
Adjust inlet fan damper temperature controller range indicator to 60°F.
- 9.8.22 Verify that inlet fan damper position indicator is in the OPEN position.
- 9.8.23 Verify DMM reads line voltage. contactor 2ms closes ECU 198
- 9.8.24 Move Fan Control Handswitch HS-AZ102EWT-1A1 to the STOP position. off
- 9.8.25 Verify DMM reads 0 V ac. contactor 2ms opens ECU 198
- 9.8.26 OPEN disconnect switch. ECU 198
move spray pump handswitch to the off position
- 9.8.27 Disconnect DMM from UIC Terminals 2 and 11.
- 9.8.28 Remove inlet fan damper temperature element from container of water, dry element, and reinstall element in thermowell.

9.9 FLUID COOLER PAN HEATERS UIC-AZ102-EWT-1 (Reference Drawing H-2-131366, Sh 6)

- 9.9.1 Verify disconnect switch of fluid cooler is OPEN or OFF.
- 9.9.2 Verify that Spray Pump Handswitch HS-AZ102EWSP-1A is in the STOP position.
- 9.9.3 Verify that Sump Water Make-up Isolation Valve EV-AZ102RW-1 is CLOSED.
- 9.9.4 Verify that the spray pump sump is dry or water level is below the LSL-AZ102EWT-1 level probes.
- 9.9.5 Remove cover of pan heater thermostat housing and adjust thermostat to maximum temperature setting (150 degrees).
- 9.9.6 ~~Delete ECU 198~~
~~Connect a DMM between Control Panel Terminals 2 and 20.~~
- 9.9.6 CLOSE disconnect switch.
- 9.9.7 Move the heater control handswitch to the ON position.
- 9.9.8 Verify DMM reads line voltage (120 V ac nominal). contactor 1C closes ECU 198
- 9.9.9 Move "1LC" Switch "LLCO" to the OFF or OPEN position.

- ~~BB 2-27-96~~ 9.9.11¹⁰ Verify ~~DMM reads 0 V ac.~~ ^{ECN 198} Contactor IC opens
- ~~BB 2-27-96~~ 9.9.12¹¹ Move "ILC" Switch "LLCO" to the ON or CLOSED position.
- ~~BB 2-27-96~~ 9.9.13¹² Verify ~~DMM reads line voltage.~~ ^{ECN 198} contactor IC closes
- ~~BB 3-4-96~~ 9.9.14¹³ Adjust pan heater thermostat to ~~minimum~~ ^{maximum Ex #3} setting ~~(0 °F)~~ ^(150 °F).
- ~~BB 2-27-96~~ 9.9.15¹⁴ Verify ~~DMM reads 0 V ac.~~ ^{ECN 198} contactor IC opens
- ~~BB 3-4-96~~ 9.9.16¹⁵ Adjust pan heater thermostat to ~~maximum~~ ^{minimum Ex #2} setting ~~(150 °F)~~ ^(0 °F).
- ~~BB 2-27-96~~ 9.9.17¹⁶ Verify ~~DMM reads line voltage.~~ ^{ECN 198} contactor IC closes
- ~~BB 2-27-96~~ 9.9.18¹⁷ Move heater control handswitch to the OFF position.
- ~~BB 2-27-96~~ 9.9.19¹⁸ Verify ~~DMM reads 0 V ac.~~ ^{ECN 198} Contactor IC opens
- ~~BB 2-27-96~~ 9.9.20¹⁹ OPEN disconnect switch.
~~Delete ECN 198~~
- ~~9.9.21~~ ~~Disconnect DMM.~~
- ~~BB 2-27-96~~ 9.9.22²⁰ Adjust pan heater thermostat to 40 °F setting and install thermostat housing cover.
- 9.10 FLUID COOLER MAKE-UP WATER SOLENOID VALVE EV-AZ102EWT-1A1 (Reference Drawing H-2-131366, Sh 6)
- ~~BB 2-27-96~~ 9.10.1 Verify that the disconnect switch to Fluid Cooler UIC-AZ102EWT-1 is OPEN or OFF.
- ~~BB 2-27-96~~ 9.10.2 Verify that Spray Pump Handswitch HS-AZ102EWSP-1A is in the ~~STOP~~ OFF position.
- ~~BB 2-27-96~~ 9.10.3 Verify that Sump Water Make-up Isolation Valve HV-AZ102RW-1 is CLOSED.
- ~~BB 2-27-96~~ 9.10.4 Verify that the spray pump sump is dry or the water level is below the LSL-AZ102EWT-1 level probes.
- ~~BB 2-27-96~~ 9.10.5 CLOSE disconnect switch (see Step 9.10.1).
- ~~BB 2-27-96~~ 9.10.6 Verify water make-up Solenoid Valve EV-AZ102EWT-1A1 is DE-ENERGIZED.
- ~~BB 2-27-96~~ 9.10.7 Move ILC Shorting Switch "H" to the OFF or OPEN position.
- ~~BB 2-27-96~~ 9.10.8 Verify water make-up Solenoid Valve EV-AZ102EWT-1A1 is still DE-ENERGIZED.
- ~~BB 2-27-96~~ 9.10.9 Move ILC Shorting Switch "L" to the OFF or OPEN position.
- ~~BB 2-27-96~~ 9.10.10 Verify water make-up solenoid valve is ENERGIZED (Shorting Switch "L" must remain OFF or OPEN for at least 6 seconds before ILC energizes the valve).
- ~~BB 2-27-96~~ 9.10.11 Move ILC Shorting Switch "L" to the ON or CLOSED position.

- BB 2-27-96 9.10.12 Verify water make-up solenoid valve is still ENERGIZED.
- BB 2-27-96 9.10.13 Move ILC Shorting Switch "H" to the ON or CLOSED position.
- BB 2-27-96 9.10.14 Verify water make-up solenoid valve is DE-ENERGIZED (Shorting Switch "H" must remain ON or CLOSED for at least 6 seconds before ILC DE-ENERGIZES the valve).
- BB 2-27-96 9.10.15 OPEN disconnect switch (see Step 9.10.1).
- BB 2-27-96 9.10.16 Remove shorting switches at UIC-AZ102EWT-1 between ILC level probe.
- BB 2-27-96 9.10.17 Reconnect Motor Leads AZ102EWT1-1T1, AZ102EWT1-1T2, and AZ102EWT1-1T3 to spray pump (see Step 9.7.9).
- BB 2-27-96 9.10.18 Reconnect Power Leads AZ102EWT1-3T1, AZ102EWT1-3T2, and AZ102EWT1-3T3 to pan heater (see Step 9.7.10).
- 9.11 RECIRCULATION PUMP AZ102-EW-P-1A (Reference Drawing H-2-131366, Sh 6)
- BB 2-27-96 9.11.1 Verify that the disconnect switch to Recirculation Pump AZ102-EW-P-1A is OPEN or OFF.
- BB 2-27-96 9.11.2 Disconnect Motor Leads AZ102EWP1A-T1, AZ102EWP1A-T2, and AZ102EWP1A-T3 from Recirculation Pump AZ102-EW-P-1A.
- BB 2-27-96 9.11.3 Close disconnect switch.
- BB 2-27-96 9.11.4 Place HS-AZ102EWP-1A in the STOP position.
- BB 2-27-96 9.11.5 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.11.6 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.11.7 Place HS-AZ102EWP-1A in the START position.
- BB 2-27-96 9.11.8 Verify ^{contactor m2 is closed ECU 19B} Pump AZ102-EW-P-1A motor starter is ON.
- BB 2-27-96 9.11.9 Verify that the green light for the recirculation pump is OFF.
- BB 2-27-96 9.11.10 Verify that the red light for the recirculation pump is ON.
- BB 2-27-96 9.11.11 Place HS-AZ102EWP-1A in the STOP position.
- BB 2-27-96 9.11.12 Verify ^{contactor m1 is open ECU 19B} Pump AZ102-EW-P-1A motor starter is OFF.
- BB 2-27-96 9.11.13 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.11.14 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.11.15 Open disconnect switch.
- BB 2-27-96 9.11.16 Reconnect Motor Leads AZ102EWP1A-T1, AZ102EWP1A-T2, and AZ102EWP1A-T3 to recirculation pump.

9.12 RECIRCULATION PUMP AZ102-EW-P-1B (Reference Drawing H-2-131366, Sh 6)

- BB 2-27-96 9.12.1 Verify that the disconnect switch to Recirculation Pump AZ102-EW-P-1B is OPEN or OFF.
- BB 2-27-96 9.12.2 Disconnect Motor Leads AZ102EWP1B-T1, AZ102EWP1B-T2, and AZ102EWP1B-T3 from Recirculation Pump AZ102-EW-P-1B.
- BB 2-27-96 9.12.3⁴ Close disconnect switch.
- BB 2-27-96 9.12.4³ Place HS-AZ102EWP-1B1 in the STOP position.
- BB 2-27-96 9.12.5 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.12.6 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.12.7 Place HS-AZ102EWP-1B1 in the START position.
- BB 2-27-96 9.12.8 Verify ^{contactor m1 is closed ECN198} ~~Pump AZ102-EW-P-1B motor starter is ON.~~
- BB 2-27-96 9.12.9 Verify that the green light for the recirculation pump is OFF.
- BB 2-27-96 9.12.10 Verify that the red light for the recirculation pump is ON.
- BB 2-27-96 9.12.11 Place HS-AZ102EWP-1B1 in the STOP position.
- BB 2-27-96 9.12.12 Verify ^{contactor m1 is open ECN198} ~~Pump AZ102-EW-P-1B motor starter is OFF.~~
- BB 2-27-96 9.12.13 Verify that the green light for the recirculation pump is ON.
- BB 2-27-96 9.12.14 Verify that the red light for the recirculation pump is OFF.
- BB 2-27-96 9.12.15 Open disconnect switch.
- BB 2-27-96 9.12.16 Reconnect Motor Leads AZ102EWP1B-T1, AZ102EWP1B-T2, and AZ102EWP1B-T3 to recirculation pump.

END OF SECTION 9

10 ~~AZCW VENTILATION CONDENSATION COOLING SYSTEM TEST EXCEPTION~~ *WHC-SD-W030-ATP-004-007

~~This test will demonstrate the integrity of the instruments and equipment associated with the AZCW ventilation condensation cooling system. (Reference Drawing H-2-131071, Sh-1.)~~

10.1 ~~CHILLED WATER RECIRCULATION PUMP AZ-CW-P-1A (Reference Drawing H-2-131366, Sh-7)~~

~~NOTE: All steps are performed at the chiller pad unless otherwise noted. (Reference Drawing H-2-131357, Sh-1)~~

~~10.1.1 Verify that the disconnect switch to Recirculation Pump AZ-CW-P-1A is OPEN or OFF.~~

~~10.1.2 Disconnect Motor Leads AZCWP1A-T1, AZCWP1A-T2, and AZCWP1A-T3 from Recirculation Pump AZ-CW-P-1A.~~

~~10.1.3 Close disconnect switch.~~

~~10.1.4 Place HS-AZCWP-1A in the STOP position.~~

~~10.1.5 Verify that the green light for the recirculation pump is ON.~~

~~10.1.6 Verify that the red light for the recirculation pump is OFF.~~

~~10.1.7 Place HS-AZCWP-1A in the START position.~~

~~10.1.8 Verify Pump AZ-CW-P-1A motor starter is ON.~~

~~10.1.9 Verify that the green light for the recirculation pump is OFF.~~

~~10.1.10 Verify that the red light for the recirculation pump is ON.~~

~~10.1.11 Place HS-AZCWP-1A in the STOP position.~~

~~10.1.12 Verify Pump AZ-CW-P-1A motor starter is OFF.~~

~~10.1.13 Verify that the green light for the recirculation pump is ON.~~

~~10.1.14 Verify that the red light for the recirculation pump is OFF.~~

~~10.1.15 Open disconnect switch.~~

~~10.1.16 Reconnect Motor Leads AZCWP1A-T1, AZCWP1A-T2, and AZCWP1A-T3 to recirculation pump.~~

10.2 ~~CHILLED WATER RECIRCULATION PUMP AZ-CW-P-1B (Reference Drawing H-2-131366, Sh-7)~~

~~NOTE: All steps are performed at the chiller pad unless otherwise noted. (Reference Drawing H-2-131357, Sh-1)~~

~~10.2.1 Verify that the disconnect switch to Recirculation Pump AZ-CW-P-1B is OPEN or OFF.~~

- ~~10.2.2 Disconnect Motor Leads AZCWP1B T1, AZCWP1B T2, and AZCWP1B T3 from Recirculation Pump AZ CW P 1B.~~
- ~~10.2.3 Close disconnect switch.~~
- ~~10.2.4 Place HS AZCWP 1B in the STOP position.~~
- ~~10.2.5 Verify that the green light for the recirculation pump is ON.~~
- ~~10.2.6 Verify that the red light for the recirculation pump is OFF.~~
- ~~10.2.7 Place HS AZCWP 1B in the START position.~~
- ~~10.2.8 Verify Pump AZ CW P 1B motor starter is ON.~~
- ~~10.2.9 Verify that the green light for the recirculation pump is OFF.~~
- ~~10.2.10 Verify that the red light for the recirculation pump is ON.~~
- ~~10.2.11 Place HS AZCWP 1B in the STOP position.~~
- ~~10.2.12 Verify Pump AZ CW P 1B motor starter is OFF.~~
- ~~10.2.13 Verify that the green light for the recirculation pump is ON.~~
- ~~10.2.14 Verify that the red light for the recirculation pump is OFF.~~
- ~~10.2.15 Open disconnect switch.~~
- ~~10.2.16 Reconnect Motor Leads AZCWP1B T1, AZCWP1B T2, and AZCWP1B T3 to recirculation pump.~~

END OF SECTION 10

EXCEPTION NO.		Project No.		ATP No.		Rev.		
Recorded by			Organization		Date Recorded		ATP Page No.	
Step No.		Requirement						
Description of Problem								
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)				
Planned Action								
Action Taken								
RETEST EXECUTION AND ACCEPTANCE								
Retest Installation Contractor		Date		Recorder		Date		
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date		
Field Engineering		Date		Test Director (Name/Organization)		Date		
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date		
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR								
☐ Retest Approved and Accepted ☐ Exception Accepted-as-is* ☐ Other*								
* Explanation								
Approver 1		Date		Approver 2		Date		
Approver 3		Date		Approver 4		Date		

KEH-428 (6-85)

TEST EXCEPTION LOG		
Date	Description	Disposition

TEST EXCEPTION LOG

WHL - 50-0030-AT R-004, Rev 0

TE No.	Date	Description	Disposition	Date Closed
001	2/28/96	SETTING TIME DELAY RELAY	ACCEPTED AS IS	
002	2/28/96	INCORRECT TEMPERATURE SETTINGS	ACCEPTED AS IS	
003	2/28/96	INCORRECT TEMPERATURE SETTINGS	ACCEPTED AS IS	
004	2/28/96	DELETE SECTION 9.2	ACCEPTED AS IS	
005	2/28/96	DELETE SECTION 9.3	ACCEPTED AS IS	
006	2/28/96	DELETE 7.2.7	ACCEPTED AS IS	
007	2/28/96	DELETE SECTION 10	ACCEPTED AS IS	

EXCEPTION NO. WHC-SD-W030-ATP-004-001		Project No. W030		ATP No. WHC-SD-W030-ATP-004		Rev. 0	
Recorded by GERALD HAYES		Organization ICFRI		Date Recorded 2/28/96		ATP Page No. SEE ATTACHMENT	
Step No. SEE ATTACHMENT		Requirement					
Description of Problem THE ATP REQUIRES "SET TIMER OF FAN ON DELAY RELAY 2MS TO 30 SECONDS." RELAY 2MS IS NOT A TIME DELAY RELAY.							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action DELETE THE REFERENCES TO 2MS AS A TIME DELAY RELAY, THE REQUIREMENT TO MAKE TIME DELAY ADJUSTMENTS, AND TIME DELAY OR CLOSURE OF RELAY 2MS.							
Action Taken THE REFERENCES WERE DELETED AND TESTING CONTINUED							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
				B. B. B.		4-25-96	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
M. D. H. B. ETEOPS		4-15-96		D. B. C.		4/23/96	
Field Engineering		Date		Test Director (Name/Organization)		Date	
				L. H. H. K. E. T.		4/23/96	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
M. A. Friedlich		4/23/96		J. K. K.		4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
☐ Retest: Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*							
* Explanation THE ADJUSTABLE TRIP RELAYS WERE MISIDENTIFIED AS TIME DELAY RELAYS.							
Approver 1		Date		Approver 2		Date	
M. D. H. B.		4-16-96		D. B. C.		4-16-96	
Approver 3		Date		Approver 4		Date	

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ATTACHMENT TO TEST EXCEPTION WHC-SD-W030-004-001 , Rev 0

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9.8.14	30

EXCEPTION NO. <u>WHE-SD-030-ATR-004-002</u>		Project No. <u>W030</u>		ATP No. <u>WHE-SD-030-ATR-004</u>		Rev. <u>0</u>	
Recorded by <u>GERALD HAYES</u>		Organization <u>ICFRI</u>		Date Recorded <u>2/28/96</u>		ATP Page No. <u>SEE ATTACHMENT</u>	
Step No. <u>SEE ATTACHMENT</u>		Requirement					
Description of Problem <u>THE ATP SAYS "ADJUST PAN HEATER THERMOSTAT TO MAXIMUM SETTING (150°F)."</u> <u>IT SHOULD SAY "ADJUST PAN HEATER THERMOSTAT TO MINIMUM SETTING (0°F)."</u>							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action <u>CHANGE "MAXIMUM" TO "MINIMUM" AND "150°F" TO "0°F".</u>							
Action Taken <u>THE CHANGES WERE MADE AND TESTING CONTINUED.</u>							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
				<u>Bum Bahs</u>		<u>4-25-96</u>	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
<u>M.D. Hardy, ECFORS</u>		<u>4-15-96</u>		<u>D.B. Cle</u>		<u>4/25/96</u>	
Field Engineering		Date		Test Director (Name/Organization)		Date	
				<u>Gerald Hayes ICFRI</u>		<u>4/23/96</u>	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
<u>Mark A. Friedman</u>		<u>4/23/96</u>		<u>J. K. K...</u>		<u>4/23/96</u>	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
☐ Retest Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*							
* Explanation <u>THE OPERATION OF THE PAN HEATER CONTROLLER WAS IDENTIFIED INCORRECTLY.</u>							
Approver 1		Date		Approver 2		Date	
<u>M.D. Hardy</u>		<u>4-16-96</u>		<u>D.B. Cle</u>		<u>4-16-96</u>	
Approver 3		Date		Approver 4		Date	

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✓ Rev D

ATTACHMENT TO TEST EXCEPTION WMC-SD-W030-004-002

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EXCEPTION NO. LHC-5D-W030-ATP-004-W03	Recorded by LHC-5D-W030-ATP-004-W03	Project No.	ATP No.
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EXCEPTION NO. WHC-5D-W030-ATP-004-004		Project No. W030		ATP No. WHC-5D-W030-ATP-004		Rev. 0	
Recorded by GERALD HAYES		Organization ICFRI		Date Recorded 2/28/96		ATP Page No. 24,25	
Step No.		Requirement					
SECTION 9.2							
Description of Problem							
SECTION 9.2 PROVIDES DIRECTIONS TO TEST THE OPERATION OF FLUID COOLER FAN							
UIC-AZIEWEIT-1A1. HOWEVER, DUE TO FAILURE OF THE DAMPER POSITIONER TO OPERATE							
AS DESIGNED WE WERE UNABLE TO COMPLETE THIS PORTION OF THE ATP.							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action							
DELETE SECTION 9.2 FROM THE ATP. AFTER THE PROBLEMS WITH THE DAMPER ARE							
CORRECTED THE FLUID COOLER FAN WILL BE TESTED AS PART OF THE PRE-							
OPERATIONAL PROCEDURE							
Action Taken							
SECTION 9.2 WAS DELETED AND TESTING CONTINUED.							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
				Bum Bels		4-25-96	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
M.D. Hardy EITOPS		4-15-96		D.B. Gle		4/20/96	
Field Engineering		Date		Test Director (Name/Organization)		Date	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
Mark A. Friedland		4/23/96		J. Hender		4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
☐ Retest Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*							
* Explanation							
DELETION OF SECTION 9.2 DOES NOT COMPROMISE ANY OTHER SECTIONS OF THIS							
ATP.							
Approver 1		Date		Approver 2		Date	
M.D. Hardy		4-16-96		D.B. Gle		4/16/96	
Approver 3		Date		Approver 4		Date	

EXCEPTION NO. WHC-SD-W030-ATP-004-005		Project No. W030		ATP No. WHC-SD-W030-ATR-004		Rev. 0	
Recorded by GERALD HAYES		Organization ICFKN		Date Recorded 2/28/96		ATP Page No. 30,31	
Step No.		Requirement					
SECTION 9.8							
Description of Problem							
SECTION 9.8 PROVIDES DIRECTIONS TO TEST THE OPERATION OF FLUID COOLER FAN							
UIC-AZ102EWT-1A1. HOWEVER, DUE TO FAILURE OF THE DAMPER POSITIONER TO OPERATE							
AS DESIGNED WE WERE UNABLE TO COMPLETE THIS PORTION OF THE ATP.							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action							
DELETE SECTION 9.2 FROM THE ATP. AFTER THE PROBLEMS WITH THE DAMPER ARE							
CORRECTED THE FLUID COOLER FAN WILL BE TESTED AS PART OF THE PRE-							
OPERATIONAL PROCEDURE							
Action Taken							
SECTION 9.2 WAS DELETED AND TESTING CONTINUED.							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
				Bum Byles		4-25-96	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
M.D. Harding BTFOPS		4-15-96		D.B. Cline		4/25/96	
Field Engineering		Date		Test Director (Name/Organization)		Date	
				Gerald Hayes Kell		4/25/96	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
Mark A. Friedlich		4/22/96		M. Hinder		4/27/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
☐ Retest Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*							
* Explanation							
DELETION OF SECTION 9.8 DOES NOT COMPROMISE ANY OTHER SECTIONS OF							
THIS ATP.							
Approver 1		Date		Approver 2		Date	
M.D. Harding		4-16-96		D.B. Cline		4/16/96	
Approver 3		Date		Approver 4		Date	

EXCEPTION NO. WHC-SD-W030-ATP-004-006		Project No. W030		ATP No. WHC-SD-W030-ATP-004		Rev. 0	
Recorded by GERALD HAYES		Organization ICF KH		Date Recorded 2/28/96		ATP Page No. 10	
Step No. 7.2.2		Requirement					
Description of Problem THE ATP CALLS FOR A PROCESS INSTRUMENT CALIBRATOR. THIS INSTRUMENT IS NOT REQUIRED FOR THIS ATP.							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action DELETE 7.2.2							
Action Taken STEP 7.2.2 WAS DELETED AND TESTING CONTINUED							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
				Ben Bahr		4-25-96	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
M.D. Harding ETOPS 4-15-96		4-15-96		D.B. Bahr		4/25/96	
Field Engineering		Date		Test Director (Name/Organization)		Date	
				Gerald Hayes KEH		4/23/96	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
Mark A. Friedl		4/23/96		S. Hendri		4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
☐ Retest Approved and Accepted ☒ Exception Accepted-as-is* ☐ Other*							
* Explanation THE PROCESS INSTRUMENT CALIBRATOR WAS NOT REQUIRED AS PART OF THIS ATP THEREFORE IT WAS DELETED.							
Approver 1		Date		Approver 2		Date	
M.D. Harding		4-16-96		D.B. Bahr		4/16/96	
Approver 3		Date		Approver 4		Date	

EXCEPTION NO. WHC-5D-W030-ATP-004-007		Project No. W030		ATP No. WHC-5D-W030-ATP-004		Rev. 0	
Recorded by GERALD HAYES		Organization ICFKN		Date Recorded 2/25/96		ATP Page No. 35/36	
Step No. SECTION 10		Requirement					
Description of Problem THIS SECTION REQUIRES THE OPERATION OF MOTOR STARTERS AZ-CW-P-1A/1B, WITH THE MOTOR LEADS DISCONNECTED. HOWEVER THE CONTROL POWER TRANSFORMERS ARE NOT INSTALLED.							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action DELETE THE REQUIREMENT TO TEST THESE MOTOR STARTERS. THESE MOTOR STARTERS WILL BE TESTED AS PART OF THE PRE-OP TESTING.							
Action Taken THE REQUIREMENT WAS DELETED AND TESTING CONTINUED.							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
				Bum Beh		4-25-96	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
M.D. Hardy ETOPS		4-15-96		D.B. Cle		4/25/96	
Field Engineering		Date		Test Director (Name/Organization)		Date	
				Gerald Hayes ICF		4/23/96	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
Mark A. Fiedler		4/23/96		J. Fiedler		4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
☐ Retest Approved and Accepted				☒ Exception Accepted-as-is*		☐ Other*	
* Explanation							
THE TEST OF THE MOTOR STARTERS AZ-CW-P-1A/1B WILL BE CONDUCTED AS PART OF THE PRE-OP TESTS.							
Approver 1		Date		Approver 2		Date	
M.D. Hardy		4-16-96		D.B. Cle		4/16/96	
Approver 3		Date		Approver 4		Date	