RELEASE AUTHORIZATION

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This document was reviewed following the
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APPROVED FOR PUBLIC RELEASE

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APPROVED FOR PUBLIC RELEASE		
7. Abstract This Acceptance Test Report (ATR) provides the record of the results of acceptance testing of the process air compressor and the associated closed loop cooling system which supply the 241-AW Tank Farm process air needs and are located in 241-AW-273.		
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ACCEPTANCE TEST REPORT FOR THE 241-T-701 INSTRUMENT AIR SYSTEM

Background:

The acceptance test procedure (ATP) WHC-SD-WM-ATP-044, for the compressed air system ("THE SYSTEM") at building 241-AW-273 was completed on March 11, 1993.

The system was upgraded via work package 2E-91-01227. The system was upgraded to provide a reliable source of compressed air to the tank farm. The upgrade included the demolition of the existing air compressor and associated piping, as well as the installation of a new air compressor with a closed loop cooling system. A compressed air cross-tie was added to allow the process air compressor to function as a back-up to the existing instrument air compressor.

Purpose of Test:

The purpose of the ATP was to achieve three primary objectives:

- Verify system upgrade in accordance with the design media.
- Provide functional test of system components and controls.
- Prepare the system for the Operational Test.

Results:

The ATP was successfully completed with thirteen exceptions, which were resolved prior to completing the acceptance test. Five of the exceptions were to clarify red-lines of the ATP and the remaining exceptions were repaired prior to completion of the testing. The repaired exceptions had no impact to safety or the environment and are briefly summarized below:

- #1 The direction of the flow arrows on the cross-tie was incorrect. The labels were replaced.
- #2 A Safety Relief Valve located on the compressed air piping between the air compressor and the aftercooler was not shown on the drawing and was not labeled. The SRV was added by ECN 192579 and labeled.
- #3 The coolant surge tank, TK-273-AW-7, was not labeled. The label was added.
- #4 The conduit run from Panelboard 241-AW-273 contains only 3 #8 wires instead of the 4 #8 wires specified on the drawing. Only 3 wires are necessary, 2 for power and 1 ground.
- #7 The coolant sight glass did not show coolant flow to the air compressor. Further troubleshooting discovered that the two valves which were to be removed from the compressor, per ECN 198275 note 15, were not removed and would not allow the coolant to reach the compressor. The valves were removed.
- #8 Compartment B-3 of MCC-241-AW-271 was not labeled. The label was installed.

- #9 The air compressor automatically shut down during testing because the closed loop cooling system flowswitch was located in a run of pipe which does not receive coolant flow until the coolant temperature exceeds 105°F. The flowswitch was relocated by ECN 190898 to the compressor coolant supply line which receives continuous coolant flow.
- #11 The flowswitch which was relocated by ECN 190898 failed to function and continuously indicated no coolant flow. A new flowswitch was installed per ECN 192579.

Conclusion:

Testing ensured that the system was installed per design, that its components function as required and that it is ready for operational testing and subsequent turnover to operations.

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1.0 INSTRUCTION SECTION

1.1 PURPOSE AND SCOPE

This Acceptance Test Procedure (ATP) will provide verification that the air lift circulator air compressor and the compressor cooling system were installed as specified in the design. This document was prepared in compliance with *WHC-CM-6-1, Standard Engineering Practices*, EP-4.2, *Testing Practices* and Appendix M, *Acceptance Test Procedures and Reports*. The ATP consists of a walkdown and an inspection to ensure that the new components and equipment have been correctly installed.

1.2 REFERENCES

1.2.1 REFERENCE DRAWINGS:

H-2-70322 Sh.1 Rev.13

H-2-93193 Sh.1 Rev.1

H-2-95219 Sh.1 Rev.0

H-2-70351 Sh.1 Rev.0

H-2-79872 Sh.1&2 Rev.1

H-2-95330 Sh.1 Rev.0

H-2-140525 Sh.1 Rev.0

1.2.2 REFERENCE ENGINEERING CHANGE NOTICES (ECN)

ECN 129736

ECN 190890

ECN 199380

1.2.3 REFERENCE SPECIFICATIONS

Ingersoll-Rand Operations Manual CVI File # 22131

WHC-CM-6-1, "Standard Engineering Practices", EP-4.2. "Testing Practices"

WHC-IP-0842 "Waste Tank Project Administration", Section 5.9 "Lockout/Tagout".

1.3 DEFINITIONS

Definition of uncommon terms used in this document which may be misunderstood.

1.3.1 ALC: Air Lift Circulator

1.3.2 BUMP: Momentarily energize a component to verify a correct electrical connection. Switching it on, 1-2 seconds maximum, and off.

1.4 RESPONSIBILITIES

The test shall be performed by KEH personnel, under the direction of a WHC Major Maintenance Representative. Quality Control hold points shall be witnessed and signed off by KEH QC personnel (Acceptance Inspector), with the exception of the installation records review, which shall be performed by WHC QC. KEH personnel shall resolve any exceptions (with the approval of WHC Cognizant Engineers and WHC QA Engineering), and complete any needed repair/rework of the system.

The Test Director shall be a person technically qualified and knowledgeable of the safety requirements associated with the testing. The Test Director is responsible for assuring that the test is performed in accordance with this document. The Test Director's duties include but are not limited to coordinating and overseeing the performance of the test, signing for the completion of each indicated step, and contacting the appropriate personnel to witness hold points and to resolve exceptions.

The Electrical and Air Compressor Cognizant Engineers (or designees) and a WHC Operator shall perform a walkdown of the system, review and approve exception resolutions, and accept the test results. In addition, the Air Compressor Cognizant Engineer (or designee) shall issue the Acceptance Test Report. The Facility Cognizant Engineer shall review and accept the results of the test. Facility Operations shall assist in performance of the test. WHC Quality Assurance shall review and approve exception resolutions, and shall review and accept the test results. WHC Quality Control shall perform designated portions of the inspection. Safety Assurance shall review and accept the test results.

1.5 DESCRIPTION OF THE SYSTEM

Outside air is taken in, filtered and silenced at a spot some distance from gaseous effluents that may be in the area. The intake also is at a height above the ground likely to further ensure purity of intake air.

The air is compressed to a selected pressure and cooled to within a standard acceptable range of temperature. At the aftercooler a condensate drain is available to automatically remove much of the condensate from the air cooling process. Air is then suitable for use as process air to the air lift circulators. The process air system is available for use as an instrumentation air backup via a manual valve and cross tie.

The compressor system includes the following components:

- o 40 HP RECIPROCATING AIR COMPRESSOR (Ingersoll-Rand 9x7ESV-1PNL)
- o COOLING SYSTEM (Hydr-O-Thrift CD-15-9, 2-pumps and control unit)
- o HEAT EXCHANGER (Liebert Direct Drive Dry-Cooler model 109)

1.6 ACCEPTANCE TEST

The Acceptance Test consists of the following:

- 1.6.1 Walkdown of the system by the Cognizant Engineers and a WHC Operator, and an inspection of selected characteristics by the Acceptance Inspector.
- 1.6.2 Power test of existing equipment.
- 1.6.3 Initial Startup of New Equipment.
- 1.6.4 Test of system controls.

1.7 TEST DATA RECORDING INSTRUCTIONS

Throughout the procedure, spaces are provided for the Test Director's initials. An initial in the space provided indicates that the step was performed and/or that the conditions conform to the description. Where required, additional spaces are provided for Cognizant Engineer and Acceptance Inspector initials or signatures. A notation of AI HOLD in the left margin designates a Acceptance Inspector hold point; a COG notation designates an Air Compressor Cognizant Engineer and/or Electrical Cognizant Engineer hold point. Cognizant Engineer designees may initial or sign off on COG hold points. As used in this document, "Cognizant Engineer" shall be understood to include Cognizant Engineer designees.

Any exceptions (deviations from design requirements or stated operational limits) that arise during the test will be recorded on an ATP Exception Sheet and the exception number shall be noted next to the procedure step involved. Exception Sheets are not needed for steps that are followed by rework or recovery instructions. Exception resolutions may include troubleshooting and repair instructions. The resolution for each exception is subject to approval by the Air Compressor Cognizant Engineer or Electrical Cognizant Engineer as applicable. WHC Quality Assurance Engineering shall also review and approve each exception; this approval may be obtained at the time the resolution is written, or may be postponed until the QA Engineer reviews the test results, at the discretion of the Test Director. The Cognizant Engineer shall decide whether to continue the test after the discovery of an exception. The test shall not continue without resolving and repairing an exception unless the Cognizant Engineer determines that the exception will not jeopardize personnel or equipment.

If the procedure requires modification due to test circumstances, the Cognizant Engineers or representatives may red-line the ATP Record Copy. Changes in the test sequence may be made using this method by the Cognizant Engineer. The initials of the person making the change, and the date, shall be recorded next to the red-line change. If necessary for clarity, the change may be described on an ATP Exception Sheet. QA

approval is not needed on exception sheets that are used only to clarify red-line procedure changes.

After the test is complete, the ATP Execution and Acceptance Sheet shall be completed as follows.

- 1.7.1 Check the applicable space on the ATP Execution and Acceptance Sheet (attached) indicating whether the ATP has been performed with exception or without exception.
- 1.7.2 The test performers shall sign and date the sheet in the spaces provided. Each persons printed name shall appear next to their signature.
- 1.7.3 After the ATP execution section is completed, and all the exceptions have been resolved, the ATP Acceptance signatures shall be obtained.
- 1.7.4 A copy of the completed test shall be forwarded to the air Compressor Cognizant Engineer. The master copy shall accompany the work package.

2.0 TEST EXECUTION SECTION

2.1 EQUIPMENT REQUIRED

The Contractor shall supply all test equipment unless otherwise noted. All test instruments shall have a valid calibration stamp attached that indicates a calibration traceable to the National Institute of Standards and Technology.

- 2.1.1 Volt-ohmmeters, portable, 0 to 600V ac/dc.

MAKE/MODEL: Fluke 23 SYN: W802977 CAL. DATE: 3-3-93 INIT. CLK 2-8-93

- 2.1.2 Ammeter (0-100 Amp AC scale)

MAKE/MODEL: Impulse SYN: 045356 CAL. DATE: 11-3-93 INIT. CLK 2-8-93

- 2.1.3 Eye and Ear protection required for area of compressor when it is operating.

- 2.1.4 Ethylene Glycol Emergency Spill Kit.

2.2 LOCK AND TAG

Applicable crafts personnel will perform the following steps, and the test director shall initial the space provided. Additional spaces are provided where necessary for Cognizant Engineer and Acceptance Inspector initials. Locks and tags shall be applied and/or removed in accordance with WHC-IP-0842 "Waste Tank Project Administration", Section 5.9 "Lockout/Tagout".

- OK, 2-8-93*
- 2.2.1 Perform Zero energy check, ~~Lock and Tag~~ as necessary to conform to the configuration detailed in Table 1 located in the back of this document. *See Exception A OK 2-8-93*
- 2.2.2 Set all equipment controls to the "OFF" position.
- a. Air Lift Circulator (ALC) Air Compressor Control Switch. (SS-273-AW-1) (H-2-140525, ECN 190890) *OK 2-8-93*
 - b. Instrument Air Compressor Control Switch. (H-2-95219) *OK 2-8-93*
 - c. ALC Air Compressor Coolant Pump Control Switch. (SS-273-AW-2) (H-2-140525, ECN 190890) *OK 2-8-93*
 - d. Instrument Air Compressor Coolant Pump Control. (H-2-95219) *OK 2-8-93*
 - e. Instrument Air Dryer Control. (H-2-95219) *OK 2-8-93*

2.3 INSPECTION

- AI HOLD 2.3.1 Review the KEH Process Control Package and verify that all inspections and hold points are complete and signed off.

AI Initial *ICW 2-8-93*

- 2.3.2 Verify that all Compressed Air piping affected by ECN 129736 has been properly flushed per Note 6, Page 11 of ECN 129736 190890. *OK*
 CLEAN PIPING IS VERY IMPORTANT TO MAINTAINING THE SYSTEM.

OK ~~WHC QC Inspector~~
 Cog. Engineer

Date *2-8-93*

- COG & 2.3.3 Cognizant Engineers and WHC Operator walk down system and
 OPERATIONS inspect for conformance with design media. Record any
 HOLD significant nonconformances on Exception Sheets. Specific characteristics to be inspected include but are not limited to labeling of valves, instruments, and other components per ECN 129736 and ECN 190890, workmanship, piping configuration, and electrical system configuration and continuity.

Compressor Cog. Engr. *U. J. Kithil* Date *2-8-93*Electrical Cog. Engr. *U. J. Kithil* Date *2-8-93*WHC Operator *W. L. Kithil* Date *2/8/93*

Exception 1, 2, 3, 4, 8

2.4 INSTRUMENT CALIBRATION VERIFICATION

The Acceptance Inspector shall complete the following table and sign in the space provided below. Refer to drawing H-2-79872 Sht.2 Rev.0 and ECN 128736 page 10.

NOTE: ALL READINGS, REQUESTED BY THIS PROCEDURE, WHICH ARE NOT TAKEN FROM CALIBRATED INSTRUMENTS ARE FOR INFORMATION ONLY.

INSTRUMENT	CALIBRATION DATE
Air Pressure Gauge PI-273-AW-15	1-93 2-94 Due
Oil pressure Gauge PI-273-AW-20	1-93 Due 2-94
Oil Pressure Switch PS-273-AW-2	1-93 Due 2-94
Air Pressure Switch PS-273-AW-1	1-93 Due 2-94
Coolant Temperature Indicator TI-273-AW-8	Done 1-93 Due 2-94
Coolant Temperature Indicator TI-273-AW-9	Done 1-93 Due 2-94

Verified by:

D.O. Dallas
Acceptance Inspector

Date: 2-8-93

2.5 PRESSURE TESTING

QC HOLD 2.5.1 Review the KEH Process Control Package and verify that all new or modified components have been properly tested, according to ECN 128736 and ASME 631.3, and all leaks have been repaired.

C. C. Engineer
WHC QC Inspector

Ali K. Kothari

Date 2-8-93

2.6 PREPARATION FOR START-UP TEST

WHC QC was applied on work package
Closeout.

2.6.1 Clean the compressor building and equipment to ensure that there is no debris or excessive dust which will affect operation of the equipment.

J.K. 2-8-93

- 2.6.2 Check the compressor thoroughly to assure that there are no loose parts and the machine has not been tampered with since it was erected.

WARNING: LUBRICATING OIL IS A HAZARDOUS MATERIAL AND PRECAUTIONS MUST BE TAKEN TO PREVENT SPILLAGE. ANY SPILLS SHALL BE REPORTED TO MANAGEMENT AND CLEANED UP BY QUALIFIED PERSONNEL.

- 2.6.3 Use CHEVRON Antiwear Machine Oil AW-ISO 150 as crankcase lubricating oil. Fill the crankcase to the proper level on the oil sight glass. Pour oil over all the bearings that can be reached through the frame or openings.

- 2.6.4 Prior to initial start or after the machine has been idle for more than 1 day, it is necessary to prime the oil pump. Remove the pipe plug in the pump cover and pour oil down the hole into the pump. See Section 4 of the Operators Manual, CVI # 22181.

WARNING: ETHYLENE GLYCOL IS A HAZARDOUS MATERIAL AND PRECAUTIONS MUST BE TAKEN TO PREVENT SPILLAGE. ANY SPILLS SHALL BE REPORTED TO MANAGEMENT AND CLEANED UP BY QUALIFIED PERSONNEL.

- 2.6.5 Fill the ALC Air Compressor Cooling System with solution of 40% Ethylene Glycol & 60% Water in accordance with manufacturers recommendations.

- AI HOLD 2.6.6 Ensure that the air intake filter is properly installed and free of excessive debris and dust. Clean if necessary. Verify that all protective packing has been removed. (Cleanliness of the intake Air is crucial for maintaining the operability of the compressor.)

- 2.6.7 Turn the ALC Air Compressor over BY HAND (two revolutions minimum) in the direction of the arrow on the oil pump casing to verify that it rotates freely. It is necessary to remove the belt guard for this operation.

- 2.6.8 Reinstall belt guard and fasten securely.

- ~~2.6.9 Check aftercooler filter element for cleanliness and for damage. Replace if necessary.~~

Requires disassembly of compressor. Was inspected by manufacturer Representative prior to installation

- 2.6.10 Verify that the aftercooler condensate drain is piped to an operating automatic moisture trap and jug.

AK 2-8-93

- 2.6.11 Verify, BY HAND, free rotation of each of the pumps and motors (P-273-AW-3 and P-273-AW-4) on the pump unit and the fan and motor of the dry cooler Heat Exchanger (HX-273-AW-2).

Reference exception #5

AK 2-8-93

2.7 POWER TESTS OF PRE-EXISTING EQUIPMENT

AK 2-8-93 2.7. Switch ON Circuit Breaker in Compartment B-3 of MCC-241-AW-271

- WHC 2.7.1 Verify that the Instrument Air Compressor has been properly prepared for restart and operation.

OPERATIONS

HOLD

AGS 2-8-93

- 2.7.2 Remove tag and set Circuit Breaker number 7, Cathodic Protection System, in Panel 241-AW-273 to the "ON" position.

AK 2-8-93

- 2.7.3 Verify 430 volt power from Circuit Breaker number 7.

AK 2-8-93

- 2.7.4 Remove tag and set Circuit Breaker number 2, Instrument Air Compressor Coolant Pump Control Unit, in Panel 241-AW-273 to the "ON" position.

AK 2-8-93

- 2.7.5 BUMP power control for the Instrument Air Compressor Coolant Pump Control Unit (1-2 seconds max.) and verify the operating pump rotation is correct.

AK 2-8-93

- 2.7.6 Switch "ON" power control for the Instrument Air Compressor Coolant Pump Control Unit.

AK 2-8-93

- 2.7.7 Remove tag and set Circuit Breaker number 8, Instrument Air Compressor, in Panel 241-AW-273 to the "ON" position.

AK 2-8-93

- 2.7.8 BUMP power control for the Instrument Air Compressor (1-2 seconds max.) and verify the motor rotation is correct.

AK 2-8-93

- 2.7.9 Set Circuit Breaker number 8, Instrument Air Compressor, in Panel 241-AW-273 to the "OFF" position.

AK 2-8-93

- 2.7.10 Set Circuit Breaker number 2, Instrument Air Compressor Coolant Pump Control Unit, in Panel 241-AW-273 to the "OFF" position.

AK 2-8-93

- 2.7.11 Remove tag and set Circuit Breaker number 19, Air Dryer, in Panel 241-AW-273 to the "ON" position.

AK 2-8-93

- 2.7.12 Verify power is supplied to the Air Dryer by bumping the control "ON".

AK 2-8-93

- 2.7.13 Set Circuit Breaker number 19, Air Dryer, in Panel 241-AW-273 to the "OFF" position.

AK 2-8-93

- 2.7.14 Remove tag and set Circuit Breaker number 25, Change Trailer, in Panel 241-AW-273 to the "ON" position. Verify power to Change Trailer.

Exception #12

AK 3-11-93

- 2.7.15 Remove tag and set Circuit Breaker number 14, Mini Power Center, in Panel 241-AW-273 to the "ON" position. Verify the Mini Power Center is energized.

AK 2-8-93

- 2.7.16 Remove tag and set Circuit Breaker 1, Heat Trace, in Panel Mini-Power-Center to the "ON" position. Verify 110 volts power at thermostat connection terminals.

AK 2-8-93

2.8 INITIAL START TEST VALVE LINEUP

- 2.8.1 Set the following valves to the line up shown in the following table. (Refer to drawing H-2-79872 sht.2, ECN 128736)

VALVE LINEUP			
CLOSED	INIT	OPEN	INIT
V-273-AW-38	ack	V-273-AW-44	ack
V-273-AW-40	ack	V-273-AW-45	ack
V-273-AW-42	ack	V-273-AW-48	ack
V-273-AW-43	ack	V-273-AW-50	ack
V-273-AW-46	ack	V-273-AW-51	ack
V-273-AW-47	ack	V-273-AW-53	ack
V-273-AW-53	ack	V-273-AW-54	ack
		V-273-AW-55	ack
		V-273-AW-56	ack

Celvin J. Kostel
Test Director

2-8-93
Date

2.9 ALC AIR COMPRESSOR COOLING SYSTEM (Initial Start)

- 2.9.1 Check the thermo switch "THERMO SW" (TS-273-AW-2) in "Air Lift Circulator Air Compressor Cooling Unit" control panel for temperature setting of 105 ± 5°F.

Exception
#6

Initial on
Exception = 6

ack 2-9-93
Restart

- 2.9.2 Remove tag and set Circuit Breaker number 13, "Air Lift Circulator Air Compressor Cooling Unit", in Panel 241-AW-273 to the "ON" position. Alarm will sound.

ack 2-8-93

ack 2-9-93
Restart

- 2.9.3 Depress and release the Alarm Silence button on the ALC Air Compressor Coolant Pump Control Unit and verify the alarm is silenced.

ack 2-8-93

- 2.9.4 Verify that the "POWER ON" light on the ALC Air Compressor Coolant Pump Control Unit is energized.

ack 2-8-93

- OK 2-8-93
 2.9.5 ~~Remove tags~~ and switch ON the safety disconnect switches "Coolant Pump #3" and "Coolant Pump #4". OK 2-8-93

- 2.9.6 BUMP power switch (SS-273-AW-2) on the ALC Air Compressor Coolant Pump Control Unit (1-2 seconds max.) and verify that only one pump operates and the operating pump rotation is correct.

Pump Number P-273-AW- 3 OK 2-8-93

- 2.9.7 BUMP power control (SS-273-AW-2) on the ALC Air Compressor Coolant Pump Control Unit (1-2 seconds max.) and verify that only one pump operates and the operating pump rotation is correct. (The pump control will automatically switch to the opposite pump when power is supplied.)

Pump Number P-273-AW- 4 OK 2-8-93

- OK 2-8-93
 2.9.8 ~~Remove tags~~ and switch "ON" "ALC Air Compressor Heat Exchanger" safety disconnect switch. OK 2-8-93

- OK 2-9-93
Restart 2.9.9 Switch "ON" power switch (SS-273-AW-2) on the ALC Air Compressor Cooling Unit control panel. OK 2-8-93

- 2.9.10 Verify the operation of Pump 3 (P-273-AW-3) and that the indicating light for Pump 3 on control panel is glowing. OK 2-8-93

- 2.9.11 Verify that Pump 4, (P-273-AW-4) is not operating and indicating light for Pump 4 is "OFF". OK 2-8-93

- 2.9.12 BUMP the Fan control switch (SS-273-AW-3) on the ALC Air Compressor Coolant Pump Control Unit and verify proper rotation of the ALC Air Compressor Heat Exchanger fan. OK 2-8-93

- 2.9.13 Run Pump 3 for 5 min. while observing system for off normal conditions such as excessive vibration. OK 2-9-93

Exception #7

- 2.9.14 Check and record pump discharge pressure at discharge piping gauge on pump skid. OK 2-9-93

(PI-273-AW-18) Discharge Pressure: 56 psig

- 2.9.15 Check and record pump inlet pressure at inlet piping gauge on pump skid.

(PI-273-AW-17) Inlet Pressure: 0 psig OK 2-9-93

- 2.9.16 Check coolant level in Surge Tank as shown on sight glass on pump skid. (1/3 - 2/3 full)

OK 2-9-73

CAUTION: THE NEXT STEP IS PERFORMED ON ENERGIZED EQUIPMENT.

- AI HOLD 2.9.17 Open the Cooling Pump #3 safety disconnect panel door, measure and record Pump 3 (P-273-AW-3) motor amperage (all three phases).

PHASE A 1.9 amps
PHASE B 1.2 amps
PHASE C 1.2 amps

OK 2-9-73

- 2.9.18 Momentarily switch "OFF" cooling unit (SS-273-AW-2) at control panel to to change from Pump 3 (P-273-AW-3) to Pump 4 (P-273-AW-4).

OK 2-9-73

- 2.9.19 Verify the operation of Pump 4 (P-273-AW-4) and that the indicating light for Pump 4 on control panel is glowing.

OK 2-9-73

- 2.9.20 Verify that Pump 3. (P-273-AW-3) is not operating and indicating light for Pump 3 is "OFF".

OK 2-9-73

- 2.9.21 Run Pump 4 for 5 min. while observing system for abnormal conditions such as excessive vibration.

OK 2-9-73

- 2.9.22 Check and record pump discharge pressure at discharge piping gauge on pump skid.

(PI-273-AW-18) Discharge Pressure: 55 psig

OK 2-9-73

- 2.9.23 Check and record pump inlet pressure at inlet piping gauge on pump skid.

(PI-273-AW-17) Inlet Pressure: 0 psig

OK 2-9-73

- 2.9.24 Check coolant level in surge tank shown on sight glass on pump skid. (1/3 - 2/3 full)

OK 2-9-73

CAUTION: THE NEXT STEP IS PERFORMED ON ENERGIZED EQUIPMENT.

AI HOLD 2.9.25 Open the Cooling Pump #4 safety disconnect panel door, measure and record Pump 4 (P-273-AW-4) motor amperage (all three phases).

PHASE A 1.8 amps
PHASE B 1.8 amps
PHASE C 1.7 amps

NO 2-9-93
AK 2-9-93

2.9.26 Turn selector switch (SS-273-AW-3) for Fan 1 to "HAND" on control panel.

AK 2-9-93

2.9.27 Verify that the light for Fan 1 on the control panel is glowing. (Indicates the fan is operating)

AK 2-9-93

2.9.28 Verify that the fan on the dry cooler is operating and turning in the correct direction (Blowing upwards). Record any unusual noise, malfunction, or vibration.

AK 2-9-93

2.9.29 Check power transformer in coolant pump control panel for unusual noise and vibration while the power is "ON". Record any abnormality.

AK 2-9-93

2.9.30 Turn selector switch (SS-273-AW-3) for Fan to "AUTO" position on the control panel to engage the thermostatic control switch (TS-273-AW-2).

AK 2-9-93

2.9.31 Check coolant flow at sight glass and temperature at (TI-273-AW-7) for fan operation.

a. If coolant temperature is below 105 degrees F, the fan should not be operating.

40" F Not Operating AK 2-9-93

b. If coolant temperature is 105 degrees F or above, the fan should be operating.

Operating _____

2.9.32 Check ALC Air Compressor Cooling Unit Control Panel "FAN #3" indicating light for fan operation.

OFF AK 2-9-93

2.9.33 Switch "OFF" ALC Air Compressor Cooling Unit (SS-273-AW-2) on the control panel then switch "OFF" Circuit Breaker 13, "ALC Air Compressor Cooling Unit".

AK 2-9-93

2.10 ALC AIR COMPRESSOR (Initial Start)

- 2.10.1 Set the following valves to the line up shown in the following table. (Refer to drawing H-2-79872 sht.2, ECN 128736)

VALVE LINEUP			
CLOSED	INIT.	OPEN	INIT.
V-273-AW-38	<i>CHK</i>	V-273-AW-44	<i>CHK</i>
V-273-AW-40	<i>CHK</i>	V-273-AW-45	<i>CHK</i>
V-273-AW-42	<i>CHK</i>	V-273-AW-48	<i>CHK</i>
V-273-AW-43	<i>CHK</i>	V-273-AW-50	<i>CHK</i>
V-273-AW-46	<i>CHK</i>	V-273-AW-51	<i>CHK</i>
V-273-AW-47	<i>CHK</i>	V-273-AW-53	<i>CHK</i>
V-273-AW-53	<i>CHK</i>	V-273-AW-54	<i>CHK</i>
		V-273-AW-55	<i>CHK</i>
		V-273-AW-56	<i>CHK</i>

Alan J. Roth
Test Director

2-9-93
Date

- 2.10.2 Check level of lubricating oil in crankcase.

CHK 2-9-93

- 2.10.3 Open the ALC Compressor Control Panel and disconnect the wire from Terminal 4 to open the Air Pressure Switch (APS-273-AW-1) circuit. Tape off the wire to prevent it from contacting live components and close the panel. (The ALC Air Compressor will now build pressure to 25psi and unload.) (Reference drawing H-2-140525 and ECN # 190890)

CHK 2-9-93

- 2.10.4 Prime the ALC Air Compressor condensate trap located on the receiver tank. Take the large pipe plug out of the top of the trap and fill to overflow with water; replace plug.

CHK 2-9-93

- 2.10.5 ~~Remove tag~~ and set Circuit Breaker number 1 "Air Lift Circulator Air Compressor" in Panel 241-AW-273 to the "ON" position.

CHK 2-9-93

- 2.10.6 Switch "ON" Circuit Breaker 13, ALC Air Compressor Cooling Unit and silence alarm.

CAK 2-9-93

- 2.10.7 Start cooling unit by turning "ON" power switch (SS-273-AW-2) and setting fan control switch (SS-273-AW-3) to "AUTO".

CAK 2-9-93

- 2.10.8 BUMP power control (SS-273-AW-1) for the ALC Air Compressor (1-2 seconds max.) and verify the motor rotation is correct. (Motor rotation should be counter-clock-wise when facing the drive pulley.)

CAK 2-9-93

- 2.10.9 Turn the selector switch (SS-273-AW-1) to HAND, for constant speed operation.

CAK 2-9-93

- 2.10.10 10 (ten) seconds after the compressor starts, verify the oil pressure gauge indicates normal operating pressure of 15 to 40 psi. If it is below 5 psi, the compressor will shut down automatically. If Oil Pressure is not normal, switch the compressor control (SS-273-AW-1) to "OFF" and stop test.

CAK 2-9-93

- 2.10.11 Record pressure drop across Inlet Air Filter to verify that the compressor is receiving air.

(PI-273-AW-16) Vacuum: 1 inches of Water

CAK 2-9-93

2.10.12 Operate the ALC Air Compressor UNLOADED to atmosphere for one hour. Check bearings to ensure they remain cool. Check that heat exchanger fan operates when Coolant Discharge Temperature exceeds 105°F. Complete the table below. *NA*

Exception Number 9

Note: Never leave the air compressor operating unattended until the Cog. Engineers are satisfied all controls are operating properly.

Crankcase oil pressure is read on the ALC Air Compressor Control panel door, PI-273-AW-20. Coolant discharge temperature is read on TI-273-AW-9 thermometer. Coolant inlet temperature is recorded at TI-273-AW-8. Watch the crankcase oil level while running the compressor. Top off oil level while running if necessary.

ALC AIR COMPRESSOR INITIAL START TEST			
Time (Minutes)	CRANK CASE OIL PRESSURE PI-273-AW-20 (PSI)	COOLANT DISCHARGE TEMPERATURE TI-273-AW-9 (°F) (Stop test if over 135°F)	COOLANT INLET TEMPERATURE (TI-273-AW-8) (°F)
5	40	56°F	55°F
10	44	59°F	58°F
15	44	60°F	59°F
20	45	62°F	60°F
25	40	65°F	63°F
30	38	69°F	67°F
45	37	76°F	74°F
60	34	82°F	80°F

Chris Kothel
Test Director

2-9-93
Date

CAUTION: THE NEXT STEP IS PERFORMED ON ENERGIZED EQUIPMENT.

AI HOLD 2.10.13 Operate the door of the ALC Air Compressor Control Panel, measure and record air compressor motor amperage (all three phases).

PHASE A 30 amps
PHASE B 28 amps
PHASE C 28 amps

2-9-93
2-9-93

- 2.10.14 First switch "OFF" the ALC Compressor (SS-273-AW-1) at the control panel, then switch "OFF" Circuit Breaker 1, Air Lift Circulator Air Compressor, in Panel 241-AW-273.

OK 2-2-93

- 2.10.15 First turn both switches to "OFF" on the ALC Air Compressor Coolant Pump Control Panel (SS-273-AW-2, SS-273-AW-3) at the control panel, then switch "OFF" Circuit Breaker 13, "ALC Air Compressor Cooling Unit", in Panel 241-AW-273.

OK 2-9-93

Exception #1D

2.11 CONTROL SYSTEM TEST

- 2.11.1 Set the following valves to the line up shown in the following table. (Refer to drawing H-2-79872 sht.2, ECN 128736)

VALVE LINEUP					
	CLOSED	INIT.	OPEN	INIT.	
<u>OK</u>	V-273-AW-38	<u>OK</u>	V-273-AW-44	<u>OK</u>	<u>OK</u>
<u>OK</u>	V-273-AW-40	<u>OK</u>	V-273-AW-45	<u>OK</u>	<u>OK</u>
<u>OK</u>	V-273-AW-42	<u>OK</u>	V-273-AW-48	<u>OK</u>	<u>OK</u>
<u>OK</u>	V-273-AW-43	<u>OK</u>	V-273-AW-50	<u>OK</u>	<u>OK</u>
<u>OK</u>	V-273-AW-46	<u>OK</u>	V-273-AW-51	<u>OK</u>	<u>OK</u>
<u>OK</u>	V-273-AW-47	<u>OK</u>	V-273-AW-53	<u>OK</u>	<u>OK</u>
<u>OK</u>	V-273-AW-53	<u>OK</u>	V-273-AW-54	<u>OK</u>	<u>OK</u>
			V-273-AW-55	<u>OK</u>	<u>OK</u>
			V-273-AW-56	<u>OK</u>	<u>OK</u>

Restart

3-9-93

OK 3-9-93

Test Director

Date

2-16-93

- 2.11.2 Prior to initial start or after the machine has been idle for more than one day, it is necessary to prime the Air Compressor oil pump. Remove the pipe plug from the pump cover and pour oil down the hole into the pump. See Section 4 of the Operators Manual, CVI # 22181.

OK 3-9-93

OK 2-16-93

- 2.11.3 Verify the Safety Relief Valve on the compressor receiver tank is set at 110 psi. (SRV-273-AW-8)

OK 3-9-93

OK 2-16-93

- CA/K 3-9-93 2.11.4 Open intake air drain valve (V-273-AW-58) to drain off any accumulated moisture in the intake pipe. Close drain valve. CA/K 3-16-93
- CA/K 3-9-93 2.11.5 Switch "ON" Circuit Breaker 1, Air Lift Circulator Air Compressor, in Panel 241-AW-273. CA/K 3-16-93
- CA/K 3-9-93 2.11.6 Switch "ON" Circuit Breaker 13, ALC Air Compressor Cooling Unit and silence alarm. CA/K 3-16-93
- CA/K 3-9-93 2.11.7 Switch "ON" cooling unit (SS-273-AW-2) at control panel and verify flow to compressor by viewing through sight glass. Set the fan control switch (SS-273-AW-3) to "AUTO" CA/K 3-16-93
- CA/K 3-9-93 2.11.8 On ALC Air Compressor control panel turn selector switch (SS-273-AW-1) to "AUTO". Verify compressor starts. CA/K 3-9-93
Exception #1B "Hand" Verify oil pressure 40 psi
- 2.11.9 Allow the Compressor to run unloaded for 3 minutes before proceeding with the test. (This allows adequate compressor lubricant to reach all components.) CA/K 3-9-93
- 2.11.10 Switch "OFF" cooling unit (SS-273-AW-2) at control panel to shut off the coolant pumps. CA/K 3-9-93
- 2.11.11 Verify that after a 90-10 second delay, low flow alarm sounds, and the compressor shuts down. CA/K 3-9-93
Alarm sounds
- 2.11.12 Silence the alarm and switch "OFF" the compressor at the compressor control panel CA/K 3-9-93
- 2.11.13 Without turning "ON" the coolant pump unit, attempt to manually start the compressor with the compressor controls (SS-273-AW-1). The Low Flow Shutdown protection should prevent the air compressor from starting. Verify air compressor does not start. CA/K 3-9-93
- Handwritten signature*

- 2.11.14 While compressor is running, switch "OFF" Circuit Breaker 13, ALC Air Compressor Coolant Pump Control Unit. Relay CS2 should immediately shut down the compressor. Verify that compressor unit shuts down.

GJK 3-7-93

- 2.11.15 Without turning "ON" Circuit Breaker 13, attempt to manually start the air compressor (SS-273-AW-1). Relay CS2 should prevent the air compressor from starting. Verify air compressor does not start.

GJK 3-7-93

- 2.11.16 Set the Air Lift Circulator Air Compressor control switch (SS-273-AW-1) to the "OFF" position.

GJK 3-7-93

- 2.11.17 Set the Air Lift Circulator Coolant Pump control switch (SS-273-AW-2) to the "OFF" position.

GJK 3-7-93

2.12 LOCK AND TAG

Perform Zero energy check, Lock and Tag as necessary to return to the configuration detailed in Table 2.

GJK 3-7-93

3.0 POST TEST MAINTENANCE

CAUTION: ENSURE THAT THE AIR SYSTEM IS RELIEVED OF PRESSURE AND AIR COMPRESSOR PULLEY ROTATION IS PREVENTED PRIOR TO PERFORMING ANY WORK ON THE SYSTEM.

3.1 Applicable crafts personnel shall perform the following maintenance.

3.1.1 In the ALC Compressor Control Panel, RECONNECT the Air Pressure Switch wire which was disconnected in step 2.10.3 to Terminal 4.

CLK 3-9-93

3.1.2 Check all exterior nuts and bolts are tight and if not tighten as required (CVI #22181).

CLK 3-9-93

3.1.3 Check compressor frame lubricating oil level.

CLK 3-9-93

3.1.4 Check the belt tension on the air compressor. Refer to Operators Manual, Section 9, (CVI # 22181).

CLK 3-9-93

4.0 ATP COMPLETION

AI HOLD 4.0.1 The ATP is complete. all modifications made for the sole purpose of the ATP are restored to drawing configurations.

Initialed
in error

CLK 3-9-93

5.0 TEST EXECUTION AND ACCEPTANCE SHEET

Test Completed: With Exceptions X Without Exceptions _____

Test Performed By _____

O.O. Wallace
REN Acceptance Inspector

3-11-93
Date

Alvin J. Kostelnik
Air Compressor Cognizant Engineer

3-11-93
Date

Alvin J. Kostelnik
Electrical Cognizant Engineer

3-11-93
Date

David A. Berg
Major Maintenance Representative

3-12-93
Date

Cognizant Engineering and Quality Assurance Acceptance

The test has been completed and the results have been reviewed. Any exceptions discovered during the test have been satisfactorily resolved. The 273-AW compressed air system is accepted by the undersigned as conforming to the design media.

Alvin J. Kostelnik
Air Compressor Cognizant Engineer

3-16-93
Date

J. Raf
Facility Cognizant Engineer

3-30-93
Date

Jim Langdon Br Rich Larsson
Electrical Cognizant Engineer

April 1, 1993
Date

P.E. Pozanski
WHC Quality Assurance Engineer

3-30-93
Date

AA Luma
Safety Assurance Engineer

4-29-93
Date

Operations Acceptance

The Instrument Air Compressor, Instrument Air Compressor Cooling System, Air Dryer, Cathodic Protection System, and Change Trailer do not require further testing and are accepted by the undersigned as ready for operation.

W. Raham
WHC Operations Facility Representative

5/3/93
Date

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. A Clarification Only: Yes X No

Procedure Step: 2.2.1

Description of Problem:

Lock and Tag requirements were reviewed
by Shift Manager Brian Biddle and he
determined that lock and Tags were not needed.

Exception Resolution:

Test to continue without lock & Tags with
switches verified in the "off" position

Date Exception Resolved: 2-8-93

Equipment Cognizant Engineer

Chris Kostel

Quality Assurance Engineer

NA

(NA for Clarifications)

STEP 2.2.1 <i>a/k 2-8-93</i> TABLE 1 LOCK AND TAG IN THE "OPEN" or "OFF" POSITION				
ITEM		INIT.	ITEM	INIT.
MCC-241-AW-271				
COMPARTMENT B-3		<i>a/k</i>	*****	N/A
CIRCUIT BREAKERS IN "PANEL 241-AW-273"				
CIRCUIT BREAKER		N/A	CIRCUIT BREAKER	N/A
1	AIR LIFT CIRCULATOR AIR COMPRESSOR	<i>a/k</i>	2 INSTRUMENT AIR COMPRESSOR COOLANT PUMP CONTROL UNIT	<i>a/k</i>
7	CATHODIC PROTECTION SYSTEM	<i>a/k</i>	8 INSTRUMENT AIR COMPRESSOR	<i>a/k</i>
13	AIR LIFT CIRCULATOR AIR COMPRESSOR COOLING UNIT	<i>a/k</i>	14 MINI POWER CENTER	<i>a/k</i>
			18 SPACE	N/A
19	AIR DRYER	<i>a/k</i>	20 SPACE	N/A
25	SPACE	N/A	26 CHANGE TRAILER	<i>a/k</i>
			30 SPACE	N/A
Circuit breaker located in "MINI POWER CENTER" panel				
1 HEAT TRACE		<i>a/k</i>	*****	N/A
MISCELLANEOUS SAFETY DISCONNECTS				
"COOLING PUMP #3"		<i>a/k</i>	"COOLING PUMP #4"	<i>a/k</i>
"ALC AIR COMPRESSOR HEAT EXCHANGER"		<i>a/k</i>	*****	N/A

Al. J. Kotchik
TEST DIRECTOR

2-8-93
Date

STEP 2.12		TABLE 2		
LOCK AND TAG IN THE "OPEN" or "OFF" POSITION				
CIRCUIT BREAKERS IN PANEL 241-AW-273				
CIRCUIT BREAKER		INIT	CIRCUIT BREAKER	INIT
1	AIR LIFT CIRCULATOR AIR COMPRESSOR	<i>afk</i>	2 INSTRUMENT AIR COMPRESSOR COOLANT PUMP CONTROL UNIT	N/A
7	CATHODIC PROTECTION SYSTEM	N/A	8 INSTRUMENT AIR COMPRESSOR	N/A
13	AIR LIFT CIRCULATOR AIR COMPRESSOR COOLING UNIT	<i>afk</i>	14 MINI POWER CENTER	N/A
			18 SPACE	N/A
19	AIR DRYER	N/A	20 SPACE	N/A
25	SPACE	N/A	26 CHANGE TRAILER	N/A
			30 SPACE	N/A

Ali D. Koshki
TEST DIRECTOR

3-9-93
Date

KEH Electrician applied lock and Tags for post
test maintenance. *afk* 3-9-93

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 1 Clarification Only: Yes No X

Procedure Step: 2,3,3

Description of Problem:

Direction of Flow for Compressed air from
ALC Compressor to Instrument Air System
is labeled in the wrong Direction. Drawing
does not indicate direction. 4 labels.
3 between valve 43 V-273 AW-43 and Instrument Air Filters.
1 from AR-273-AW-TKE outlet to system.

Exception Resolution:

Labels Need to be corrected/replaced.

Test may Continue CILK 2-8-93

Date Exception Resolved: 3-11-93

Equipment Cognizant Engineer

Alvin P. Kestel

Quality Assurance Engineer

Myranda

(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 2 Clarification Only: Yes No X

Procedure Step: 2.3.3

Description of Problem:

SRV Between Cylinder head and Aftercooler
on air piping is not shown on drawings and
is not labeled,

Exception Resolution:

Weeds label to be applied and drawing
corrected.

ECN 192579 issued and inspection per note 2.3.

Test may continue AOK 2-8-93

Date Exception Resolved: 3-9-93

Equipment Cognizant Engineer

Quality Assurance Engineer

Alvin Kozak

Hyaminda

(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 3 Clarification Only: Yes No X

Procedure Step: 2.3.3

Description of Problem:

Tank TK-273-AW-7 the Contant Surge Tank
is not labeled

Exception Resolution:

Label Needs to be installed.

Test may continue, OK 2-8-93

Date Exception Resolved: 3-11-93

Equipment Cognizant Engineer

Quality Assurance Engineer

(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 4 Clarification Only: Yes No X

Procedure Step: 2.3.3

Description of Problem:

Conduit run from Panel board 241-4W-273
contains only 3 #8 wires instead of the
4 specified on the drawing to the Mini-Power Center.

Exception Resolution:

ECN to correct drawing shall be issued.

Test May Continue C-1, K 2-8-93

Date Exception Resolved: 3-16-93

Equipment Cognizant Engineer

Ali J. Kothari

Quality Assurance Engineer

Hyamian Sa
(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 5 Clarification Only: Yes X No

Procedure Step: 2, 6, 11

Description of Problem:

Pumps P-273-AW-3 and P-273-AW-4 cannot be rotated
by hand without disassembly.

Exception Resolution:

Pump initial power bump will test for free rotation.

Date Exception Resolved: 2-8-93

Equipment Cognizant Engineer

Alvin J. Kostel

Quality Assurance Engineer

N/A

(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 6 Clarification Only: Yes X No

Procedure Step: 29.1

Description of Problem:

Thermo switch setting can not be verified
without removing from Glycol System. This
would require draining the system, setting can
be verified in procedure step 2.10.12 run in
test.

Exception Resolution:

Compressor ~~can~~ did not reach temperature to operate
switch due to cool weather conditions and operation
without load. This control shall be tested in the
OTR.

Date Exception Resolved: 3-16-93

Equipment Cognizant Engineer

Ali G. Kosh

Quality Assurance Engineer

N/A

(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 7 Clarification Only: Yes No X

Procedure Step: 2.9.13

Description of Problem:

Coolant Sight Glass does not show coolant
Flow to Compressor.

Valves to be removed per ECW Note #15 were
not removed from compressor and check valves
at pump unit do not allow flow.

Exception Resolution:

Stop Test, Set Breaker #13 to the off position.

2-9-93: Valves removed after stop test and
Piped through with CS pipe. To start perform steps
2.9.2, 2.9.3, 2.9.9, 2.9.13

Date Exception Resolved: 2-9-93

Equipment Cognizant Engineer

Ali A. Kothli 2-9-93

Quality Assurance Engineer

Hyamanda
(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 8 Clarification Only: Yes No X

Procedure Step: 2,3,3

Description of Problem:

Compartment B-3 of MCC-241-4W-27 is not
labeled.

Exception Resolution:

Label Installed 3-11-93

Date Exception Resolved: 3-11-93

Equipment Cognizant Engineer

Ali J. Koshil

Quality Assurance Engineer

Kyarianda
(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 9 Clarification Only: Yes No X

Procedure Step: 2.16.12

Description of Problem:

Compressor Automatically shutdown.

The flow switch is located in an isolated run
of pipe. The flow switch does not receive flow
until the coolant reaches 105°F where the mixing
valve allows coolant to flow through the Heat Exchanger.
Flow switch shutdown disabled to allow test to continue.

Exception Resolution:

ECN #190893 issued to relocate the Flow switch
to the compressor supply piping which receives
continuous flow.

Date Exception Resolved: 3-9-93

Equipment Cognizant Engineer

Ali H. Khatib

Quality Assurance Engineer

Hyairansa
(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 10 Clarification Only: Yes X No

Procedure Step: 2.10.15

Description of Problem:

Controls cannot be tested because Flow Switch
FS-223-4W-2 is located in a closed loop which does not
open until 105°F Coolant temperature is reached. Test can
not continue until switch is relocated. AS/K 2-9-93

Exception Resolution:

ECN 190898 issued to relocate Flow switch.

Date Exception Resolved: 3-7-93

Equipment Cognizant Engineer

Quality Assurance Engineer

W. J. Roth
N/A
(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 11 Clarification Only: Yes No X

Procedure Step: 2.11.8

Description of Problem:

Flow switch won't hold contacts open and allow
compressor to operate. Test must be stopped
until problem resolved

Exception Resolution:

ECN 192579 Released with new Flow
switch installation
Inspected per note 2.3
con. Phil Kothil 3-9-93
AI

Date Exception Resolved: 3-9-93

Equipment Cognizant Engineer

Quality Assurance Engineer

Phil Kothil
Kyanaida
(NA for Clarifications)

6.0 EXCEPTIONS TO ACCEPTANCE TEST SECTION

Make copies of this EXCEPTION SHEET as necessary.

Exception No. 12 Clarification Only: Yes X No

Procedure Step: 2.7.14

Description of Problem:

Change Trailer power is not permanently wired for ATP in
case repair is required, power will not be interrupted at
the Change Trailer.

Installation of Permanent wiring to be installed and
inspected by AI following compressor testing and prior to
final signoff.

Exception Resolution:

Change Trailer Power installed cdk 3-11-93
KEH AF DOW 3-11-93

Date Exception Resolved: 3-11-93

Equipment Cognizant Engineer

[Signature]

Quality Assurance Engineer

ilA

(NA for Clarifications)

[8] From: Jerry A Harvey at -WHC62 4/6/93 11:09AM (101889 bytes: 17 ln, 3 fl)
To: David A Berg at -WHC174, Alois J (Al) Kostelnik at -WHC95, Anne M Erickson
cc: Charles Crawford, Jerry A Harvey, John M Held
Subject: ACCEPTANCE TEST PROCEDURE/REVIEW 363-93

----- Message Contents -----

Text item 1:

In reviewing this document for the acceptance test procedure for 241AW process air system, the post review indicates that the lock and tag requirements of WHC-CM-4-3, G-1 were willfully violated by the shift manager and the COG. The procedure includes removal and replacement of a belt drive, hand rotation of pumps, motors and shafts, on an energized 480V electrical system.

The test was conducted on 2/8/93 without lock/tagout and in the absence of ESQ personnel. The procedure was previously approved based upon the inclusion of lock and tag provisions. On 3/9/93 it is noted that a KEH electrician did in fact apply lock and tag procedures for post test maintenance. This procedure is invalid as modified.

I have attached a copy of REV 3 of the cited WHC standard for your future reference.

RESPONSE:

To clarify the statement of performing the ATP without "Lock and Tag" ("Lock and Tag" = physical hardware) as directed by the Shift Manager is that because the Electrical Distribution Panel is inside the compressor building 3 feet from the compressor being tested Locks and Tags (hardware) were not necessary. Test personnel were present in the building during testing and were therefore able to supervise and control the operation/energizing of the panel and circuits. The removal of the requirement for Lock and Tag (hardware) allows the test to be performed much more efficiently with minimal impact on worker safety.

During the performance of the test, physical "Locks and Tags" were not placed on the distribution panel breakers. The breakers were supervised and operated by a KEH electrician as directed by the Test Director. This supervision of the breakers, essentially performed the same function and protection as "Lock and Tag" hardware. Zero energy checks were performed on all components before any inspection or maintenance activity was performed.

The Lock and Tag which was applied at the end of the procedure was applied by the KEH electrician to prevent energizing the components which the millwrights were working on. (It was a KEH Lock and Tag.) The locks and tags were installed to allow the millwrights to safely perform the work in the absence of the electricians. Since the millwrights would be exiting the building for tools and supplies and could not continuously monitor the panel and breakers.

I realize that this detail should have been more clearly presented in the ATP clarification for no "Lock and Tag". The safety philosophy of "Lock and Tag" was demonstrated by the personnel involved in the test and adequate safety measures were taken to ensure that the work was performed safely.

AL KOSTELNIK
TEST DIRECTOR / AIR COMPRESSOR COG. ENGINEER