JUN 21 1996

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT № 612907

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
TWRS Equipment Engineering (74F10)	ICFKH TWRS FACILITIES TECHNICAL SUPPORT	N/A
5. Proj./Prog./Dept./Div.:	**6. Cog. Engr.:**	**7. Purchase Order No.:**
Portable 500 CFM Exhauster	Owen D. Nelson	N/A
8. Originator Remarks:		**9. Equip./Component No.:**
This document is to acceptance test the new 500 CFM portable exhauster in support of Salt Well Pumping of Tank A-101.		VTP-
		10. System/Bldg./Facility: HVAC
11. Receiver Remarks:		**12. Major Assm. Dwg. No.:** H-14-100764, H-14-100765, H-14-100766, H-14-100737, H-14-100790
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: June 20, 1996

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-WM-ATP-176	82	0	Acceptance Test Procedure (ATP)	SQ	1	1	1

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 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

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

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
1	/	Cog.Eng. O. D. Nelson	O. Nelson	6/20/96	H5-57	J. Lohrasbi		N/A	S5-05	3	
1	1	Cog. Mgr. W. W. Jenkins	for Telecon for W.W. Jenkins O. Nelson	6/20/96	S2-24	T. L. Ostrander		N/A	S3-10	3	
1	/	QA T. J. Volkman		6/20/96	T4-07	Originator D. T. Chou		N/A	S3-04	3	
1	1	Safety l. S. Krogsrud	L.S. Krogsrud	6/20/96	T4-07	ICFKH Engineering Document Control			R1-29	3	
0		Env. N/A				Design Authority J.R. Kriskovich		N/A	S2-24	3	
1	/	Test Director T. D. Kaiser		6/19/96	E6-77	Central Files (2)			A3-88		
1	1	Electrical Engineer C. M. Monasmith		6/20/96							

18.	19.	20.	21. DOE APPROVAL (if required)
O. Nelson 6/20/96 Signature of EDT Originator — Date	for Telecon for W.W. Jenkins O. Nelson 6/21/96 Authorized Representative for Receiving Organization — Date	for Telecon for O. Nelson W.W. Jenkins 6/21/96 Cognizant Manager — Date	Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-1

ATP for 500 CFM Portable Exhauster

O.D. Nelson
ICF KAISER HANFORD CO., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: EDT-612907 UC: 2030
Org Code: 74F10 Charge Code: N2243
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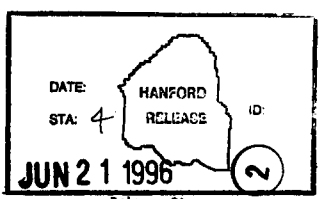
Key Words: Flammable, Watch List, Tanks, Ventilation System

Abstract: This Acceptance Test Procedure (ATP) will test and verify that the Exhauster meets the specified functional requirements, safety requirements, operating requirements, and provide a record of the functional test results. The system/functions that will be tested are listed in the scope section of the Acceptance Test Procedure.

Release Approval 6/21/96 Date



Release Stamp

Approved for Public Release

TANK FARM ACCEPTANCE TEST PROCEDURE	SYSTEM INTERIM STABILIZATION

ATP FOR 500 CFM PORTABLE EXHAUSTER

TEST EXECUTION SHEET

Date:

Document Number: WHC-SD-WM-ATP-176 REV. 0

EXHAUSTER Unit Number:

TEST PERSONNEL

PRINT NAME

PROJECT ENGINEER: Owen Nelson

TEST DIRECTOR: Terry Kaiser

ALT TEST DIRECTOR: Chuck Monasmith

TEST EXECUTION

Test Director Date

TEST APPROVAL AND ACCEPTANCE

Westinghouse Hanford Company

_____ Without Exception _____ With Exception/Resolved _____ With Exception/Outstanding

Test Director Date

Quality Assurance Date

Safety Date

Project Engineer Date

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1.0 PURPOSE

1.1 There is a concern that flammable gases may exceed the Lower Flammability Limit during interim stabilization of identified waste storage tanks. The Portable Exhauster System will be utilized to reduce potential flammable gases that may exist within the dome vapor space of the tank.

1.2 This Acceptance Test Procedure (ATP) will test and verify that the Exhauster meets the specified Functional Requirements, Safety requirements, Operations Requirements, and, provide a record of the functional test results. The systems/functions that will be tested are listed in the Scope section that follows.

2.0 INFORMATION

2.1 SCOPE

2.1.1 POWER SYSTEM CHECK

This check will verify that there is proper electrical power to all the Exhauster systems.

2.1.2 PRESSURE DECAY TEST

This will check integrity of the Exhauster train assembly air boundary, including the Seal Pot. The test is designed to address the requirements specified in ASME N510-1989, Testing of Nuclear Air Treatment System, Section 6.5.3, "Pressure Decay Method".

2.1.3 EXHAUSTER FAN CHECK

This check will verify that the Exhauster Fan operates freely and rotates in the correct direction.

2.1.4 HEAT TRACE CHECK

This check will verify that the Heat Trace functions properly.

2.1.5 INTERLOCK ALARM CHECK

This check will verify that interlocks perform as required to specific alarm conditions.

2.1.6 GLYCOL HEATER CHECK

This check will verify that the Heater and Glycol Circulation Pump function properly.

2.2 TERMS AND DEFINITIONS

2.2.1 ATP - Acceptance Test Procedure

2.2.2 DMM - Digital Multi meter

2.2.3 DPT - Differential Pressure Transmitter

2.2.4 DS - Disconnect Switch

2.2.5 HEPA - High Efficiency Particulate Air

2.2.6 MPZ - Mini Power Zone

2.2.7 MSDS - Material Safety Data Sheet

2.2.8 NO - Normally Open

2.2.9 SLC - Small Logic Controller

2.2.10 QC - Quality Control

2.2.11 IN W.C.- inches Water Column

2.3 RESPONSIBILITIES

2.3.1 The Maintenance craft personnel are responsible for:

- Schedule the test as required.
- Provide the test supplies found in step 4.1.
- Provide assistance during the test.

2.3 RESPONSIBILITIES (Continued)

2.3.2 Project Engineer is responsible for:

- Designate a Test Director.
- Coordinate testing with facility management.
- Distribute the approved testing schedule as soon as possible, but at least two days prior to testing.
- Ensure field testing and inspection has been completed.
- Schedule a pre-ATP meeting with test participants prior to start of testing.
- Sign Test Execution Sheet when ATP is approved and accepted.
- Take necessary action to clear exceptions to the ATP.
- Sign Exception Sheet when exception has been resolved.
- Provide a distribution list for the approved and accepted ATP.

2.3 RESPONSIBILITIES (Continued)

2.3.3 Test Director is responsible for:

- Coordinate all acceptance testing.
- Notify all concerned parties when a change is made in the testing schedule.
- Conduct pre-job safety meeting.
- Conduct pre-job system walkdown.
- Confirm that field testing and inspection of the system or portion of the system to be tested has been completed.
- Obtain from the Project Engineer, any information or changes necessary to clear or resolve objections.
- Stop any test which may cause damage to the system until the test procedure has been revised.
- Observe tests, record test data and maintain test log.
- Evaluate recorded data, discrepancies, and exceptions.
- Approve and record authorized field changes to the ATP using the red line method.
- Sign and date every procedure section on the working copy as it is completed.
- Sign Test Execution Sheet when ATP has been performed.
- Sign Test Exception Sheet when retest has been executed and accepted.
- Record exceptions and test steps that are not performed on the ATP EXCEPTION RECORD. Add additional ATP EXCEPTION RECORD sheets as needed.
- Transfer the final test results with Quality Control's signatures and dates for each section to the master in ink or type. Retain the working copy and a copy of the master in the field project files.

2.3 RESPONSIBILITIES (Continued)

2.3.4 Quality Control (QC) is responsible for:

- Verifying/witnessing results of testing to established criteria.
- Signing Test Exception Sheet(s).
- Signing and verifing Data Sheet.
- Signing Test Exception Sheet(s) when retest has been executed and accepted.

2.4 REFERENCES

2.4.1 The following documents were used to write or are referenced in this procedure:

- WHC-CM-CM-1-10, SAFETY MANUAL, "WKS-6, PRE-JOB SAFETY PLANNING", "WKS-15, ELECTRICAL WORK SAFETY".
- WHC-CM-6-1 EP 4.2., STANDARD ENGINEERING PRACTICE, "TESTING REQUIREMENTS"
- WHC-IP-1026 APPX M, ENGINEERING PRACTICE GUIDELINES "ACCEPTANCE TEST PROCEDURES AND REPORTS"
- H-14-100737, 500 CFM PORTABLE EXHAUSTER Mechanical drawings
- H-14-100764, ELECTRICAL EXHAUSTER SKID DIAGRAM drawings
- H-14-100765, ELECTRICAL EXHAUSTER SKID PLANS and ELEVATIONS drawings
- H-14-100766, ELECTRICAL EXHAUSTER SKID DETAILS drawings
- ASME, 1989a, Nuclear Power Plant Air-Cleaning Units and Components, ASME N509-1989, American Society of Mechanical Engineers (ASCE), New York.
- ASME, 1989b, Testing of Nuclear Air Treatment Systems, ASME N510-1989, ASCE, New York.
- VENDOR INFORMATION

2.5 SAFETY

Warning - Energized circuits and leads are contained inside the cabinets. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

Caution - Do not apply Megger voltage to the Variable Frequency Drive VTP-VFD-2212A.

2.5.1 The following administrative procedures control work performed in this procedure:

- 277W Boiler Shop Emergency Preparedness Plan
- Industrial Hygiene Manual, WHC-CM-4-40
- Safety Manual, WHC-CM-1-10

2.6 QUALITY ASSURANCE

The QC Inspector shall verify that the ATP has been performed correctly, verifing Data Sheets, and sign and date the Test Execution Sheet(s) and Data Sheets.

2.7 GENERAL INFORMATION

2.7.1 Complete each procedure step in the given order, unless otherwise noted or as directed by the Test Director.

2.7.2 All entries recorded in this procedure shall be made in black ink except for those noted using the redline method.

2.7.3 Editorial changes required to this ATP may be made per the red line method by the Test Director as long as they do not impact operational facility safety function or performance, and will not compromise or influence the test data. Any changes affecting the above stated criteria shall be made in accordance with WHC-CM-6-1, Standard Engineering Practices, EP-2.2, Engineering Document Change Control Requirements.

2.7.4 Any non-conformance of the instrumentation, unexpected results or exceptions during testing shall be sequentially numbered and recorded in the ATP EXCEPTION LOG. Thus, case-by-case resolution, recording, approval, and distribution of each exception will be achieved.

2.7.5 Do not perform any part of this procedure on faulty equipment. If faulty equipment is discovered, STOP the execution of this procedure and resolve the problem (i.e. repair equipment or write up faulty equipment as an exception and continue).

2.7.6 This procedure DOES contain separate data sheets. Verification of procedural steps and validity of the data is incorporated into each specific section as required.

2.7.7 At the completion of daily ATP testing or if testing is suspended for any reason, ensure that the 241-A-101 500 CFM Portable Exhauster is shutdown and in a safe de-energized state.

2.7.8 The intent of this ATP is to provide a method for documenting the condition and capabilities of the as-built Exhauster unit. The attached ATP Exception Log and Exception Record provides the means of documenting Acceptance Testing results and equipment conditions. Additional sheets are to be used as necessary to delineate the progress of the ATP.

2.7.9 The performance of this test may take several days. At the end of each test day the power to all circuits must be turned off. The Test Director will use Drawings and Engineering judgement to ensure proper power is restored as needed.

3.0 RECORDS

3.1 The completed working copy of this procedure and all exception logs and exception records generated by this procedure will be kept as permanent records.

4.0 PREREQUISITES

4.1 The following supplies shall be available at the workplace:

- Pressure Source: minimum range 0 - 15 IN W.C.

  Calibration No. _____ Expiration Date _____

- Digital Multi meter: Portable, 0-600 volts ac, ± 2% accuracy.

  Calibration No. _____ Expiration Date _____

- Type J Thermocouple Simulator and connection wire

  Calibration No. _____ Expiration Date _____

- Water container that measures 17 to 18 inches in depth.

- Propylene Glycol (An amount that will fill system to an appropriate level)

- Pressure measurement device, accurate to ± 0.01 in. wg, approximate range of 0 to 12 in. wg.

  Calibration No. _____ Expiration Date _____

- Barometer, accurate to ± 0.01 in. Hg, or use Hanford weather station data

  Calibration No. _____ Expiration Date _____

- Temperature indicator, accurate to ± 0.5 °F

  Calibration No. _____ Expiration Date _____

- Vibration Instrument, SKF CMVA10

  Calibration No. _____ Expiration Date _____

- Compressed air source (or blower), pressure reducer (or damper), isolation valve, and safety relief mechanism

- Vacuum source (Capable of producing -12.0 IN W.C.)

- Desktop/Laptop computer to interface with the Exhauster SLC 500 program

- 480V 3 phase power source

- 1000V and 500V megohmmeter

- One #14 insulated connection wire, four feet long

4.0 PREREQUISITES (Continued)

4.2 The following documents are required to perform this procedure:

- Engineering drawings and appropriate vendor information listed in section 2.4.
- Propylene Glycol MSDS (# 01552)

4.3 The following conditions must be met before this test may commence:

4.3.1 A pre-job safety meeting has been held in accordance with IS3, PREJOB SAFETY PLANNING, ICF KH ENVIRONMENTAL, SAFETY, AND HEALTH PROGRAM MANUAL. ☐

4.3.2 Verify that the Exhauster is ready for testing by walking down the test area to identify and clear all hazardous conditions. ☐

4.3.3 Ensure all Exhauster valves including DPT valves are closed, except for the stack pitot valves. ☐

4.3.4 Ensure all circuit breakers are OFF prior to starting test. ☐

4.3.5 Verify the Exhauster has been grounded. ☐

4.3.6 Verify all filters are in place. ☐

4.3.7 Verify the Inlet test section is in place. ☐

4.4 Test Director **SHALL VERIFY** that section 4.3 is **COMPLETE** by **SIGNING** below.

_____ _____

Test Director Signature Date

4.0 PREREQUISITES (Continued)

4.5 Test Director shall **VERIFY** the current calibration and, **RECORD** the calibration date on the table below.

INSTRUMENT		CALIBRATION DATE
PLENUM PRES XMIT	VTP-PT-2213A	
HEATER D/P XMIT	VTP-PDT-2214A	
PREFLT D/P XMIT	VTP-PDT-2215A	
FLT #1 D/P XMIT	VTP-PDT-2216A	
FLT #2 D/P XMIT	VTP-PDT-2217A	
FLT #1/2 D/P XMIT	VTP-PDT-2218A	
STACK FLOW XMIT	VTP-FT-2221A	
LLT SP XMIT	VTP-LIT-2210A	
LLT GLY XMIT	VTP-LT-2223A	
THERMOCOUPLE TC-1	VTP-TE-2221A	
THERMOCOUPLE TC-2	VTP-TE-2222A	

4.0 PREREQUISITES (Continued)

4.6 Test Director shall **VERIFY** the current calibration and, **RECORD** the calibration date on the table below.

INSTRUMENT		CALIBRATION DATE
PLENUM PRES DIS	VTP-PI-2213A	
HEATER D/P DIS	VTP-PDI-2214A	
PREFLT D/P DIS	VTP-PDI-2215A	
FLT #1 D/P DIS	VTP-PDI-2216A	
FLT #2 D/P DIS	VTP-PDI-2217A	
FLT #1/2 D/P DIS	VTP-PDI-2218A	
STACK FLOW DIS	VTP-FI-2221A	
LLT SP DIS	VTP-LI-2210A	
LLT GLY DIS	VTP-LI-2223A	
THERMOCOUPLE TC-1 DIS	VTP-TI-2221A	
THERMOCOUPLE TC-2 DIS	VTP-TI-2222A	

4.7 Test Director **SHALL VERIFY** that section 4.0 is **COMPLETE** by **SIGNING** below.

_____ _____

Test Director Signature Date

5.0 PROCEDURE

5.1 POWER SYSTEM CHECK

5.1.1 **INSPECT** the Exhauster system **AND VERIFY** that all equipment is properly **CONNECTED**. ☐

5.1.2 **VERIFY** Main 480V Disconnect Switch VTP-CKT-2201A is in the **OFF** position. ☐

5.1.3 **VERIFY** Exhauster Fan Motor 480V Disconnect Switch VTP-DS-2212A is in the **OFF** position. ☐

5.1.4 **VERIFY** Glycol Heater 480V Disconnect Switch VTP-DS-2213A is in the **OFF** position. ☐

5.1.5 **VERIFY** that Mini Power Zone 480V "primary" Circuit Breaker VTP-CKT-2210A (located at Mini Power Zone Cabinet VTP-PNL-2204A) is **OFF**. ☐

5.1.6 **VERIFY** that Mini Power Zone 120V "secondary" Circuit Breaker VTP-CKT-2211A (located at MPZ Cabinet) is **OFF**. ☐

5.1.7 **VERIFY** the following 120V circuit breakers (located at MPZ Cabinet) are **OFF**:

5.1.7.1 Circuit Breaker # 1 (Enclosure Heaters and Fans) ☐

5.1.7.2 Circuit Breaker # 2 (Flammable Gas Monitor) ☐

5.1.7.3 Circuit Breaker # 3 (PLC power) ☐

5.1.7.4 Circuit Breaker # 4 (Heat Trace) ☐

5.1.7.5 Circuit Breaker # 5 (Convenience Receptacle) ☐

5.1 POWER SYSTEM CHECK (Continued)

5.1.7.6 Circuit Breaker # 6 (PLC control circuit, Module 8) ☐

5.1.7.7 Circuit Breaker # 7 (PLC control circuit, Module 9) ☐

5.1.7.8 Circuit Breaker # 8 (spare) ☐

5.1.8 **VERIFY** Fan Control Selector Switch VTP-HS-2212A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is in **OFF** position. ☐

5.1.9 **VERIFY** Glycol Pump Control Switch VTP-HS-2213A (located on door of Control Cabinet VTP-PNL-2205A) is in **OFF** position. ☐

5.1.10 **VERIFY** Seal Pot Pump Control Selector Switch VTP-HS-2211A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is in **AUTO** position. ☐

5.1.11 **VERIFY** CAB HEAT/COOL Selector Switch (located on door of Control Cabinet) is in **OFF** position. ☐

5.1.12 **VERIFY** CAB HEAT/COOL Selector Switch (located on door of Intrinsic Barrier/Heat Trace Cabinet) is in **OFF** position. ☐

5.1.13 **DISCONNECT** Exhauster fan motor circuit from the Variable Frequency Drive terminals T1, T2 and T3. ☐

5.1 POWER SYSTEM CHECK (Continued)

CAUTION

Do not apply Megger voltage to the Variable Frequency Drive VTP-VFD-2212A.

5.1.14 **USING** a 1000V Megger, megger test from each T1, T2 and T3 lead to ground and between the leads T1, T2 and T3, **ENSURE** there is **NOT** a short between Exhauster fan motor or Exhauster fan motor housing. ☐

5.1.15 **RECONNECT** Exhauster fan motor circuit to the Variable Frequency Drive terminals T1, T2 and T3. ☐

5.1.16 **USING** a 1000V Megger, megger test at the Heater Contactor VTP-CON-2213A load side (located at Control Cabinet VTP-PNL-2205A), **ENSURE** there is **NOT** a short between Heater circuits or Heater housing. ☐

5.1.17 **USING** a 500V Megger and DMM, **VERIFY** that Heat Trace heating leads insulation resistance is greater than 100 Mohms and heating leads continuity is less than 1000 Ohm. ☐

5.1.18 **CONNECT** the Exhauster to a 480V 3 phase power source fused no greater than 30A. ☐

5.1.19 **POSITION** Main 480V Disconnect Switch VTP-CKT-2201A to **ON** position . ☐

5.1.20 **PRESS** red EMERGENCY STOP button (located on door of Main 480V Disconnect Switch VTP-CKT-2201A). ☐

5.1.21 **VERIFY** the Main 480V Disconnect Switch Circuit Breaker VTP-CKT-2201A has tripped. ☐

5.1.22 **RESET** the Main 480V Disconnect Switch Circuit Breaker VTP-CKT-2201A to **ON** position. ☐

5.1 POWER SYSTEM CHECK (Continued)

5.1.23 **VERIFY** Green FAN OFF light (located on door of Exhauster Control Cabinet) is **NOT ILLUMINATED.** ☐

5.1.24 **VERIFY** Red FAN RUNNING light (located on door of Exhauster Control Cabinet) is **NOT ILLUMINATED.** ☐

5.1.25 **VERIFY** Glycol Heater is **OFF** by **OBSERVING** that the Glycol Heater Contactor VTP-CON-2213A contactor (located in Control Cabinet VTP-PNL-2205A)is **OPEN.** ☐

5.1.26 **VERIFY** the Glycol Circulation Pump is **OFF** by **LISTENING** to and/or **FEELING** the Pump. ☐

5.1.27 **VERIFY** that "HEAT TRACE ON" Indicating Light (located on door of Intrinsic Barrier/Heat Trace cabinet VTP-PNL-2206A) is **NOT ILLUMINATED.** ☐

5.1.28 **VERIFY** Exhauster Control Cabinet Heater VTP-HTR-2205A is **OFF.** ☐

5.1.29 **VERIFY** Exhauster Control Cabinet Fan VTP-F-2205A is **OFF.** ☐

5.1.30 **VERIFY** Cabinet Heater VTP-HTR-2216A in Intrinsic Barrier / Heat Trace Cabinet is **OFF.** ☐

5.1.31 **VERIFY** Cabinet Fan VTP-F-2216A in Intrinsic Barrier / Heat Trace Cabinet is **OFF.** ☐

5.1.32 **VERIFY** Alarm Cabinet Heater VTP-HTR-2207A is **OFF.** ☐

5.1.33 **VERIFY** Alarm Cabinet Fan VTP-F-2207A is **OFF.** ☐

5.1 POWER SYSTEM CHECK (Continued)

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.1.34 **CLOSE** Mini Power Zone 480V "primary" Circuit Breaker VTP-CKT-2210A (located at Mini Power Zone Cabinet VTP-PNL-2204A). ☐

5.1.35 **CLOSE** Mini Power Zone 120V "secondary" Circuit Breaker VTP-CKT-2211A (located at MPZ Cabinet). ☐

5.1.36 **POSITION** the following 120V circuit breakers (located at MPZ Cabinet) to **ON**: ☐

5.1.36.1 Circuit Breaker # 1 (Enclosure Heaters and Fans) ☐

5.1.36.2 Circuit Breaker # 2 (Flammable Gas Monitor) ☐

5.1.36.3 Circuit Breaker # 3 (PLC power) ☐

5.1.36.4 Circuit Breaker # 4 (Heat Trace) ☐

5.1.36.5 Circuit Breaker # 5 (Convenience Receptacle) ☐

5.1.36.6 Circuit Breaker # 6 (PLC control circuit, Module 8) ☐

5.1.36.7 Circuit Breaker # 7 (PLC control circuit, Module 9) ☐

5.1.36.8 Circuit Breaker # 8 (spare) ☐

5.1 POWER SYSTEM CHECK (Continued)

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.1.37 **USING** a DMM, **VERIFY** 120V at the following circuit breakers (located at MPZ Cabinet): ☐

5.1.37.1 Circuit Breaker # 1 (Enclosure Heaters and Fans) ☐

5.1.37.2 Circuit Breaker # 2 (Flammable Gas Monitor) ☐

5.1.37.3 Circuit Breaker # 3 (PLC power) ☐

5.1.37.4 Circuit Breaker # 4 (Heat Trace) ☐

5.1.37.5 Circuit Breaker # 5 (Convenience Receptacle) ☐

5.1.37.6 Circuit Breaker # 6 (PLC control circuit, Module 8) ☐

5.1.37.7 Circuit Breaker # 7 (PLC control circuit, Module 9) ☐

5.1.37.8 Circuit Breaker # 8 (spare) ☐

5.1.38 **PRESSING** Ground Fault Circuit Interrupter button at Circuit Breaker #5 (located at MPZ Cabinet). ☐

5.1.39 **VERIFY** circuit Breaker #5 has tripped. ☐

5.1 POWER SYSTEM CHECK (Continued)

5.1.40 **RESET** circuit Breaker #5. ☐

5.1.41 **PRESSING** the button of Ground Fault Protection for Equipment (located at MPZ Cabinet Circuit Breaker #4). ☐

5.1.42 **VERIFY** circuit Breaker #4 (located at MPZ Cabinet) has tripped. ☐

5.1.43 **RESET** circuit Breaker #4. ☐

NOTE - Following steps verify proper operation of the Cabinet Cooling Fans and Cabinet Heaters.

5.1.44 **SET** the Alarm Cabinet Heater VTP-HTR-2207A thermostat temperature to above the ambient temperature. ☐

5.1.45 **SET** the Control Cabinet Heater VTP-HTR-2205A thermostat temperature to above the ambient temperature. ☐

5.1.46 **POSITION** the CAB HEAT/COOL Selector Switch (located on door of Control cabinet) to "SUMMER". ☐

5.1.47 **VERIFY** the following:

5.1.47.1 Control Cabinet Cooling Fan VTP-F-2205A is rotating. ☐

5.1.47.2 Control Cabinet Cooling Fan VTP-F-2205A air flow is flowing from the outside to the inside of the cabinet. ☐

5.1.47.3 Alarm Cabinet Cooling Fan VTP-F-2207A is rotating. ☐

5.1 POWER SYSTEM CHECK (Continued)

5.1.47.4 Alarm Cabinet Cooling Fan VTP-F-2207A air flow is flowing from the outside to the inside of the cabinet. ☐

5.1.47.5 Control Cabinet Heater VTP-HTR-2205A is **OFF**. ☐

5.1.47.6 Alarm Cabinet Heater VTP-HTR-2207A is **OFF**. ☐

5.1.48 **POSITION** the CAB HEAT/COOL Selector Switch (located on door of Control cabinet) to "WINTER". ☐

5.1.49 **VERIFY** the following:

5.1.49.1 Control Cabinet Cooling Fan VTP-F-2205A is **OFF**. ☐

5.1.49.2 Alarm Cabinet Cooling Fan VTP-F-2207A is **OFF**. ☐

5.1.49.3 Control Cabinet Heater VTP-HTR-2205A is **ON**. ☐

5.1.49.4 Alarm Cabinet Heater VTP-HTR-2205A is **ON**. ☐

5.1.50 **SET** the Control Cabinet Heater VTP-HTR-2205A thermostat temperature to below the ambient temperature. ☐

5.1.51 **VERIFY** Control Cabinet Heater VTP-HTR-2205A is **OFF**. ☐

5.1.52 **SET** the Alarm Cabinet Heater VTP-HTR-2207A thermostat temperature to below the ambient temperature. ☐

5.1.53 **VERIFY** Alarm Cabinet Heater VTP-HTR-2207A is **OFF**. ☐

5.1 POWER SYSTEM CHECK (Continued)

5.1.54 **SET** the Intrinsic Barrier/Heat Trace Cabinet Heater VTP-HTR-2206A thermostat temperature to above the ambient temperature. ☐

5.1.55 **POSITION** the CAB HEAT/COOL Selector Switch (located on door of Intrinsic Barrier/Heat Trace cabinet) to "SUMMER". ☐

5.1.56 **VERIFY** the Intrinsic Barrier/Heat Trace Cabinet Cooling Fan VTP-F-2206A is rotating. ☐

5.1.57 **VERIFY** the Intrinsic Barrier/Heat Trace Cabinet Cooling Fan air flow is flowing from the outside to the inside of the cabinet. ☐

5.1.58 **VERIFY** Intrinsic Barrier/Heat Trace Heater VTP-HTR-2206A is **OFF**. ☐

5.1.59 **POSITION** the CAB HEAT/COOL Selector Switch (located on door of Intrinsic Barrier/Heat Trace) to "WINTER". ☐

5.1.60 **VERIFY** the Intrinsic Barrier/Heat Trace Cabinet Cooling Fan VTP-F-2206A is **OFF**. ☐

5.1.61 **VERIFY** the Intrinsic Barrier/Heat Trace Cabinet Heater VTP-HTR-2206A is **ON**. ☐

5.1.62 **SET** the Intrinsic Barrier/Heat Trace Cabinet Heater VTP-HTR-2206A thermostat temperature to below the ambient temperature. ☐

5.1.63 **VERIFY** Intrinsic Barrier/Heat Trace Cabinet Heater VTP-HTR-2206A is **OFF**. ☐

5.1 POWER SYSTEM CHECK (Continued)

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.1.64 **USING** a DMM, **VERIFY** 120V at the Mini Power Zone Cabinet (VTP-PNL-2204A) Receptacle. ☐

5.1.65 **VERIFY** polarity of the Mini Power Zone Cabinet Receptacle. ☐

5.1.66 **USING** a DMM, **VERIFY** 120V at the Alarm Cabinet (VTP-PNL-2207A) Receptacle. ☐

5.1.67 **VERIFY** polarity of the Alarm Cabinet Receptacle. ☐

NOTE - Wilkerson indicators for DPTs should be indicating zero.

5.1.68 **VERIFY** the Wilkerson indicators are indicating correctly by filling the following table. ☐

Indicators	Reading (IN W.C.)	OK (✓)	Indicators	Reading	OK (✓)
VTP-PI-2213A			VTP-FI-2221A	IN W.C.	
VTP-PDI-2214A			VTP-LI-2210A	%	
VTP-PDI-2215A			VTP-LI-2223A	%	
VTP-PDI-2216A			VTP-TI-2221A	°F	
VTP-PDI-2217A			VTP-TI-2222A	°F	
VTP-PDI-2218A					

5.1 POWER SYSTEM CHECK (Continued)

5.1.69 **VERIFY** the following indicating lights (located on door of Exhauster Control Cabinet VTP-PNL-2205A) are **ILLUMINATED:**

5.1.69.1 Green FAN OFF light. ☐

5.1.69.2 Digital readouts on all seven DPTs. ☐

5.1.69.3 Message View Display VTP-PUI-2207A and VTP-UI-2208A (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.1.70 **POSITION** the following 120V circuit breakers (located at MPZ Cabinet) to **OFF:**

5.1.70.1 Circuit Breaker # 2 (Flammable Gas Monitor) ☐

5.1.70.2 Circuit Breaker # 8 (spare) ☐

5.1.71 Test Director **SHALL VERIFY** that section 5.1 is **COMPLETE** by **SIGNING** below.

_____ _____

Test Director Signature Date

5.2 PRESSURE DECAY TEST

5.2.1 **PERFORM** the following inspections:

5.2.1.1 **VERIFY** Filter Train ductwork, housings, filters, connections, gaskets, and seals **DO NOT** have signs of damage, component misalignment, improper installation, or other functional problems. ☐

5.2.1.2 **REMOVE** filter housing doors. ☐

5.2.1.3 **INSPECT** the HEPA filters, filter housing, and the filter housing doors and their seals for obvious signs of damage. ☐

5.2.1.4 **ENSURE** that the HEPA filters have been properly locked against its sealing frame and that the filter housing doors (prefilter and HEPA filters) are secured. ☐

5.2.1.5 **REPAIR** components as noted on the Exception Resolution. ☐

5.2.1.6 **TIGHTEN** filter housing door latches in a gradual, equal sequence to ensure an even door gasket seal. ☐

5.2.2 **CLOSE** Filter train Inlet valve VTP-V-2250A. ☐

5.2.3 **CLOSE** Filter train Outlet valve VTP-V-2251A. ☐

5.2.4 **VERIFY** Seal Pot VTP-SP-2210A is empty. ☐

5.2.5 **VERIFY** Seal Pot Fill Valve VTP-V-2258A is **CLOSED**. ☐

5.2 PRESSURE DECAY TEST (Continued)

5.2.6 **VERIFY** Seal Pot Overflow Drain Line Valve VTP-V-2260A is **CLOSED**. ☐

5.2.7 **VERIFY** Seal Pot Drain Valve VTP-V-2259A is **CLOSED**. ☐

5.2.8 **VERIFY** Fan Drain Line Valve VTP-V-2257A is **CLOSED**. ☐

5.2.9 **UNSCREW** cap on the first stage HEPA Filter Aerosol Injection Port VTP-FTP-2201A on the test section next to Prefilter. ☐

5.2.10 **INSTALL AND SEAL** the pressure measuring device into the first stage HEPA Filter Aerosol Injection Port VTP-FTP-2201A. ☐

5.2.11 **INSTALL** the air supply line (with safety relief mechanism, isolation valve, and pressure reducer) into the second stage HEPA Filter Aerosol Injection Aerosol Test Port VTP-FTP-2204A. ☐

5.2.12 **UNSCREW** cap on the first Stage HEPA Filter Thermocouple (VTP-TE-2222A) Port on top of filter train housing, next to Prefilter. ☐

5.2.13 **INSTALL** and **SEAL** the temperature measuring instrument into the Thermocouple VTP-TE-2222A port. ☐

NOTE - Next step starts checking positive pressure decay.

5.2.14 **PRESSURIZE** test housing/duct assembly to +11.5 $\pm$ 0.5 in wg. ☐

5.2.15 **LOCATE** (using a suitable bubble solution) and **SEAL** all leaks as practical. ☐

5.2 PRESSURE DECAY TEST (Continued)

5.2.16 **MAINTAIN** constant pressure until temperature remains constant within ± 0.5 °F for a minimum of 10 minutes. ☐

5.2.17 **ISOLATE** the air supply from the filter housing while **STARTING** the clock. ☐

5.2.18 **RECORD** the initial time, barometric pressure, pressure, and temperature on Data Sheet 1. ☐

5.2.19 **RECORD** pressure and temperature readings a minimum of once a minute, **UNTIL** pressure decays to 75% of the recorded starting pressure (previous step) or for a maximum of 15 minutes, which ever comes first on the following table. ☐

Minute	1	2	3	4	5	6	7	8
pr (IN WC)								
Temp(°F)								
Minute	9	10	11	12	13	14	15	
pr (IN WC)								
Temp(°F)								

5.2.20 **RECORD** final time, barometric pressure, and temperature on Data Sheet 1. ☐

5.2.21 **PERFORM** the leak rate calculations per Data Sheet 1. ☐

5.2.22 **ENSURE** the leak rate calculations are verified independently by QC. ☐

5.2.23 **IF** $Q < L_s$ then **RECORD** "PASS" on Data Sheet 1. Otherwise, **RECORD** "RETEST" on Data Sheet 1. ☐

5.2 PRESSURE DECAY TEST (Continued)

5.2.24 **IF** a retest is needed, then **PERFORM** the following:

5.2.24.1 **DETERMINE** the leak path(s) and **REPAIR** leaks as noted on the Exception Resolution. ☐

5.2.24.2 **REPEAT** steps 5.2.14 through 5.2.24 using new data sheets. ☐

5.2.25 **DISCONNECT** the air supply. ☐

5.2.26 **SLOWLY RELIEVE** pressure from Filter Train housing. ☐

5.2.27 **CONNECT** a vacuum source to the Pressure Test Assembly at Aerosol Injection Port VTP-FTP-2204A. ☐

NOTE - Next step starts checking negative pressure decay.

5.2.28 **DECREASE** Filter Train housing internal pressure to -11.5 ± 0.5 IN W.C. as **INDICATED** by the Pressure measuring device. ☐

5.2.29 **MAINTAIN** constant pressure until temperature remains constant within ± 0.5 °F for a minimum of 10 minutes. ☐

5.2.30 **ISOLATE** the vacuum source from the filter housing while starting the clock. ☐

5.2.31 **RECORD** the initial time, barometric pressure, pressure, and temperature on Data Sheet 2. ☐

5.2 PRESSURE DECAY TEST (Continued)

5.2.32 **RECORD** pressure and temperature readings a minimum of once a minute, **UNTIL** pressure decays to 75% of the recorded starting pressure (previous step) or for a maximum of 15 minutes, which ever comes first on the following table.

Minute	1	2	3	4	5	6	7	8
pr (IN WC)								
Temp(°F)								
Minute	9	10	11	12	13	14	15	
pr (IN WC)								
Temp(°F)								

5.2.33 **RECORD** final time, barometric pressure and temperature on Data Sheet 2. ☐

5.2.34 **PERFORM** the leak rate calculations per Data Sheet 2. ☐

5.2.35 **ENSURE** the leak rate calculations are verified independently by QC. ☐

5.2.36 **IF** $Q < L_s$ then **RECORD** "PASS" on Data Sheet 2 **AND GO TO** step 5.2.38. Otherwise, **RECORD** "RETEST" on Data Sheet 2. ☐

5.2.37 **IF** a retest is needed, then **PERFORM** the following: ☐

5.2.37.1 **DETERMINE** the leak path(s) and **REPAIR** leaks as noted on the Exception Resolution. ☐

5.2.37.2 **REPEAT** steps 5.2.28 through 5.2.37 using new data sheets. ☐

5.2.38 **DISCONNECT** the test equipment. ☐

5.2 PRESSURE DECAY TEST (Continued)

5.2.39 **SLOWLY** equalize Filter Train housing pressure to atmospheric. ☐

5.2.40 **REINSTALL** the test port plugs. ☐

5.2.41 **OPEN** Filter Train Inlet valve VTP-V-2250A. ☐

5.2.42 **OPEN** Filter Train outlet valve VTP-V-2251A. ☐

5.2.43 **OPEN** Fan Drain Line valve VTP-V-2257A. ☐

5.2.44 Test Director **SHALL VERIFY** that section 5.2 is **COMPLETE** by **SIGNING** below.

_____ _____
Test Director Signature Date

5.2.45 QC Inspector **SHALL VERIFY** that section 5.2 is **COMPLETE** by **SIGNING** below.

_____ _____
QC Inspector Signature Date

5.3 EXHAUSTER FAN CHECK

5.3.1 **POSITION** the Exhauster Fan Motor Disconnect Switch VTP-DS-2212A to **ON.**

☐

5.3.2 **VERIFY** Fan does **NOT** start automatically.

☐

5.3.3 **VERIFY** Green FAN OFF light (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **ILLUMINATED.**

☐

5.3.4 **VERIFY** Red FAN RUNNING light (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **NOT ILLUMINATED.**

☐

5.3.5 **POSITION** Fan Control Switch (SSFC) VTP-HS-2212A to "ENABLE" position (located on door of Exhauster Control Cabinet VTP-PNL-2205A).

☐

5.3.6 **PRESS** Fan Start Button (PBSTRT) VTP-PB-2212M **AND THEN QUICKLY PRESS** Fan Stop Button (PBSTP) VTP-PB-2212H (i.e. bump the fan)located on door of Exhauster Control Cabinet.

☐

5.3.7 **VERIFY** that direction of rotation of the Exhauster fan is in the **DIRECTION** of the arrow on the fan housing or motor shroud.

☐

5.3.8 **IF** Exhauster Fan rotation direction is correct, **GO TO** step 5.3.10.

☐

5.3.9 **IF** direction of rotation of the Exhauster Fan is incorrect, then **PERFORM** the following:

5.3.9.1 **DO NOT EXECUTE** any further part of 5.3 in this ATP **UNTIL** next step through 5.3.9.5 are **COMPLETED.**

☐

5.3.9.2 **POSITION** Fan Motor Disconnect Switch VTP-DS-2212A to **OFF.**

☐

5.3 EXHAUSTER FAN CHECK (Continued)

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.3.9.3 **CORRECT** the Exhauster Fan rotation direction by **CORRECTING** the leads at the Fan Motor Disconnect Switch VTP-CKT-2212A. ☐

5.3.9.4 **POSITION** Fan Motor Disconnect Switch VTP-CKT-2212A to **ON**. ☐

5.3.9.5 **REPEAT** steps 5.3.6 through 5.3.9. ☐

5.3.10 **OPEN** the High and Low valves **AND CLOSE** Equalizing valve on each three valve manifold for the following DPTs:

DPT	OPEN HI	OPEN LO	CLOSE Equal
VTP-PT-2213A			
VTP-PDT-2214A			
VTP-PDT-2215A			
VTP-PDT-2216A			
VTP-PDT-2217A			
VTP-PDT-2218A			
VTP-FT-2221A			

5.3.11 **POSITION** Fan Motor Disconnect Switch VTP-CKT-2212A to **OFF**. ☐

5.3.12 **REMOVE** Fan shaft/belt guards as required to allow access to shaft bearings. ☐

5.3 EXHAUSTER FAN CHECK (Continued)

5.3.13 **POSITION** Fan Motor Disconnect Switch VTP-CKT-2212A to **ON**. ☐

5.3.14 **PRESS** Fan Start Button VTP-PB-2212M (PBSTRT) (located on door of Exhauster Control Cabinet VTP-PNL-2205A) to turn **ON** Exhauster Fan **AND NOTE** time at same time. ☐

5.3.15 **VERIFY** Fan Ramp Up Time is approximately 10 sec, or as programmed in Variable Frequency Drive VTP-VFD-2212A is programmed. ☐

5.3.16 **VERIFY** Green FAN OFF light (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **NOT ILLUMINATED**. ☐

5.3.17 **VERIFY** Red FAN RUNNING light (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **ILLUMINATED**. ☐

5.3.18 **ENSURE** Exhauster Fan is operating normally with no unusual noise. ☐

NOTE - Next step starts the Exhauster Fan vibration test. The testing is based on ASME N509 requirements for 3450 RPM.

5.3.19 **USING** the vibration instrument, **RECORD** the measured data in the table at next step. **IF** the bearing is not accessible **ENTER** "N/A". ☐

5.3 EXHAUSTER FAN CHECK (Continued)

5.3.20 **VERIFY** that the Filtered Bearing Vibration Levels on the fan shaft bearings should meet the following criteria:

- Displacement <.6 MILS (PK-TO-PK) at one times the fan, speed

OR

- Velocity < .11 IN/SEC (PK)at one times the fan speed.

Plane	Axial	OK (✓)	Horizontal	OK (✓)	Vertical	OK (✓)
Sheave End Fan Shaft Bearing Displacement (Mils) Velocity (IN/SEC)						
Fan End Fan Shaft bearing Displacement (Mils) Velocity (IN/SEC)						

5.3.21 **USING** the vibration instrument, **RECORD** the measured data in the table at next step **OR, IF** the bearing is not accessible **ENTER** "N/A".

☐

5.3 EXHAUSTER FAN CHECK (Continued)

5.3.22 **VERIFY** that the Overall (unfiltered) Bearing Vibration Levels on the fan shaft bearings meet the following criteria:

- Displacement <1.7 MILS (PK-TO-PK) Overall,

OR

- Velocity < .31 IN/SEC (PK) Overall.

Plane	Axial	OK (✓)	Horizontal	OK (✓)	Vertical	OK (✓)
Sheave End Fan Shaft Bearing Displacement (Mils) Velocity (IN/SEC)						
Fan End Fan Shaft bearing Displacement (Mils) Velocity (IN/SEC)						

5.3.23 **IF** Exhauster Fan is operating normally, **GO TO** step 5.3.29. ☐

5.3.24 **IF** the Exhauster Fan is not operating normally then **SHUTDOWN** the fan by **PRESSING** Fan Stop Button VTP-PB-2212H (PBSTP)(located at door of Exhauster Control Cabinet). ☐

5.3.25 **Position** Exhauster Fan Motor Disconnect Switch VTP-DS-2212A to **OFF.** ☐

5.3.26 **REPAIR** equipment as noted on the Exception Resolution. ☐

5.3.27 **POSITION** EXHAUSTER FAN MOTOR DISCONNECT SWITCH VTP-DS-2212A to **ON.** ☐

5.3.28 **REPEAT** steps 5.3.15 to 5.3.24. ☐

5.3 EXHAUSTER FAN CHECK (Continued)

5.3.29 **PRESS** Fan Stop Button VTP-PB-2212H (PBSTP) (located on door of Exhauster Control Cabinet VTP-PNL-2205A) to turn **OFF** Exhauster Fan **AND NOTE** time at same time. ☐

5.3.30 **VERIFY** Fan Ramp Down Time is approximately 10 sec, as VTP-VFD-2212A programmed. ☐

5.3.31 **VERIFY** Exhauster fan has **SHUTDOWN.** ☐

5.3.32 **POSITION** Fan Motor Disconnect Switch VTP-CKT-2212A to **OFF.** ☐

5.3.33 **REPLACE** Fan shaft/belt guards. ☐

5.3.34 **POSITION** Fan Motor Disconnect Switch VTP-CKT-2212A to **ON.** ☐

5.3.35 Test Director **SHALL VERIFY** that section 5.3 is **COMPLETE** by **SIGNING** below.

_____ _____

Test Director Signature Date

5.4 HEAT TRACE CHECK

5.4.1 **POSITION** Heat Trace 120V circuit breaker #4 (located at MPZ Cabinet VTP-DP-2204A) to **OFF.** ☐

5.4.2 **DISCONNECT** Heat Trace Thermostat VTP-TS-2224 (located on skid framing at Exhauster Control Cabinet VTP-PNL-2205A) from connector. ☐

5.4.3 **DE-TERM OR INSULATE** the Heat Trace Thermostat leads that are disconnected from the thermostat. ☐

5.4.4 **USING** DMM, **VERIFY** there is **NO** continuity between the Thermostat NO and COM contacts. ☐

5.4.5 **PLACE** Heat Trace Thermostat in a freezer to **SIMULATE** low temperature. ☐

5.4.6 **CONNECT** a wire jumper to terminals TB1HTC-1 and TB1HTC-2 (located at Intrinsic Barrier / Heat Trace Cabinet). ☐

5.4.7 **POSITION** Heat Trace 120V circuit breaker #4 (located at MPZ Cabinet VTP-DP-2204A) to **ON.** ☐

5.4.8 **USING** a DMM, **VERIFY** 120V at terminals TB1HTC-2 and TB2HTC-2 (located at Intrinsic Barrier / Heat Trace Cabinet VTP-PNL-2206A). ☐

5.4.9 **VERIFY** Heat Trace ON amber light (located at door of Intrinsic Barrier / Heat Trace Cabinet VTP-PNL-2206A) is **ILLUMINATED.** ☐

5.4.10 **POSITION** Heat Trace 120V circuit breaker #4 (located at MPZ Cabinet VTP-DP-2204A) to **OFF.** ☐

5.4 HEAT TRACE CHECK (Continued)

5.4.11 **DISCONNECT** wire jumper from terminals TB1HTC-1 and TB1HTC-2 (located at Intrinsic Barrier / Heat Trace Cabinet VTP-PNL-2206A).

☐

5.4.12 **WHEN** 30 minutes has elapsed, **REMOVE** Heat Trace Thermostat from freezer.

☐

5.4.13 **USING** DMM, **VERIFY** there is continuity between the Thermostat NO and COM contacts.

☐

5.4.14 **RECONNECT** Heat Trace Thermostat VTP-TS-2224A to the connector (located on skid framing at Exhauster Control Cabinet VTP-PNL-2205A).

☐

5.4.15 Test Director **SHALL VERIFY** that section 5.4 is **COMPLETE** by **SIGNING** below.

_____ _____

Test Director Signature Date

5.5 INTERLOCK/ALARM CHECK

NOTE - Next step starts check on Filter #1 DPT.

5.5.1 **CLOSE** valves labeled high and low on the three valve manifold at HEPA FILTER #1 Transmitter VTP-PDT-2216A (located on top of Filter Train). ☐

5.5.2 **REMOVE** plug from calibration port on the transmitter VTP-PDT-2216A three valve manifold. ☐

5.5.3 **CONNECT** a pressure source to calibration port on the transmitter VTP-PDT-2216A three valve manifold. ☐

5.5.4 **OPEN** Equalizing Valve on the transmitter VTP-PDT-2216A three valve manifold. ☐

5.5.5 **SET** pressure source pressure to approximately 3.0 IN W.C.. ☐

5.5.6 **VERIFY** Wilkerson indicator VTP-PDI-2216A(located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** within a range of 2.85 IN W.C. and 3.15 IN W.C.. ☐

5.5.7 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5.8 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5.9 **INCREASE** pressure source pressure to approximately 4.5 IN W.C.. ☐

5.5.10 **VERIFY** the following:

5.5.10.1 Rotating Beacon is **ILLUMINATED**. ☐

5.5.10.2 Red FAN RUNNING light is **ILLUMINATED**. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.10.3 Green FAN OFF light is **NOT ILLUMINATED**. ☐

5.5.10.4 Wilkerson indicator VTP-PDI-2216A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2216A, is **READING** within a range of 4.28 IN W.C. and 4.73 IN W.C.. ☐

5.5.10.5 Message View Displays VTP-UI-2207A and VTP-UI-2208A(located at Alarm Cabinet Swing Out Panel) **DISPLAY** "FILTER 1 DP HI". ☐

5.5.10.6 DPT readout **DISPLAYS** a value approximately equal to 4.5 IN W.C.. ☐

5.5.11 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.12 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.13 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 1 DP HI". ☐

5.5.14 **INCREASE** pressure source pressure to approximately 5.4 IN W.C.. ☐

5.5.15 **VERIFY** the following:

5.5.15.1 Exhauster Fan has **SHUTDOWN**. ☐

5.5.15.2 Red FAN RUNNING light is **NOT ILLUMINATED**. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.15.3 Green FAN OFF light is **ILLUMINATED**. ☐

5.5.15.4 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.5.15.5 Wilkerson indicator VTP-PDI-2216A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2216A, is **READING** within a range of 5.13 IN W.C. and 5.67 IN W.C.. ☐

5.5.15.6 Message View Display VTP-UI-2207 (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "FILTER 1 DP HIHI" and "FAN SHUTDOWN". ☐

5.5.15.7 DPT readout **DISPLAYS** a value approximately equal to 5.4 IN W.C.. ☐

5.5.16 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then button on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.17 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.18 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 1 DP HIHI" and "FAN SHUTDOWN". ☐

5.5.19 **DECREASE** pressure source pressure to approximately 3.0 IN W.C.. ☐

5.5.20 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5.21 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.22 **DECREASE** pressure source pressure to approximately 0.05 IN W.C..

☐

5.5.23 **VERIFY** the following:

5.5.23.1 Exhauster Fan has **SHUTDOWN**.

☐

5.5.23.2 Red FAN RUNNING light is **NOT ILLUMINATED**.

☐

5.5.23.3 Green FAN OFF light is **ILLUMINATED**.

☐

5.5.23.4 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**.

☐

5.5.23.5 Wilkerson indicator VTP-PDI-2216A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2216A, is **READING** within a range of 0.047 IN W.C. and 0.053 IN W.C..

☐

5.5.23.6 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "FILTER 1 DP LO" and "FAN SHUTDOWN".

☐

5.5.23.7 DPT readout **DISPLAYS** a value approximately equal to 0.05 IN W.C..

☐

5.5.24 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel).

☐

5.5.25 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**.

☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.26 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 1 DP LO" and "FAN SHUTDOWN". ☐

5.5.27 **DISCONNECT** pressure source from the transmitter calibration port. ☐

5.5.28 **CLOSE** Equalizing Valve at the transmitter three valve manifold. ☐

5.5.29 **REPLACE** plug to calibration port on the transmitter VTP-PDT-2216A three valve manifold. ☐

5.5.30 **OPEN** valves labeled high and low on three valve manifold at transmitter VTP-PDT-2216A (located on top of Filter Train). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

NOTE - Next step starts check on Filter #2 DPT.

5.5.31 **CLOSE** valves labeled high and low on the three valve manifold at HEPA FILTER #2 Transmitter VTP-PDT-2217A (located on top of Filter Train). ☐

5.5.32 **REMOVE** plug from calibration port on the transmitter VTP-PDT-2217A three valve manifold. ☐

5.5.33 **CONNECT** a pressure source to calibration port on the transmitter VTP-PDT-2217A three valve manifold. ☐

5.5.34 **OPEN** Equalizing Valve on the transmitter VTP-PDT-2217A three valve manifold. ☐

5.5.35 **SET** pressure source pressure to approximately 3.0 IN W.C.. ☐

5.5.36 **VERIFY** Wilkerson indicator VTP-PDI-2217A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** within a range of 2.85 IN W.C. and 3.15 IN W.C.. ☐

5.5.37 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5.38 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5.39 **INCREASE** pressure source pressure to approximately 3.2 IN W.C.. ☐

5.5.40 **VERIFY** the following:

5.5.40.1 Rotating Beacon is **ILLUMINATED.** ☐

5.5.40.2 Red FAN RUNNING light is **ILLUMINATED.** ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.40.3 Green FAN OFF light is **NOT ILLUMINATED**. ☐

5.5.40.4 Wilkerson indicator VTP-PDI-2217A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2217A, is **READING** within a range of 3.04 IN W.C. and 3.36 IN W.C.. ☐

5.5.40.5 Message View Displays VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "FILTER 2 DP HI". ☐

5.5.40.6 DPT readout **DISPLAYS** a value approximately equal to 3.2 IN W.C.. ☐

5.5.41 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.42 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.43 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 2 DP HI". ☐

5.5.44 **INCREASE** pressure source pressure to approximately 3.7 IN W.C.. ☐

5.5.45 **VERIFY** the following:

5.5.45.1 Exhauster Fan has **SHUTDOWN**. ☐

5.5.45.2 Red FAN RUNNING light is **NOT ILLUMINATED**. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.45.3 Green FAN OFF light is **ILLUMINATED**. ☐

5.5.45.4 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.5.45.5 Wilkerson indicator VTP-PDI-2217A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2217A, is **READING** within a range of 3.52 IN W.C. and 3.88 IN W.C.. ☐

5.5.45.6 Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "FILTER 2 DP HIHI" and "FAN SHUTDOWN". ☐

5.5.45.7 DPT readout **DISPLAYS** a value approximately equal to 3.7 IN W.C.. ☐

5.5.46 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "↵" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.47 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.48 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 2 DP HIHI" and "FAN SHUTDOWN". ☐

5.5.49 **DECREASE** pressure source pressure to approximately 3.0 IN W.C.. ☐

5.5.50 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.51 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5.52 **DECREASE** pressure source pressure to approximately 0.05 IN W.C.. ☐

5.5.53 **VERIFY** the following:

5.5.53.1 Exhauster Fan has **SHUTDOWN**. ☐

5.5.53.2 Red FAN RUNNING light is **NOT ILLUMINATED**. ☐

5.5.53.3 Green FAN OFF light is **ILLUMINATED**. ☐

5.5.53.4 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.5.53.5 Wilkerson indicator VTP-PDI-2217A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2217A, is **READING** within a range of 0.048 IN W.C. and 0.052 IN W.C.. ☐

5.5.53.6 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "FILTER 1 DP LO" and "FAN SHUTDOWN". ☐

5.5.53.7 DPT readout **DISPLAYS** a value approximately equal to 0.05 IN W.C.. ☐

5.5.54 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.55 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.56 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 2 DP LO" and "FAN SHUTDOWN". ☐

5.5.57 **DISCONNECT** pressure source from the transmitter calibration port. ☐

5.5.58 **CLOSE** Equalizing Valve at the transmitter three valve manifold. ☐

5.5.59 **REPLACE** plug to calibration port on the transmitter VTP-PDT-2217A three valve manifold. ☐

5.5.60 **OPEN** valves labeled high and low on three valve manifold at transmitter VTP-PDT-2217A (located on top of Filter Train). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

NOTE - Next step starts check on Filter #1/2 DPT.

5.5.61 **CLOSE** valves labeled high and low on the three valve manifold at HEPA FILTER #1/2 Transmitter VTP-PDT-2218A (located on top of Filter Train). ☐

5.5.62 **REMOVE** plug from calibration port on the transmitter VTP-PDT-2218A three valve manifold. ☐

5.5.63 **CONNECT** a pressure source to calibration port on the transmitter VTP-PDT-2218A three valve manifold. ☐

5.5.64 **OPEN** Equalizing Valve on the transmitter VTP-PDT-2218A three valve manifold. ☐

5.5.65 **SET** pressure source pressure to approximately 3.0 IN W.C.. ☐

5.5.66 **VERIFY** Wilkerson indicator VTP-PDI-2218A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** within a range of 2.85 IN W.C. and 3.15 IN W.C.. ☐

5.5.67 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5.68 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5.69 **INCREASE** pressure source pressure to approximately 4.5 IN W.C.. ☐

5.5.70 **VERIFY** the following:

5.5.70.1 Rotating Beacon is **ILLUMINATED**. ☐

5.5.70.2 Red FAN RUNNING light is **ILLUMINATED**. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.70.3 Green FAN OFF light is **NOT ILLUMINATED.** ☐

5.5.70.4 Wilkerson indicator VTP-PDI-2218A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2218A, is **READING** within a range of 4.28 IN W.C. and 4.73 IN W.C.. ☐

5.5.70.5 Message View Displays VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "FILTER 1&2 DP HI". ☐

5.5.70.6 DPT readout **DISPLAYS** a value approximately equal to 4.5 IN W.C.. ☐

5.5.71 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "↵" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.72 **VERIFY** Rotating Beacon is **NOT ILLUMINATED.** ☐

5.5.73 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 1&2 DP HI". ☐

5.5.74 **INCREASE** pressure source pressure to approximately 5.4 IN W.C.. ☐

5.5.75 **VERIFY** the following:

5.5.75.1 Exhauster Fan has **SHUTDOWN.** ☐

5.5.75.2 Red FAN RUNNING light is **NOT ILLUMINATED.** ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.75.3 Green FAN OFF light is **ILLUMINATED**. ☐

5.5.75.4 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.5.75.5 Wilkerson indicator VTP-PDI-2218A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2218A, is **READING** within a range of 5.13 IN W.C. and 5.67 IN W.C.. ☐

5.5.75.6 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "FILTER 1&2 DP HIHI" and "FAN SHUTDOWN". ☐

5.5.75.7 DPT readout **DISPLAYS** a value approximately equal to 5.4 IN W.C.. ☐

5.5.76 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "↵" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.77 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.78 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 1&2 DP HIHI" and "FAN SHUTDOWN". ☐

5.5.79 **DECREASE** pressure source pressure to approximately 3.0 IN W.C.. ☐

5.5.80 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.81 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5.82 **DECREASE** pressure source pressure to approximately 0.05 IN W.C.. ☐

5.5.83 **VERIFY** the following:

5.5.83.1 Exhauster Fan has **SHUTDOWN.** ☐

5.5.83.2 Red FAN RUNNING light is **NOT ILLUMINATED.** ☐

5.5.83.3 Green FAN OFF light is **ILLUMINATED.** ☐

5.5.83.4 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED.** ☐

5.5.83.5 Wilkerson indicator VTP-PDI-2218A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2218A, is **READING** within a range of 0.048 IN W.C. and 0.052 IN W.C.. ☐

5.5.83.6 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "FILTER 1&2 DP LO" and "FAN SHUTDOWN". ☐

5.5.83.7 DPT readout **DISPLAYS** a value approximately equal to 0.05 IN W.C.. ☐

5.5.84 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.85 **VERIFY** Rotating Beacon is **NOT ILLUMINATED.** ☐

5.5.86 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "FILTER 1&2 DP LO" and "FAN SHUTDOWN". ☐

5.5.87 **DISCONNECT** pressure source from the transmitter calibration port. ☐

5.5.88 **CLOSE** Equalizing Valve at the transmitter three valve manifold. ☐

5.5.89 **REPLACE** plug to calibration port on the transmitter VTP-PDT-2218A three valve manifold. ☐

5.5.90 **OPEN** valves labeled high and low on three valve manifold at transmitter VTP-PDT-2218A (located on top of Filter Train). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

NOTE - Next step starts check on Plenum Pressure DPT interlock.

5.5.91 **CLOSE** valves labeled high and low on the three valve manifold at Plenum Pressure DPT VTP-PI-2213A (located on top of Filter Train). ☐

5.5.92 **REMOVE** plug from calibration port on the transmitter VTP-PI-2213A three valve manifold. ☐

5.5.93 **CONNECT** a pressure source to calibration port on the transmitter VTP-PI-2213A three valve manifold. ☐

5.5.94 **OPEN** Equalizing Valve on the transmitter VTP-PI-2213A three valve manifold. ☐

5.5.95 **SET** pressure source pressure to 3.0 IN W.C.. ☐

5.5.96 **VERIFY** Wilkerson indicator VTP-PDI-2216A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** within a range of 2.85 IN W.C. and 3.15 IN W.C.. ☐

5.5.97 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5.98 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5.99 **INCREASE** pressure source pressure to 7.0 IN W.C.. ☐

5.5.100 **VERIFY** the following:

5.5.100.1 Exhauster Fan has **SHUTDOWN**. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.100.2 Red FAN RUNNING light is **NOT ILLUMINATED.** ☐

5.5.100.3 Green FAN OFF light is **ILLUMINATED.** ☐

5.5.100.4 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED.** ☐

5.5.100.5 Wilkerson indicator VTP-PDI-2216A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PI-2213A, is **READING** within a range of 6.65 IN W.C. and 7.35 IN W.C.. ☐

5.5.100.6 Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "PLENUM PRESSURE HI" and "FAN SHUTDOWN". ☐

5.5.100.7 DPT readout **DISPLAYS** a value approximately equal to 7.0 IN W.C.. ☐

5.5.101 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.102 **VERIFY** Rotating Beacon is **NOT ILLUMINATED.** ☐

5.5.103 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "PLENUM PRESSURE HI" and "FAN SHUTDOWN". ☐

5.5.104 **DECREASE** pressure source pressure to approximately 1.0 IN W.C.. ☐

5.5.105 **PRESS** Fan Start Button PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A).

5.5 INTERLOCK/ALARM CHECK (Continued)

☐

5.5.106 **WAIT** for the Exhauster fan to come up to speed.

☐

5.5.107 **DECREASE** pressure source pressure to 1.0 IN W.C..

☐

5.5.108 **VERIFY** the following:

5.5.108.1 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**.

☐

5.5.108.2 Wilkerson indicator VTP-PDI-2216 A(located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PI-2213A, is **READING** within a range of 0.95 IN W.C. and 1.05 IN W.C..

☐

5.5.108.3 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "PLENUM PRESSURE LO".

☐

5.5.108.4 DPT readout **DISPLAYS** a value approximately equal to 1.0 IN W.C..

☐

5.5.109 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel).

☐

5.5.110 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**.

☐

5.5.111 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "PLENUM PRESSURE LO".

☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.112 **DISCONNECT** pressure source from the transmitter calibration port. ☐

5.5.113 **CLOSE** Equalizing Valve at the transmitter three valve manifold. ☐

5.5.114 **REPLACE** plug to calibration port on the transmitter VTP-PI-2213A three valve manifold. ☐

5.5.115 **OPEN** valves labeled high and low on three valve manifold at transmitter VTP-PI-2213A (located on top of Filter Train). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

NOTE - Next step starts check on Prefilter DPT alarm.

5.5.116 **CLOSE** valves labeled high and low on the three valve manifold at Prefilter DPT VTP-PDT-2215A (located on top of Filter Train). ☐

5.5.117 **REMOVE** plug from calibration port on the transmitter VTP-PDT-2215A three valve manifold. ☐

5.5.118 **CONNECT** a pressure source to calibration port on the transmitter VTP-PDT-2215A three valve manifold. ☐

5.5.119 **OPEN** Equalizing Valve on the transmitter VTP-PDT-2215A three valve manifold. ☐

5.5.120 **SET** pressure source pressure to 0.5 IN W.C.. ☐

5.5.121 **VERIFY** Wilkerson indicator VTP-PDI-2215A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** within a range of 0.48 IN W.C. and 0.53 IN W.C.. ☐

5.5.122 **PRESS** Fan Start Button VTP-PB-2212M (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.5.123 **WAIT** for the Exhauster fan to come up to speed. ☐

5.5.124 **INCREASE** pressure source pressure to 2.0 IN W.C.. ☐

5.5.125 **VERIFY** the following:

5.5.125.1 Rotating Beacon is **ILLUMINATED**. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.125.2 Red FAN RUNNING light is **ILLUMINATED.** ☐

5.5.125.3 Green FAN OFF light is **NOT ILLUMINATED.** ☐

5.5.125.4 Wilkerson indicator VTP-PDI-2215A (located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-PDT-2215A, is **READING** within a range of 1.90 IN W.C. and 2.10 IN W.C.. ☐

5.5.125.5 Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "PREFILTER DP HI". ☐

5.5.125.6 DPT readout **DISPLAYS** a value approximately equal to 2.0 IN W.C.. ☐

5.5.126 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.127 **VERIFY** Rotating Beacon is **NOT ILLUMINATED.** ☐

5.5.128 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "PLENUM PRESSURE LO". ☐

5.5.129 **DISCONNECT** pressure source from the transmitter calibration port. ☐

5.5.130 **CLOSE** Equalizing Valve at the transmitter three valve manifold. ☐

5.5.131 **REPLACE** plug to calibration port on the transmitter VTP-PDT-2215 three valve manifold. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.132 **OPEN** valves labeled high and low on three valve manifold at transmitter VTP-PDT-2215A (located on top of Filter Train). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

NOTE - Next step starts testing of stack flow DPT.

5.5.133 **CLOSE** valves labeled high and low on the three valve manifold at Stack Flow DPT VTP-FT-2221A (located next to Stack). ☐

5.5.134 **REMOVE** plug from calibration port on the transmitter VTP-FT-2221A three valve manifold. ☐

5.5.135 **CONNECT** a pressure source to calibration port on the transmitter VTP-FT-2221A three valve manifold. ☐

5.5.136 **OPEN** Equalizing Valve on the transmitter VTP-FT-2221A three valve manifold. ☐

5.5.137 **SET** pressure source pressure to 0.32 IN W.C. (this corresponds to a flow of 450 CFM). ☐

5.5.138 **VERIFY** Wilkerson indicator VTP-PDI-2221A(located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** within a range of 430 CFM and 470 CFM. ☐

5.5.139 **INCREASE** pressure source pressure to 0.41 IN W.C. (this corresponds to a flow of 510 CFM). ☐

5.5.140 **VERIFY** the following:

5.5.140.1 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.5.140.2 Wilkerson indicator (VTP-PDI-2221A)(located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter FT-2221, is **READING** a flow rate within a range of 485 CFM and 535 CFM. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.140.3 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "STACK FLOW HI".

☐

5.5.141 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "↵" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel).

☐

5.5.142 **VERIFY** Rotation Beacon is **NOT ILLUMINATED**.

☐

5.5.143 Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message.

☐

5.5.144 **DECREASE** pressure source pressure to 0.19 IN W.C. (this corresponds to a flow of 350 CFM).

☐

5.5.145 **VERIFY** the following:

5.5.145.1 Wilkerson indicator VTP-PDI-2221A(located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-FT-2221A, is **READING** a flow rate within a range of 335 CFM and 365 CFM.

☐

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.5.146 **USING** a DMM, **VERIFY NO** continuity between 7 and 8 contacts of the Action Pak A (AP1690) Field Configurable Limit Alarm (located at cabinet VTP-PNL-2206A).

☐

5.5 INTERLOCK/ALARM CHECK (Continued)

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.5.147 **USING** a DMM, **VERIFY NO** continuity between 10 and 11 contacts of the Action Pak B (AP1690) Field Configurable Limit Alarm (located at cabinet VTP-PNL-2206A). ☐

5.5.148 **DECREASE** pressure source pressure to 0.10 IN W.C. (this corresponds to a flow of 250 CFM). ☐

5.5.149 **VERIFY** the following:

5.5.149.1 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.5.149.2 **USING** a DMM, **VERIFY** continuity between 7 and 8 contacts of the Action Pak A (AP1690) Field Configurable Limit Alarm (located at cabinet VTP-PNL-2206A). ☐

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.5.149.3 **USING** a DMM, **VERIFY** continuity between 10 and 11 contacts of the Action Pak B (AP1690) Field Configurable Limit Alarm (located at cabinet VTP-PNL-2206A). ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.149.4 Wilkerson indicator VTP-PDI-2221A(located on door of Exhauster Control Cabinet VTP-PNL-2205A), corresponding to transmitter VTP-FT-2221A, is **READING** a flow rate within a range of 235 CFM and 260 CFM. ☐

5.5.149.5 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "STACK FLOW LO". ☐

5.5.150 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.151 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.152 **VERIFY** Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message. ☐

5.5.153 **DISCONNECT** pressure source from the transmitter calibration port. ☐

5.5.154 **CLOSE** Equalizing Valve at the transmitter three valve manifold. ☐

5.5.155 **REPLACE** plug to calibration port on the transmitter three valve manifold. ☐

5.5.156 **OPEN** valves labeled high and low on three valve manifold at the transmitter. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

NOTE - Next step starts testing of Seal Pot liquid level interlock.

5.5.157 **ENSURE** Seal Pot Drain Valve VTP-V-2259A is in the **CLOSED** position. ☐

5.5.158 **ENSURE** Seal Pot Overflow Drain Line Outlet Valve VTP-V-2260A is in the **CLOSED** position. ☐

5.5.159 **REMOVE** Seal Pot fill cap at VTP-V-2258A. ☐

5.5.160 **OPEN** Seal Pot fill inlet valve VTP-V-2258A. ☐

5.5.161 **ADD** water to Seal Pot reservoir **UNTIL** the seal pot reservoir is approximately 50% full. ☐

5.5.162 **VERIFY** that the Seal Pot Level Wilkerson Indicator VTP-LI-2210A is **INDICATING** a liquid level corresponding to 50% FULL. ☐

5.5.163 **ADD** water to the Seal Pot **UNTIL** the rotating beacon is **ILLUMINATED**. ☐

5.5.164 **VERIFY** that the Seal Pot Level Wilkerson Indicator VTP-LI-2210A is **INDICATING** a liquid level corresponding to 80% FULL. ☐

5.5.165 **VERIFY** Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "SEAL POT HI". ☐

5.5.166 **OPEN** the Seal Pot drain valve VTP-V-2259A. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.167 **SLOWLY DRAIN** the Seal Pot until **VERIFYING** the following: ☐

5.5.167.1 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message at an approximate liquid level that is LESS THAN 80% FULL, as indicated by the SEAL POT LEVEL Wilkerson indicator VTP-LI-2210A. ☐

5.5.168 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.169 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5.170 **VERIFY** Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message. ☐

5.5.171 **CONTINUES TO DRAIN** the Seal Pot **UNTIL** rotating beacon illuminates again, **QUICKLY CLOSE** the seal pot drain valve. ☐

5.5.172 **VERIFY** the Seal Pot Level Wilkerson Indicator VTP-LI-2210A **INDICATES** an approximate liquid level of 30% FULL. ☐

5.5.173 **VERIFY** that the Message View Display VTP-UI-2207A and VTP-UI-2208A **DISPLAY** "SEAL POT LO". ☐

5.5.174 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.5.175 **VERIFY** Rotating Beacon is **NOT ILLUMINATED**. ☐

5.5 INTERLOCK/ALARM CHECK (Continued)

5.5.176 **VERIFY** Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message. ☐

5.5.176.1 Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **STILL DISPLAYS** "SEAL POT LO". ☐

5.5.177 **ADD** water to the seal pot reservoir **UNTIL** the reservoir is 50% FULL. ☐

5.5.178 **VERIFY** Message View Display VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) message has cleared. ☐

5.5.179 **CLOSE** Seal Pot fill inlet valve VTP-V-2258A. ☐

5.5.180 **REINSTALL** seal pot fill cap. ☐

5.6 GLYCOL HEATER CHECK

5.6.1 **OPEN** fill cap from the Heater Glycol Reservoir. ☐

5.6.2 **ENSURE** circuit breaker #6 (PLC control circuit, Module 8) is **OFF** (located in the MPZ cabinet VTP-PNL-2204A). ☐

5.6.3 **REMOVE** wire MDL8IN1 from fuse block 1 terminal FU20 (located in Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.6.4 **CONNECT** jumper from TB3CC terminal 1 to fuse block 1 terminal FU20 (located in Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.6.5 **POSITION** circuit breaker #6 (PLC control circuit, Module 8) to **ON** (located in the MPZ cabinet VTP-PNL-2204A). ☐

5.6.6 **PREPARE** glycol/water mix with glycol/water ratio equal to 1. ☐

5.6.7 **FILL** with glycol/water mix to 80 % level of the glycol reservoir. ☐

5.6.8 **WHILE FILLING** glycol/water mix, **POSITION** Glycol Circulation Pump Control Switch to **ON** (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.6.9 **VERIFY** the following:

5.6.9.1 Glycol Level Wilkerson Indicator VTP-LI-2223A displays a readout corresponding to an 80% level. ☐

5.6.9.2 Glycol Circulation Pump is **OPERATING** by **LISTENING** to and/or **FEELING** the pump. ☐

5.6 GLYCOL HEATER CHECK (Continued)

5.6.9.3 Glycol System has no leaks. ☐

5.6.10 **POSITION** Glycol Circulation Pump Control Switch to **OFF** (located on door of Control Cabinet VTP-PNL-2205A). ☐

5.6.11 **POSITION** circuit breaker #6 (PLC control circuit, Module 8) to **OFF** (located in the MPZ cabinet VTP-PNL-2204A). ☐

5.6.12 **REMOVE** jumper from TB3CC terminal 1 and fuse block 1 terminal FU20 (located in Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.6.13 **RECONNECT** wire MDL8IN1 to fuse block 1 terminal FU20 (located in Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.6.14 **POSITION** circuit breaker #6 (PLC control circuit, Module 8) to **ON** (located in the MPZ cabinet VTP-PNL-2204A). ☐

5.6.15 **REMOVE** the thermostat cover on top of Glycol Heater VTP-HTR-2213A. ☐

5.6.16 **ENSURE** the Heater Thermostat is set to 170°F. ☐

5.6.17 **REPLACE** the thermostat cover of Glycol Heater VTP-HTR-2213A. ☐

5.6.18 **POSITION** the Glycol Heater Disconnect Switch VTP-DS-2213A to **ON**. ☐

5.6 GLYCOL HEATER CHECK (Continued)

WARNING

Energized circuits and leads are contained inside the cabinet. Observe appropriate electrical precautions. Comply with WHC-CM-1-10, WKS-15, ELECTRICAL WORK SAFETY.

5.6.19 **VERIFY** the Glycol Heater has **STARTED** by **USING** the DMM at the Glycol Heater Contactor VTP-CON-2213A (located at Control Cabinet VTP-PNL-2205A) AND **PERFORMING** the following:

5.6.19.1 **VERIFY** there is a voltage between Terminal T1 and Terminal T2. ☐

5.6.19.2 **VERIFY** there is a voltage between Terminal T1 and Terminal T3. ☐

5.6.19.3 **VERIFY** there is a voltage between Terminal T2 and Terminal T3. ☐

5.6.20 **POSITION** the Glycol Heater Disconnect Switch VTP-DS-2213A to **OFF**. ☐

5.6.21 **POSITION** Circuit Breaker #3 (located at MPZ Cabinet VTP-DP-2204A) to **OFF**. ☐

5.6.22 **CONNECT** a jumper to the Glycol Liquid Level Transmitter VTP-LT-2223A. ☐

5.6.23 **REMOVE** Glycol Liquid Level Transmitter VTP-LT-2223A from the glycol reservoir. ☐

5.6.24 **INSERT** the Glycol Liquid Level Transmitter VTP-LT-2223A into a 18 inch deep container filled with water. ☐

5.6 GLYCOL HEATER CHECK (Continued)

5.6.25 **POSITION** Circuit Breaker #3 (located at MPZ Cabinet) to **ON**. ☐

5.6.26 **POSITION** Glycol Pump Control Switch to **ON** (located on door of Exhauster Control Cabinet VTP-PNL-2205A). ☐

5.6.27 **VERIFY** the Glycol Heater has **STARTED** by **OBSERVING** that the Glycol Heater Contactor VTP-CON-2213A (located at Control Cabinet VTP-PNL-2205) has **CLOSED**. ☐

5.6.28 **SLOWLY REMOVE** Glycol Liquid Level Transmitter VTP-LT-2223A from water container **UNTIL** Rotation Beacon is **ILLUMINATED**. ☐

5.6.29 **VERIFY** the following:

5.6.29.1 Glycol Heater has **SHUTDOWN** by **OBSERVING** that the Glycol Heater Contactor VTP-CON-2213A contactor (located at Control Cabinet VTP-PNL-2205A)is **OPEN**. ☐

5.6.29.2 A 70% liquid level indication on the Wilkerson liquid level indicator VTP-LI-2223A. ☐

5.6.29.3 Glycol Circulation Pump VTP-HS-2210A has **SHUTDOWN** by **LISTENING** to and/or **FEELING** the pump. ☐

5.6.29.4 Message Display VTP-UI-2207A and VTP-UI-2208A **DISPLAY** "GLYCOL LO". ☐

5.6.30 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.6.31 **VERIFY** Rotation Beacon is **NOT ILLUMINATED**. ☐

5.6 GLYCOL HEATER CHECK (Continued)

5.6.32 **VERIFY** Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message. ☐

5.6.33 **POSITION** Circuit Breaker #3 (located at MPZ Cabinet) to **OFF**. ☐

5.6.34 **REMOVE** the jumper connected to the Glycol Liquid Level Transmitter VTP-LT-2223A. ☐

5.6.35 **RETURN** Glycol Liquid Level Transmitter VTP-LT-2223A to the glycol reservoir. ☐

NOTE - Next step starts check on the thermocouples.

5.6.36 **DISCONNECT** field wiring from terminals TB2CC-7 and TB2CC-8 that are associated with the thermocouple TC-2. ☐

5.6.37 **CONNECT** Thermocouple Simulator to the terminals TB2CC-7 and TB2CC-8. ☐

5.6.38 **SET** Thermocouple Simulator to 120°F. ☐

5.6.39 **POSITION** Circuit Breaker #3 (located at MPZ Cabinet) to **ON**. ☐

5.6.40 **VERIFY** Glycol Heater has **STARTED** by **OBSERVING** that the Glycol Heater Contactor VTP-CON-2213A contactor (located at Control Cabinet VTP-PNL-2205A)is **CLOSED**. ☐

5.6.41 **VERIFY** Wilkerson indicator TI-2222 (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** 120°F. ☐

5.6.42 **SET** Thermocouple Simulator to 200°F. ☐

5.6 GLYCOL HEATER CHECK (Continued)

5.6.43 **VERIFY** the following:

5.6.43.1 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.6.43.2 Wilkerson indicator VTP-TI-2222A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) corresponding to VTP-TE-2221, is **READING** 200°F. ☐

5.6.43.3 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAY** "HEATER AIR TEMPERATURE HI". ☐

5.6.43.4 Glycol Heater has **SHUTDOWN** by **OBSERVING** that the Glycol Heater Contactor VTP-CON-2213A contactor (located at Control Cabinet VTP-PNL-2205A)is **OPEN**. ☐

5.6.44 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.6.45 **VERIFY** Rotation Beacon is **NOT ILLUMINATED**. ☐

5.6.46 **VERIFY** Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message. ☐

5.6.47 **SET** Thermocouple Simulator to 40°F. ☐

5.6.48 **VERIFY** the following:

5.6.48.1 Rotating Beacon (located on stack supporting framing) is **ILLUMINATED**. ☐

5.6 GLYCOL HEATER CHECK (Continued)

5.6.48.2 Wilkerson indicator VTP-TI-2222A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) corresponding to VTP-TE-2222A, is **READING** 40°F. ☐

5.6.48.3 Message View Display VTP-UI-2207A and VTP-UI-2208A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "AIR TEMPERATURE LO". ☐

5.6.48.4 Glycol Heater has **STARTED** by **OBSERVING** that the Glycol Heater Contactor VTP-CON-2213A contactor (located at Control Cabinet VTP-PNL-2205A)is **CLOSED**. ☐

5.6.48.5 Glycol Circulation Pump is **OPERATING** by **LISTENING** to and/or **FEELING** the pump. ☐

5.6.49 **ACKNOWLEDGE** the alarm by **PRESSING** the "1" button, then **PRESSING** the "←" button three times on the Message View Display (located at Alarm Cabinet VTP-PNL-2207A Swing Out Panel). ☐

5.6.50 **VERIFY** Rotation Beacon is **NOT ILLUMINATED**. ☐

5.6.51 **VERIFY** Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **CLEARS** alarm message. ☐

5.6.52 **POSITION** Circuit Breaker #3 (located at MPZ Cabinet) to **OFF**. ☐

5.6.53 **DISCONNECT** Thermocouple Simulator from terminals TBCC-7 and TB2CC-8 associating with VTP-TE-2222A. ☐

5.6.54 **RECONNECT** field wiring to terminals TBCC-7 and TB2CC-8. ☐

5.6.55 **DISCONNECT** field wiring from terminals TBCC-1 and TB2CC-2 associating with thermocouple VTP-TE-2221A. ☐

5.6 GLYCOL HEATER CHECK (Continued)

5.6.56 **CONNECT** the Thermocouple Simulator to terminals TBCC-1 and TB2CC-2. ☐

5.6.57 **SET** Thermocouple Simulator to 120°F. ☐

5.6.58 **POSITION** Circuit Breaker #3 (located at MPZ Cabinet) to **ON**. ☐

5.6.59 **VERIFY** Wilkerson indicator VTP-TI-2221A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) corresponding to VTP-TE-2221A, is **READING** 120°F. ☐

5.6.60 **SET** Thermocouple Simulator to 40°F. ☐

5.6.61 **VERIFY** the following:

5.6.61.1 Wilkerson indicator VTP-TI-2221A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) corresponding to VTP-TE-2221, is **READING** 40°F. ☐

5.6.61.2 Message View Display VTP-UI-2207A (located at Alarm Cabinet Swing Out Panel) **DISPLAYS** "INLET AIR LO". ☐

NOTE: Next step starts testing of Heating Core DPT interlock.

5.6.62 **CLOSE** valves labeled high and low on the three valve manifold at Transmitter VTP-PDT-2214A (located at Heating Core). ☐

5.6.63 **REMOVE** plug from calibration port on the transmitter VTP-PDT-2214A three valve manifold. ☐

5.6.64 **CONNECT** a pressure source to calibration port on the transmitter VTP-PDT-2214A three valve manifold. ☐

5.6 GLYCOL HEATER CHECK (Continued)

5.6.65 **OPEN** Equalizing Valve on the transmitter VTP-PDT-2214A three valve manifold. ☐

5.6.66 **SET** pressure source pressure to approximately 0.5 IN W.C.. ☐

5.6.67 **VERIFY** the following:

5.6.67.1 Wilkerson indicator VTP-PDI-2214A (located on door of Exhauster Control Cabinet VTP-PNL-2205A) is **READING** within a range of 0.48IN W.C. and 0.52 IN W.C.. ☐

5.6.67.2 DPT readout **DISPLAYS** a value approximately equal to 0.5 IN W.C.. ☐

5.6.68 **DISCONNECT** pressure source from the transmitter calibration port. ☐

5.6.69 **CLOSE** Equalizing Valve at the transmitter three valve manifold. ☐

5.6.70 **REPLACE** plug to calibration port on the transmitter VTP-PDT-2214A three valve manifold. ☐

5.6.71 **OPEN** valves labeled high and low on three valve manifold at transmitter VTP-PDT-2214A. ☐

5.6.72 **POSITION** Glycol Heater Disconnect Switch VTP-DS-2213A to **OFF**. ☐

5.6.73 Test Director **SHALL VERIFY** that section 5.6 is **COMPLETE** by **SIGNING** below.

_____ _____
Test Director Signature Date

DATA SHEET 1 - LEAKAGE RATE CALCULATION (This page may be reproduced as necessary)

DATE: **TEST #:**

	INITIAL	FINAL
Time	ti =	tf =
Pressure (psig)	Pi =_____ IN W.C./ 27.7 =	Pf =_____ IN W.C./ 27.7 =
Barometric pr (psi)	Bpi=_____ (IN Hg)(0.491) =	BPf=_____ (IN Hg)(0.491) =
Duct pr (psfa)	DPi=(Pi + Bpi)(144) =	DPi=(Pi + Bpi)(144) =
Temperature (°R)	Ti =_____°F + 460 =	Tf =_____°F + 460 =

Test Volume: V = _____ cubic feet

Gas constant: R = 53.35 ft-lb/(lb*degR)

Test Duration: Δt = (tf - ti) = _____ minutes

Q = (DPi/Ti - DPf/Tf)V /(R x Δt x 0.075) = _____ SCFM

Q is the Average total leak rate per ASME N510-1989, Section 6.5.3.9, in standard ft^3/min (SCFM).

L_s = Allowable Leak Rate = _____ SCFM

_____ _____

Test Director Signature Date

_____ _____

QC Signature Date

DATA SHEET 2 - LEAKAGE RATE CALCULATION (This page may be reproduced as necessary)

DATE: **TEST #:**

	INITIAL	FINAL
Time	ti =	tf =
Pressure (psig)	Pi =_____ IN W.C./ 27.7 =	Pf =_____ IN W.C./ 27.7 =
Barometric pr (psi)	Bpi=_____(IN Hg)(0.491) =	BPf=_____ (IN Hg)(0.491) =
Duct pr (psfa)	DPi=(Pi + Bpi)(144) =	DPi=(Pi + Bpi)(144) =
Temperature (°R)	Ti =_____°F + 460 =	Tf =_____°F + 460 =

Test Volume: V = _____ cubic feet

Gas constant: R = 53.35 ft-lb/(lb*degR)

Test Duration: Δt = (tf - ti) = _____ minutes

Q = (DPi/Ti - DPf/Tf)V /(R x Δt x 0.075) = _____ SCFM

Q is the Average total leak rate per ASME N510-1989, Section 6.5.3.9, in standard ft^3/min (SCFM).

L_s = Allowable Leak Rate = _____ SCFM

_____ _____

Test Director Signature Date

_____ _____

QC Signature Date

ATP EXCEPTION LOG

This page may be reproduced as necessary PAGE _____ of_____

ATP EXCEPTION LOG		
Number	**Date**	**Description**

ATP EXCEPTION RECORD

This page may be reproduced as necessary.

ATP step number:	ATP Exception Log Number:
Description of Exception:	
Resolution of Exception:	
Date of Resolution:	
Test Director signature:	
Cognizant Engineer signature:	
Quality Assurance signature:	