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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
11. Receiver Remarks:		10. System/Bldg./Facility: AY/AZ TANK FARMS
		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: April 15, 1996

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-W030-004 <i>ATR</i>		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)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)
		1. Approved 2. Approved w/comment 3. Disapproved w/comment
		4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

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

(G)	(H)	SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)								(G)	(H)
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
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>	R325	4-25-96						
		Safety	<i>N/A</i>								
		Env.	<i>N/A</i>								

18. Signature of EDT Originator <i>D.B. Cole</i> 4/25/96	19. Authorized Representative for Receiving Organization <i>KA Colosi</i> 4/26/96	20. Cognizant Manager <i>D.B. Cole</i> and <i>G.L. Parsons</i> 4/25/96	21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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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

EDT/ECN: 615251

UC: 2030

Org Code: 8K240

Charge Code: NK201

B&R Code: EW3130010

Total Pages: 39 51 *EMB 4/29/96*

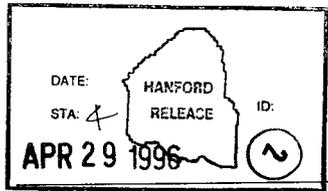
Key Words: TEST, VENTILATION, INSTRUMENTATION, REPORT, W-030, STARTUP

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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Kara 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
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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.

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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

ICF KAISER HANFORD COMPANY (ICF KH)

<u>Mark A. Friedlich</u>	<u>1-16-96</u>	<u>Robert B. Hoffmann</u>	<u>1-16-96</u>
Author	Date	Technical Documents	Date
<u>C. J. Jammie</u>	<u>1/16/96</u>	<u>C. D. Eggen</u>	<u>1/17/96</u>
Checker	Date	Safety	Date
<u>N/A</u>		<u>N/A</u>	
Environmental	Date	Quality Engineering	Date
<u>J. Henderson</u>	<u>1/17/96</u>		
Project Management	Date		

Westinghouse Hanford Company (WHC)

<u>Annis Cole</u>	<u>1/12/96</u>	<u>Hank M. Chafin</u>	<u>1-18-96</u>
Projects Department	Date	Quality Assurance	Date
<u>Bobson</u>	<u>1-18-96</u>	<u>M. D. Harding</u>	<u>1-19-96</u>
Safety	Date	Operations	Date

EXECUTION AND TEST APPROVAL

EXECUTED BY

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

WITNESSES

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

A-E APPROVAL

ICF Kaiser Hanford Company (ICF KH)

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding _____

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

TEST APPROVAL AND ACCEPTANCE

Westinghouse Hanford Company)

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding _____

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

EXECUTION AND TEST APPROVAL

EXECUTED BY

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

WITNESSES

<u>M. D. Harding EPOAS</u> Witness/Organization	<u>4-15-96</u> Date	<u>Bruce Bels</u> Title III Inspector	<u>2-13-96</u> Date
<u>J.P. Cole</u> Witness/Organization	<u>4/15/96</u> Date	_____	_____

A-E APPROVAL

ICF Kaiser Hanford Company (ICF KH)

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding _____

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

TEST APPROVAL AND ACCEPTANCE

Westinghouse Hanford Company)

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding X

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

TABLE OF CONTENTS

Section		Page
	TITLE/PROCEDURE APPROVAL	1
	EXECUTION AND TEST APPROVAL	2
	TABLE OF CONTENTS	3
1	PURPOSE	4
2	REFERENCES	4
3	RESPONSIBILITIES	5
4	CHANGE CONTROL	7
5	EXECUTION	8
6	EXCEPTIONS	8
7	PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS	9
8	AY RECIRCULATING CONDENSATION COOLING TEST	11
9	AZ RECIRCULATING CONDENSATION COOLING TEST	23
10	AZCW VENTILATION CONDENSATION COOLING SYSTEM	35
	EXCEPTION FORM	37
	TEST EXCEPTION LOG	38

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, reverifies 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 Fluke Model No. 83 Serial No. 61200721

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

~~7.2.2~~ ^{Delete Ex #6} 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.

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. ECW 198
- BB 2-27-96 8.1.2 Verify that Spray Pump Handswitch HS-AY101EWSP-1A is in the ~~STOP~~ OFF position.
- BB 2-27-96 8.1.3 Verify that Fluid Cooler Fan Handswitch HS-AY101EWT-1A1 is in the ~~STOP~~ OFF position. ECW 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 ~~Set timer of fan on Delay Relay 2MS, to 20 seconds at control panel UIC-AY101EWT-1.~~
Delete ex #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 ILC 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 ECW 198
- BB 2-27-96 8.1.13 ~~CLOSE~~ disconnect switch (see Step 8.1.1). ECW 198
- BB 2-27-96 8.1.14 ~~13~~ Move Spray Pump Handswitch HS-AY101EWSP-1A to ~~START~~ position. The Local ECW 198

- ~~contactor 1ms closes ECU 198~~
- ~~BB 2-27-96~~ 8.1.15¹⁴ Verify ~~DMM reads line voltage (120 V ac nominal):~~
~~contactor 1ms opens ECU 198~~
- ~~BB 2-27-96~~ 8.1.16 Verify ~~spray pump motor starter is ON.~~ the off ECU 198
- ~~BB 2-27-96~~ 8.1.17¹⁶ Move Spray Pump Handswitch HS-AY101EWSP-1A to ~~STOP~~ position.
- ~~BB 2-27-96~~ 8.1.18 Verify ~~DMM reads 0 V ac.~~ ~~contactor 1ms closes ECU 198~~
- ~~BB 2-27-96~~ ~~8.1.19~~ 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~~ position.
the local ECU 198
- ~~BB 2-27-96~~ 8.1.21¹⁹ Move ILC Shorting Switch ~~LL60~~ between Terminals ~~"G"~~ and ~~LL60~~ to the OFF or OPEN position.
"H" ECU 198
- ~~BB 2-27-96~~ 8.1.20 Verify ~~contactor 1ms 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 1ms opens~~ the ECU 198
- ~~BB 2-27-96~~ 8.1.23 Return ILC Shorting Switch ~~LL60~~ to ~~ON~~ or ~~CLOSED~~ position.
"L"
- ~~BB 2-27-96~~ 8.1.24 Verify ~~DMM reads line voltage.~~ ~~contactor 1ms remains open~~
~~move ILC shorting switch "H" to the on position ECU 198~~
- ~~BB 2-27-96~~ 8.1.25²⁵ Open disconnect switch. (See step 8.1.12)
- ~~BB 2-27-96~~ 8.1.27²⁸ ~~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 1ms 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.
- ~~BB 3-4-96~~ 8.2.7 ~~Delete~~
~~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 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 #1
- ~~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. ECU 198
- ~~BB 2-27-96~~ 8.2.17 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 Verify ^{ECU 198} 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 Verify ^{ECU 198} 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 Verify ^{ECU 198} 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} Disconnect DMM from UIC Terminals 2 and 11. Move spray pump handswitch to the off position.
- ~~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 OFC position.
- ~~BB 2-27-96~~ 8.3.3 Verify that Sump Water Make-up Isolation Valve HV-AY101RW-1 is CLOSED.

- ~~BB 227-96~~ 8.3.4 Verify that the spray pump sump is dry or water level is below the LSL-AY101EWT-1 level probes.
- ~~BB 3-4-96~~ 8.3.5 Remove cover of pan heater thermostat housing and adjust thermostat to ~~maximum~~ ^{minimum} temperature setting (150-degrees).
~~exception #2~~ ^{OFF}
- ~~BB 227-96~~ ~~8.3.6~~ ~~Connect a DMM between Control Panel Terminals 2 and 20-~~
~~Delete ECU 19B~~
- ~~BB 227-96~~ 8.3.7 6 CLOSE disconnect switch.
- ~~BB 227-96~~ 8.3.8 7 Move the heater control handswitch to the ON position.
~~contactor IC closes~~ ^{ECU 19B}
- ~~BB 227-96~~ 8.3.9 8 Verify ~~DMM reads line voltage (120 V ac nominal).~~
- ~~BB 227-96~~ 8.3.10 4 Move "1LC" Switch "LLCO" to the OFF or OPEN position.
- ~~BB 227-96~~ 8.3.11 10 Verify ~~DMM reads 0 V ac.~~ ^{ECU 19B} ~~contactor IC opens~~
- ~~BB 227-96~~ 8.3.12 11 Move "1LC" Switch "LLCO" to the ON or CLOSED position.
- ~~BB 227-96~~ 8.3.13 12 Verify ~~DMM reads line voltage.~~ ^{ECU 19B} ~~contactor IC closes~~
- ~~BB 3-4-96~~ 8.3.14 13 Adjust pan heater thermostat to ~~minimum~~ ^{maximum} setting (0 °F).
~~150~~ ^{EX #3}
- ~~BB 227-96~~ 8.3.15 14 Verify ~~DMM reads 0 V ac.~~ ^{ECU 19B} ~~contactor IC opens~~
- ~~BB 3-4-96~~ 8.3.16 15 Adjust pan heater thermostat to ~~maximum~~ ^{minimum} setting (150 °F).
~~EX #2~~
- ~~BB 227-96~~ 8.3.17 14 Verify ~~DMM reads line voltage.~~ ^{ECU 19B} ~~contactor IC closes~~
- ~~BB 227-96~~ 8.3.18 17 Move heater control handswitch to the OFF position.
- ~~BB 227-96~~ 8.3.19 18 Verify ~~DMM reads 0 V ac.~~ ^{ECU 19B} ~~contactor IC opens~~
- ~~BB 227-96~~ 8.3.20 14 OPEN disconnect switch.
- ~~BB 227-96~~ ~~8.3.21~~ ~~Disconnect DMM.~~ ~~Delete ECU 19B~~
- ~~BB 227-96~~ 8.3.22 20 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)
- ~~BB 227-96~~ 8.4.1 Verify that the disconnect switch to Fluid Cooler UIC-AY101EWT-1 is OPEN or OFF.
- ~~BB 227-96~~ 8.4.2 Verify that Spray Pump Handswitch HS-AY101EWSP-1A is in the ~~STOP~~ ^{OFF} position.
~~ECU 19B~~
- ~~BB 227-96~~ 8.4.3 Verify that Sump Water Make-up Isolation Valve HV-AY101RW-1 is CLOSED.
- ~~BB 227-96~~ 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 1LC 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 1LC 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 1LC energizes the valve).
- BB 2-27-96 8.4.11 Move 1LC 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 1LC 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 1LC 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 1LC 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 198} Close disconnect switch.
- BB 2-27-96 8.5.4 ^{ECN 198} 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 Verify ^{contactor M1 is closed ECN 198} 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 Pump AY101-EW-P-1A motor starter is OFF.
contactor m1 is open ECU 198
- 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.
ECU 198
- 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.
contactor m1 is closed ECU 198
- BB 2-27-96 8.6.8 Verify 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.
contactor m1 is open ECU 198
- BB 2-27-96 8.6.12 Verify 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 3)⁴ ECU 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
- ~~88 2.27.96~~ 8.7.2 Verify that Spray Pump Handswitch HS-AY102EWSP-1A is in the ~~STOP~~ ^{ECW 198} off position.
 - ~~88 2.27.96~~ 8.7.3 Verify that Fluid Cooler Fan Handswitch HS-AY102EWT-1A1 is in the ~~STOP~~ position.
 - ~~88 2.27.96~~ 8.7.4 Verify that Pan Heater Handswitch HS-AY102EWT-1A2 is in the OFF position.
 - ~~88 2.27.96~~ 8.7.5 Verify that Damper Actuator Handswitch HS-AY102EWT-1A3 is in the AUTO position.
 - ~~88 2.27.96~~ 8.7.6 Verify that sump water make-up Isolation Valve HV-AY102RW-1 is CLOSED.
 - ~~88 2.27.96~~ 8.7.7 Verify that the spray pump sump is dry or water level is below the LSL-AY102EWT-1 level probes.
 - ~~88 3.4.96~~ 8.7.8 ~~Set timer of fan on-Delay Relay 2MS, to 20 seconds at control panel UIC-AY102EWT-1.~~
^{Delete ex #1}
 - ~~88 2.27.96~~ 8.7.9 Disconnect Motor Leads AY102EWT1-1T1, AY102EWT1-1T2, and AY102EWT1-1T3 from spray pump.
 - ~~88 2.27.96~~ 8.7.10 Disconnect Power Leads AY102EWT1-3T1, AY102EWT1-3T2, and AY102EWT1-3T3 from pan heater.
 - ~~88 2.27.96~~ 8.7.11 Install shorting switches at UIC-AY102EWT-1 between LLC level probe terminals as follows:
 - ~~88 2.27.96~~ 8.7.11.1 Terminals "G" and "H," Switch "H" in the ON or CLOSED position.
 - ~~88 2.27.96~~ 8.7.11.2 Terminals "G" and "L," Switch "L" in the ON or CLOSED position.
 - ~~88 2.27.96~~ 8.7.11.3 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-AY102EWT-1 have been completed.
 - ~~88 2.27.96~~ ~~8.7.12~~ ~~Connect a DMM between UIC-AY102EWT-1 Terminals 2 and 4.~~
^{Delete ECW 198}
 - ~~88 2.27.96~~ 8.7.13¹² CLOSE disconnect switch (see Step 8.7.1). ^{ECW 198}
 - ~~88 2.27.96~~ 8.7.14¹³ Move Spray Pump Handswitch HS-AY102EWSP-1A to ~~START~~ ^{the Local} position.
 - ~~88 2.27.96~~ 8.7.15¹⁴ Verify ~~DMM reads line voltage (120 V ac nominal).~~ ^{contactor 1ms closes ECW 198}
 - ~~88 2.27.96~~ 8.7.16 ~~Verify spray pump motor starter is ON.~~ ^{verify contactor 1ms opens}
 - ~~88 2.27.96~~ 8.7.17¹⁵ Move Spray Pump Handswitch HS-AY102EWSP-1A to ~~STOP~~ ^{ECW 198} position.
 - ~~88 2.27.96~~ 8.7.18 ~~Verify DMM reads 0 V ac. Dcldc.~~ ^{ECW 198}
 - ~~88 2.27.96~~ 8.7.19¹⁸ Verify spray pump motor starter is OFF. ^{ECW 198}
 - ~~88 2.27.96~~ 8.7.20¹⁷ Move Spray Pump Handswitch HS-AY102EWSP-1A to ~~START~~ ^{the Local} position.

- "H" ECU 198
- ~~BB 2-27-96~~ 8.7.21¹⁹ Move ILC Shorting Switch ~~LLCO~~ between Terminals "0" and LLCO to the OFF or OPEN position.
Verify contactor 1ms remains closed 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 ~~LLCO~~ to ON ~~or CLOSED~~ position.
- ~~BB 2-27-96~~ 8.7.24 Verify ~~DMM reads line voltage~~. ^{ECU 198} Contactor 1ms remains open
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, Sh ⁴)
- ~~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~~ OFF position.
- ~~BB 2-27-96~~ 8.8.3 Verify that Fluid Cooler Fan Handswitch HS-AY102EWT-1A1 is in the ~~STOP~~ 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 ~~Set timer of fan on Delay Relay ZMS, to 20 seconds at Control Panel UIC-AY102EWT-1.~~
~~Delete Ex # 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.
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). ⁸
- ~~BB 2-27-96~~ 8.8.13 Move Cooling Fan Handswitch HS-AY102EWT-1A1 ^{the local} to START position.
that contactor zms 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~~ ^{maximum} temperature setting (±50 degrees). ^{ECW 198}
~~Delete ECW 198~~
- ~~BB 2-27-96~~ ~~8.9.6~~ ~~Connect a DMM between Control Panel Terminals 2 and 20.~~
- ~~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 1C 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.

- ~~8.9.11~~ 8.9.11¹⁰ Verify ~~DMM reads 0 V ac.~~ Contactor IC opens
- ~~8.9.12~~ 8.9.12¹¹ Move "1LC" Switch "LLCO" to the ON or CLOSED position.
- ~~8.9.13~~ 8.9.13¹² Verify ~~DMM reads line voltage.~~ Contactor IC closes
- ~~8.9.14~~ 8.9.14¹³ Adjust pan heater thermostat to ~~minimum~~ setting (90 °F). ^{maximum ex=3 150} ECN 198
- ~~8.9.15~~ 8.9.15¹⁴ Verify ~~DMM reads 0 V ac.~~ Contactor IC opens
- ~~8.9.16~~ 8.9.16¹⁵ Adjust pan heater thermostat to ~~maximum~~ setting (150 °F). ^{minimum ex=2 0°F}
- ~~8.9.17~~ 8.9.17¹⁶ Verify ~~DMM reads line voltage.~~ Contactor IC closes
- ~~8.9.18~~ 8.9.18¹⁷ Move heater control handswitch to the OFF position.
- ~~8.9.19~~ 8.9.19¹⁸ Verify ~~DMM reads 0 V ac.~~ Contactor IC opens
- ~~8.9.20~~ 8.9.20¹⁹ OPEN disconnect switch.
- ~~8.9.21~~ ^{Delete ECN 198}
Disconnect DMM.
- ~~8.9.22~~ 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. ³₄)
- ~~8.10.1~~ 8.10.1 Verify that the disconnect switch to Fluid Cooler UIC-AY102EWT-1 is OPEN or OFF.
- ~~8.10.2~~ 8.10.2 Verify that Spray Pump Handswitch HS-AY102EWSP-1A is in the ~~STOP~~ OFF position.
- ~~8.10.3~~ 8.10.3 Verify that Sump Water Make-up Isolation Valve HV-AY102RW-1 is CLOSED.
- ~~8.10.4~~ 8.10.4 Verify that the spray pump sump is dry or the water level is below the LSL-AY102EWT-1 level probes.
- ~~8.10.5~~ 8.10.5 CLOSE disconnect switch (see Step 8. ¹⁰~~4~~1).
- ~~8.10.6~~ 8.10.6 Verify water make-up Solenoid Valve EV-AY102EWT-1A1 is DE-ENERGIZED.
- ~~8.10.7~~ 8.10.7 Move 1LC Shorting Switch "H" to the OFF or OPEN position.
- ~~8.10.8~~ 8.10.8 Verify water make-up Solenoid Valve EV-AY102EWT-1A1 is still DE-ENERGIZED.
- ~~8.10.9~~ 8.10.9 Move 1LC Shorting Switch "L" to the OFF or OPEN position.
- ~~8.10.10~~ 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).
- ~~8.10.11~~ 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, Sh⁴/₃)
- 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. ⁴3)
- ~~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 ^{ECN 198} Close disconnect switch.
- ~~BB 2-27-96~~ 8.12.4 ^{ECN 198} Place HS-AY102EWP-1B in the STOP position.
- ~~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-1B in the START position.
- ~~BB 2-27-96~~ 8.12.8 ^{contactor m1 is closed ECN 198} Verify 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-1B in the STOP position.
- ~~BB 2-27-96~~ 8.12.12 ^{contactor m1 is open ECN 198} Verify 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 ZMS, to 20 seconds at control panel UIC-AZ101EWT-1 Delete EX-1~~
- ~~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 1LC 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 LLCO, Switch LLCO 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.
- ~~BB 2-27-96~~ ~~9.1.12~~ ~~Delete ECA 19B~~
Connect a DMM between UIC-AZ101EWT-1 Terminals 2 and 4.
- ~~BB 2-27-96~~ 9.1.12 CLOSE disconnect switch (see Step 9.1.1).
- ~~BB 2-27-96~~ 9.1.14 Move Spray Pump Handswitch HS-AZ101EWSP-1A to ^{the local} START position.

- Contractor Ims Closes ECU 198
- ~~BB 2-27-96~~ 9.1.15¹⁴ Verify ~~DMM reads line voltage (120 V ac nominal).~~
- ~~BB 2-27-96~~ 9.1.16 Verify ~~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~~ 9.1.18¹⁸ Verify ~~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.
- ~~BB 2-27-96~~ 9.1.21¹⁹ Move ILC Shorting Switch ~~LL60~~ ^{"H" ECU 198} between Terminals "G" and ~~LL60~~ to the OFF or OPEN position.
- ~~BB 2-27-96~~ 9.1.20 Verify contactor Ims remains closed ECU 198
- ~~BB 2-27-96~~ 9.1.22²¹ Verify DMM reads 0 V ac. ~~move ILC Shorting Switch "L" to the off position~~
- ~~BB 2-27-96~~ 9.1.22 Verify contactor Ims opens ^{The ECU 198}
- ~~BB 2-27-96~~ 9.1.23 Return ILC Shorting Switch ~~LL60~~ ^{"L"} to ON or CLOSED position.
- ~~BB 2-27-96~~ 9.1.24 Verify DMM reads line voltage. ~~contactor Ims remains open~~
- ~~BB 2-27-96~~ 9.1.25 ~~move ILC Shorting Switch "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.~~
- 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 3-4-96~~ 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
- BB 2-27-96 9.2.11 ~~12~~ Connect a DMM between Terminals 2 and 11. ECU 19B
- BB 2-27-96 9.2.12 ~~11~~ 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 19B
- Delete 9.2.14 Verify DMM reads line voltage (120 V ac nominal) after approximately 20 seconds.
EXCEPTION #4
- 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 19B
- 9.2.17 Place temperature element in a container of cold water (Less than 60°F).
~~Adjust inlet 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 19B} contactor 2ms opens
- 9.2.20 Verify cooling fan motor stops rotating. ECU 19B
- 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 19B} 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 19B} 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 19B~~
- 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.

- ~~BB 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.
- ~~BB 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 ECW 198
- ~~BB 2-27-96~~ 9.3.7 CLOSE disconnect switch.
- ~~BB 2-27-96~~ 9.3.8 Move the heater control handswitch to the ON position.
- ~~BB 2-27-96~~ 9.3.9 Verify ~~DMM reads line voltage (120 V ac nominal).~~
Contractor 1C closes ECW 198
- ~~BB 2-27-96~~ 9.3.10 Move "1LC" Switch "LLCO" to the OFF or OPEN position.
- ~~BB 2-27-96~~ 9.3.11 Verify ~~DMM reads 0 V ac.~~ ECW 198 Contractor 1C opens
- ~~BB 2-27-96~~ 9.3.12 Move "1LC" Switch "LLCO" to the ON or CLOSED position.
- ~~BB 2-27-96~~ 9.3.13 Verify ~~DMM reads line voltage.~~ ECW 198 Contractor 1C closes
- ~~BB 3-4-96~~ 9.3.14 Adjust pan heater thermostat to ~~minimum~~ ^{maximum EX #2} setting (150 °F).
- ~~BB 2-27-96~~ 9.3.15 Verify ~~DMM reads 0 V ac.~~ ECW 198 Contractor 1C opens
- ~~BB 3-4-96~~ 9.3.16 Adjust pan heater thermostat to ~~maximum~~ ^{minimum EX #2} setting (150 °F).
- ~~BB 2-27-96~~ 9.3.17 Verify ~~DMM reads line voltage.~~ ECW 198 Contractor 1C closes
- ~~BB 2-27-96~~ 9.3.18 Move heater control handswitch to the OFF position.
- ~~BB 2-27-96~~ 9.3.19 Verify ~~DMM reads 0 V ac.~~ ECW 198 Contractor 1C opens
- ~~BB 2-27-96~~ 9.3.20 OPEN disconnect switch.
- ~~9.3.21~~ ~~Disconnect DMM.~~ Delete ECW 198
- ~~BB 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)
- ~~BB 2-27-96~~ 9.4.1 Verify that the disconnect switch to Fluid Cooler UIC-AZ101EWT-1 is OPEN or OFF.
- ~~BB 2-27-96~~ 9.4.2 Verify that Spray Pump Handswitch HS-AZ101EWSP-1A is in the ~~STOP~~ ^{OFF} position.
- ~~BB 2-27-96~~ 9.4.3 Verify that Sump Water Make-up Isolation Valve HV-AZ101RW-1 is CLOSED.
- ~~BB 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.
- BB 2-27-96 9.5.2/3 Place HS-AZ101EWP-1A 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-1A in the START position.
- BB 2-27-96 9.5.8 Verify ^{constructor mt. is closed ECW 19B} Pump AZ101-EW-P-1A motor starter is ON.
- 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 motor starter is OFF.
contactor m1 is open ECU 198
- 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 motor starter is ON.
contactor m1 is closed ECU 198
- 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 motor starter is OFF.
contactor m1 is open ECU 198
- 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.

- BB 2-27-96 9.7.2 Verify that Spray Pump Handswitch HS-AZ102EWSP-1A is in the ^{OFF} STOP position.
- BB 2-27-96 9.7.3 Verify that Fluid Cooler Fan Handswitch HS-AZ102EWT-1A1 is in the STOP position.
- BB 2-27-96 9.7.4 Verify that Pan Heater Handswitch HS-AZ102EWT-1A2 is in the OFF position.
- BB 2-27-96 9.7.5 Verify that Damper Actuator Handswitch HS-AZ102EWT-1A3 is in the AUTO position.
- BB 2-27-96 9.7.6 Verify that sump water make-up Isolation Valve HV-AZ102RW-1 is CLOSED.
- BB 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.
- ~~BB 2-27-96~~ 9.7.8 ~~Set timer of fan on Delay Relay ZMS, to 20 seconds at control panel UIC-AZ102EWT-1. Delete Ex #7~~
- BB 2-27-96 9.7.9 Disconnect Motor Leads AZ102EWT1-1T1, AZ102EWT1-1T2, and AZ102EWT1-1T3 from spray pump.
- BB 2-27-96 9.7.10 Disconnect Power Leads AZ102EWT1-3T1, AZ102EWT1-3T2, and AZ102EWT1-3T3 from pan heater.
- BB 2-27-96 9.7.11 Install shorting switches at UIC-AZ102EWT-1 between LLC level probe terminals as follows:
- BB 2-27-96 9.7.11.1 Terminals "G" and "H," Switch "H" in the ON or CLOSED position.
- BB 2-27-96 9.7.11.2 Terminals "G" and "L," Switch "L" in the ON or CLOSED position.
- BB 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 ECW 198} ~~Connect a DMM between UIC-AZ102EWT-1 Terminals 2 and 4.~~
- BB 2-27-96 9.7.13 CLOSE disconnect switch (see Step 9.7.1).
- BB 2-27-96 9.7.14 Move Spray Pump Handswitch HS-AZ102EWSP-1A to START position.
- BB 2-27-96 9.7.15 Verify DMM reads line voltage (120 V ac nominal).
- BB 2-27-96 9.7.16 Verify spray pump motor starter is ON.
- BB 2-27-96 9.7.17 Move Spray Pump Handswitch HS-AZ102EWSP-1A to STOP position.
- ~~9.7.18~~ ^{Delete ECW 198} ~~Verify DMM reads 0 V ac.~~
- BB 2-27-96 9.7.18 Verify ^{contractor lms closes ECW 198} spray pump motor starter is OFF.
- BB 2-27-96 9.7.20 Move Spray Pump Handswitch HS-AZ102EWSP-1A to ^{The local} START position.

- "H"
- ~~BB 2-27-96~~ 9.7.21¹⁹ Move ILC Shorting Switch ~~LL60~~ between Terminals "G" and LL60 to the OFF or OPEN position.
Verify contactor Ims 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
- ~~BB 2-27-96~~ 9.7.22²¹ Verify contactor Ims opens
- ~~BB 2-27-96~~ 9.7.22²¹ Return ILC Shorting Switch ~~LL60~~ to ^{the} ON or CLOSED position.
"L" ECU19B
- ~~BB 2-27-96~~ 9.7.24 Verify DMM reads line voltage. Contactor Ims remains open
- ~~BB 2-27-96~~ 9.7.25²⁵ move ILC Shorting switch "H" to the on position
- ~~BB 2-27-96~~ 9.7.25²⁸ Open disconnect switch. (See step 9.7.12) ECU 19B
- ~~BB 2-27-96~~ 9.7.27 move spray pump handswitch HS-AZ102EWSP-1A to the off position
- ~~BB 2-27-96~~ 9.7.26 Disconnect DMM from UIC Terminals 2 and 4. ECU19B
Verify contactor Ims 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~~ 9.8.12¹¹ CLOSE disconnect switch (see Step 9.8.1).
- ~~BB 2-27-96~~ 9.8.13 Move Cooling Fan Handswitch HS-AZ102EWT-1A1 to ^{the local} 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. ^{ECN 198}
~~Place temperature element in a container of cold water (Less than 60°F)~~
- 9.8.17 ~~Adjust inlet damper temperature controller range indicator to 10°F.~~
- 9.8.18 Verify that inlet fan damper position indicator moves to the CLOSED position.
- 9.8.19 Verify ^{ECN 198} DMM reads 0 V ac. contactor Zms opens
- 9.8.20 Verify cooling fan motor stops rotating. ^{ECN 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 Zms closes~~ ^{ECN 198}
- 9.8.24 Move Fan Control Handswitch HS-AZ102EWT-1A1 to the ^{off} STOP position.
- 9.8.25 ^{ECN 198} Verify DMM reads 0 V ac. contactor Zms opens
- 9.8.26 OPEN disconnect switch. ^{ECN 198}
- 9.8.27 ~~move spray pump handswitch to the off position~~
~~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)

- ~~BB 2-27-96~~ 9.9.1 Verify disconnect switch of fluid cooler is OPEN or OFF.
- ~~BB 2-27-96~~ 9.9.2 Verify that Spray Pump Handswitch HS-AZ102EWSP-1A is in the STOP position.
- ~~BB 2-27-96~~ 9.9.3 Verify that Sump Water Make-up Isolation Valve ^H EV-AZ102RW-1 is CLOSED.
- ~~BB 2-27-96~~ 9.9.4 Verify that the spray pump sump is dry or water level is below the LSL-AZ102EWT-1 level probes.
- ~~BB 2-27-96~~ 9.9.5 Remove cover of pan heater thermostat housing and adjust thermostat to maximum temperature setting (150 degrees).
- ~~9.9.6~~ ~~Connect a DMM between Control Panel Terminals 2 and 20.~~ ^{Delete ECN 198}
- ~~BB 2-27-96~~ 9.9.7.6 CLOSE disconnect switch.
- ~~BB 2-27-96~~ 9.9.7.7 Move the heater control handswitch to the ON position.
- ~~BB 2-27-96~~ 9.9.7.8 ^{contactor 1C closes ECN 198} Verify DMM reads line voltage (120 V ac nominal).
- ~~BB 2-27-96~~ 9.9.7.9 Move "1LC" Switch "LLCO" to the OFF or OPEN position.

- BB 2-27-96 9.9.11¹⁰ Verify ~~DMM reads 0 V ac.~~ ^{ECW 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.~~ ^{ECW 198} Contactor IC closes
- BB 2-4-96 9.9.14¹³ Adjust pan heater thermostat to ~~minimum~~ ^{maximum EX #3} setting (150 °F).
- BB 2-27-96 9.9.15¹⁴ Verify ~~DMM reads 0 V ac.~~ ^{ECW 198} Contactor IC opens
- BB 2-4-96 9.9.16¹⁵ Adjust pan heater thermostat to ~~maximum~~ ^{maximum EX #2} setting (150 °F).
- BB 2-27-96 9.9.17¹⁶ Verify ~~DMM reads line voltage.~~ ^{ECW 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.~~ ^{ECW 198} Contactor IC opens
- BB 2-27-96 9.9.20¹⁴ OPEN disconnect switch.
Delete ECW 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 m1 is closed ECW19B} 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 ECW19B} 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 AZ1Q2-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 m2 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 m2 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-ATR-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							
<input type="checkbox"/> Retest Approved and Accepted		<input type="checkbox"/> Exception Accepted-as-is*				<input type="checkbox"/> Other*	
* Explanation							
Approver 1		Date		Approver 2		Date	
Approver 3		Date		Approver 4		Date	

SAMPLE

KEH-428 (6-85)

TEST EXCEPTION LOG

Date	Description	Disposition

TEST EXCEPTION LOG

WHC - 5D-0030 - AT R. 004, Rev 0

TE No.	Date	Description	Disposition	Date Closed
001	2/23/96	SETTING TIME DELAY RELAY	ACCEPTED AS IS	
002	2/23/96	INCORRECT TEMPERATURE SETTINGS	ACCEPTED AS IS	
003	2/23/96	INCORRECT TEMPERATURE SETTINGS	ACCEPTED AS IS	
004	2/23/96	DELETE SECTION 9.2	ACCEPTED AS IS	
005	2/23/96	DELETE SECTION 9.3	ACCEPTED AS IS	
006	2/23/96	DELETE 7.2.7	ACCEPTED AS IS	
007	2/23/96	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 ICFKH		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	
				<i>Bruce Bels</i>		4-25-96	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
<i>M.D. Hardley</i> BTEOPS		4-15-96		<i>D.B. Cle</i>		4/25/96	
Field Engineering		Date		Test Director (Name/Organization)		Date	
				<i>David Thomas</i> KEIT		4/23/96	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
<i>M.A. Friedlich</i>		4/23/96		<i>S. Kender</i>		4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
<input type="checkbox"/> Retest: Approved and Accepted				<input checked="" type="checkbox"/> Exception Accepted-as-is*		<input type="checkbox"/> Other*	
* Explanation THE ADJUSTABLE TRIP RELAYS WERE MISIDENTIFIED AS TIME DELAY RELAYS.							
Approver 1		Date		Approver 2		Date	
<i>M.D. Hardley</i>		4-16-96		<i>D.B. Cle</i>		4-16-96	
Approver 3		Date		Approver 4		Date	

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

<u>STEP NUMBER</u>	<u>PAGE NUMBER</u>
8.1.8	11
8.2.7	12
8.2.14	13
8.7.8	17
8.8.7	18
8.8.14	18
9.1.8	23
9.2.7	24
9.2.14	25
9.7.8	29
9.8.7	30
9.8.14	30

EXCEPTION NO. W16-SD-W030-ATR-004-007		Project No. W030		ATP No. W16-SD-030-ATR-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 SAYS "ADJUST PAN HEATER THERMOSTAT TO MAXIMUM SETTING (150°F). IT SHOULD SAY "ADJUST PAN HEATER THERMOSTAT TO MINIMUM SETTING (0°F).							
Objector 1 (Name/Organization)				Objector 2 (Name/Organization)			
Planned Action CHANGE "MAXIMUM" TO "MINIMUM" AND "150°F" TO "0°F".							
Action Taken THE CHANGES WERE MADE AND TESTING CONTINUED.							
RETEST EXECUTION AND ACCEPTANCE							
Retest Installation Contractor		Date		Recorder		Date	
				Bum Bahs		4-26-96	
Witness 1 (Name/Organization)		Date		Witness 2 (Name/Organization)		Date	
M. D. Hardy, ECFORS		4-15-96		D.B. Cole		4/25/96	
Field Engineering		Date		Test Director (Name/Organization)		Date	
				Gerald Hayes ICFRI		4/23/96	
Design Engineering (Author of ATP)		Date		A-E Project Engineer		Date	
Mark A. Friedland		4/23/96		J. Schmidt		4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR							
<input type="checkbox"/> Retest Approved and Accepted		<input checked="" type="checkbox"/> Exception Accepted-as-is*				<input type="checkbox"/> Other*	
* Explanation THE OPERATION OF THE PAN HEATER CONTROLLER WAS IDENTIFIED INCORRECTLY.							
Approver 1		Date		Approver 2		Date	
M. D. Hardy		4-16-96		D.B. Cole		4-16-96	
Approver 3		Date		Approver 4		Date	

<u>STEP NUMBER</u>	<u>PAGE NUMBER</u>
8.3.5	14
8.3.15	14
8.9.5	19
8.9.15	20
9.3.5	26
9.3.15	26
9.9.5	31
9.9.15	32

EXCEPTION NO. WHC-5D-W030-ATP-004-003		Project No. W030	ATP No. WHC-5D-W030-ATR-004	Rev. 0
Recorded by GERALD HAYES		Organization ICFHM	Date Recorded 2/28/96	ATP Page No. SEE ATTACHMENT
Step No. SEE ATTACHMENT	Requirement			
Description of Problem THE ATP SAYS "ADJUST PAN HEATER THERMOSTAT TO MINIMUM SETTING (0°F). IT SHOULD SAY "ADJUST PAN HEATER THERMOSTAT TO MAXIMUM SETTING (150°F).				
Objector 1 (Name/Organization)		Objector 2 (Name/Organization)		
Planned Action CHANGE "MINIMUM" TO "MAXIMUM" AND "0°F" TO "150°F"				
Action Taken THE CHANGES WERE MADE AND TESTING CONTINUED.				
RETEST EXECUTION AND ACCEPTANCE				
Retest Installation Contractor	Date	Recorder	Date	
		<i>Brian Batts</i>	4-25-96	
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date	
<i>M.D. Harding</i> ETEOPS	4-15-96	<i>D.B. Cole</i>	4/25/96	
Field Engineering	Date	Test Director (Name/Organization)	Date	
		<i>Gerald Hayes</i> ICFHM	4/23/96	
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date	
<i>Mark A. Fiedler</i>	4/23/96	<i>J. Hender</i>	4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR				
<input type="checkbox"/> Retest: Approved and Accepted <input checked="" type="checkbox"/> Exception Accepted-as-is* <input type="checkbox"/> Other*				
* Explanation THE OPERATION OF THE PAN HEATER CONTROLLER WAS IDENTIFIED INCORRECTLY.				
Approver 1	Date	Approver 2	Date	
<i>M.D. Harding</i>	4-16-96	<i>D.B. Cole</i>	4/16/96	
Approver 3	Date	Approver 4	Date	

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ATTACHMENT TO TEST EXCEPTION WHC-SD-W030-004-003. Rev 0

<u>STEP NUMBER</u>	<u>PAGE NUMBER</u>
8.3.13	14
8.9.13	20
9.3.13	26
9.9.13	32

EXCEPTION NO. WHC-5D-W030-ATP-004-004		Project No. W030	ATP No. WHC-5D-W030-ATR-004	Rev. 0
Recorded by GERALD HAYES		Organization ICFRI	Date Recorded 2/28/96	ATP Page No. 24,25
Step No. SECTION 9.2	Requirement			
Description of Problem SECTION 9.2 PROVIDES DIRECTIONS TO TEST THE OPERATION OF FLUID COOLER FAN LIC-AZ1010WT-1M1. 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	
		<i>Bum Bels</i>	4-25-96	
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date	
<i>M.D. Hardy</i> EIT OPS	4-15-96	<i>D.B. Cole</i>	4/23/96	
Field Engineering	Date	Test Director (Name/Organization)	Date	
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date	
<i>Mark A. Friederl</i>	4/23/96	<i>H. Hender</i>	4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR				
<input type="checkbox"/> Retest: Approved and Accepted		<input checked="" type="checkbox"/> Exception Accepted-as-is*		<input type="checkbox"/> Other*
* Explanation DELETION OF SECTION 9.2 DOES NOT COMPROMISE ANY OTHER SECTIONS OF THIS ATP.				
Approver 1	Date	Approver 2	Date	
<i>M.D. Hardy</i>	4-16-96	<i>D.B. Cole</i>	4/16/96	
Approver 3	Date	Approver 4	Date	

EXCEPTION NO. WHC-5D-W030-ATP-004-005		Project No. W030	ATP No. WHC-5D-W030-ATR-004	Rev. 0
Recorded by GERALD HAYES		Organization ICFRI	Date Recorded 2/23/96	ATP Page No. 30.31
Step No. SECTION 9.8	Requirement			
Description of Problem SECTION 9.8 PROVIDES DIRECTIONS TO TEST THE OPERATION OF FLUID COOLER FAN UIC-AZIOZEWI-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	
		<i>Brian Bels</i>	4-25-96	
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date	
<i>M.D. Harding</i> RTFOPS	4-15-96	<i>D.B. Cole</i>	4/25/96	
Field Engineering	Date	Test Director (Name/Organization)	Date	
		<i>David Wayne Keith</i>	4/25/96	
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date	
<i>Mark A. Friedrich</i>	4/23/96	<i>M. Friedrich</i>	4/27/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR				
<input type="checkbox"/> Retest Approved and Accepted		<input checked="" type="checkbox"/> Exception Accepted-as-is*		<input type="checkbox"/> Other*
* Explanation DELETION OF SECTION 9.8 DOES NOT COMPROMISE ANY OTHER SECTIONS OF THIS ATP.				
Approver 1	Date	Approver 2	Date	
<i>M.D. Harding</i>	4-16-96	<i>D.B. Cole</i>	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-ATR-004	Rev. 0
Recorded by GERALD HAYES		Organization ICFKA	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	
		<i>Bern Bahs</i>	4-25-96	
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date	
<i>M.D. Harding</i> ETFOPS 4-15-96	4-15-96	<i>D.B. Cole</i>	4/25/96	
Field Engineering	Date	Test Director (Name/Organization)	Date	
		<i>Donald M. ... KEA</i>	4/23/96	
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date	
<i>Mark A. Fiedler</i>	4/23/96	<i>H. Hendri</i>	4/23/96	
APPROVAL AND ACCEPTANCE - OPERATING CONTRACTOR				
<input type="checkbox"/> Retest Approved and Accepted		<input checked="" type="checkbox"/> Exception Accepted-as-is*		<input type="checkbox"/> Other*
* Explanation THE PROCESS INSTRUMENT CALIBRATOR WAS NOT REQUIRED AS PART OF THIS ATP THEREFORE IT WAS DELETED.				
Approver 1	Date	Approver 2	Date	
<i>M.D. Harding</i>	4-16-96	<i>D.B. Cole</i>	4/16/96	
Approver 3	Date	Approver 4	Date	

EXCEPTION NO. WHC-SD-W030-ATP-004-007		Project No. W030	ATP No. WHC-SD-W030-ATR004	Rev. 0
Recorded by GERALD HAYES		Organization ICFKH	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
		<i>Bum Bels</i>	4-25-96
Witness 1 (Name/Organization)	Date	Witness 2 (Name/Organization)	Date
<i>M.D. Hardy</i> ETFOPS	4-15-96	<i>D.B. Blec</i>	4/25/96
Field Engineering	Date	Test Director (Name/Organization)	Date
		<i>Donald M. ...</i>	4/25/96
Design Engineering (Author of ATP)	Date	A-E Project Engineer	Date
<i>Mark A. Fiedler</i>	4/23/96	<i>J. ...</i>	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 <i>M.D. Hardy</i>	Date 4-16-96	Approver 2 <i>D.B. Blec</i>	Date 4/16/96
Approver 3	Date	Approver 4	Date