DEC 07 1994
35 Station 21

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 600919

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
300 Area Liquid Effluent Facility	Liquid Effluent Process Engineering	N/A
5. Proj./Prog./Dept./Div.:	**6. Cog. Engr.:**	**7. Purchase Order No.:**
Liquid Effluents Services	K.J. Hagerty	N/A
8. Originator Remarks:		**9. Equip./Component No.:**
For Release		N/A
		10. System/Bldg./Facility: 340-NT-EX/340/Waste Handling Facility
11. Receiver Remarks:		**12. Major Assm. Dwg. No.:**
None		N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 12/10/94

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-W337-ATP-001	All	0	Acceptance Test Procedure for the 340-NT-EX stack upgrades	EQ	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	1	Cog.Eng. K.J. Hagerty		12/6/94	L6-04	(OSTI distr. 2 copies w/att			L8-07)		
1	1	Cog. Mgr. D.L. Halgren		12/6/94	L6-04	Central Files orig. +2					
1	1	QA M.C. Arntzen		12/6/94	L4-93						
1	1	Env. R.W. Szelmeczka		12/6/94	L4-96						
1	1	Proj. K.I. Lane		12/6/94	L4-93						

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
K.J. Hagerty 12/6/94	D.L. Halgren 12/6/94	D.L. Halgren 12/6/94	[] Approved [] Approved w/comments [] Disapproved w/comments
Signature of EDT Originator / Date	Authorized Representative for Receiving Organization / Date	Cognizant Manager / Date	

BD-7400-172-2 (04/94) GEF097

BD-7600-062 (08/91) WEF074

Part 4

BD-7400-172-1 (07/91)

RELEASE AUTHORIZATION

Document Number:	WHC-SD-W337-ATP-001, Revision 0
Document Title:	Acceptance Test Procedure for the 340-NT-EX Stack Upgrades. Project W-337
Release Date:	December 7, 1994

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

M. Boston — 12/7/94

M.N. Boston

SUPPORTING DOCUMENT

1. Total Pages 20

2. Title

Acceptance Test Procedure for the 340-NT-EX stack upgrades. Project W-337.

3. Number

WHC-SD-W337-ATP-001

4. Rev No.

0

5. Key Words

340, 340-NT-EX, NESHAP, FFCA, isokinetic sampling, ATP

6. Author

Name: K. J. Hagerty

Signature 12/6/94

Organization/Charge Code 86730 /A2131

7. Abstract

This document provides an Acceptance Test Procedure for the project W-337 upgrades to the 340-NT-EX stack, and it's associated sampling and monitoring systems.

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9. Impact Level EQ

10. RELEASE STAMP

OFFICIAL RELEASE
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DATE DEC 07 1994
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Information Release Administration

ACCEPTANCE TEST PROCEDURE
FOR THE
340-NT-EX STACK SAMPLING SYSTEM UPGRADE
PROJECT W-337
WHC-SD-W337-ATP-001
REV 0

DISCLAIMER

Author
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December 6, 1994

TABLE OF CONTENTS

1.0 PURPOSE

The purpose of the 340-NT-EX sampling system upgrade Acceptance Test Procedure (ATP) is to test all new and modified sampling systems to ensure adequate performance.

2.0 PRECAUTIONS

2.1 Safety rules and information are contained in the Job Safety Analysis (JSA).

2.2 All personnel performing ATP related work shall read and sign the JSA.

2.3 All personnel performing ATP related work shall read and sign the applicable RWP.

3.0 ADMINISTRATION AND AUTHORITY

3.1 ACCEPTANCE CRITERIA

Each step in the ATP has an associated acceptance criteria. For most steps the inferred criteria is the rule. For some steps the specific criteria is listed.

Inferred Criteria ... Most steps in the ATP involve operationg equipment, verifying alarms, and verifying correct operation of equipment. Failure of any of these items is an exception.

3.2 TEST LOG

A narrative log (appendix D) of testing activities is to be maintained by Liquid Effluents Process Engineering. Any additional testing activities that are performed during the ATP, but are not specifically required as part of the ATP, will be logged in the TEST LOG.

3.3 EXCEPTIONS

The ATP may not be closed with open exceptions. All exceptions shall be recorded in the exception log unless it is immediately correctable and retested. Prior to the close of the ATP each exception is dispositioned. When all exceptions are dispositioned then the ATP may be closed. The ATP does not have to be changed due to the existence of an exception, however a change may be warranted if the exception causes a significant impact to the performance of the ATP.

3.4 EXCEPTION DISPOSITIONING

Exceptions usually are dispositioned by one of the following four actions. This does not prevent other means of dispositioning if agreed upon by WHC.

a. The contractor corrects the exception.

b. WHC accepts the exception as is.

c. The exception is transferred to the project managers open item list.

d. The exception is handled using a combination of a. through c. above.

3.5 EXCEPTION CLOSING

Exceptions are closed when they have been dispositioned and signed by Liquid Effluent Process Engineering. It should be noted that an exception may be closed even though the exception has not been corrected. In this case the exception is transferred to the Project Managers open item list.

4.0 PREREQUISITES

All of the following prerequisites must be completed before any testing is performed in the ATP.

4.1 Factory calibrations of instruments are complete.

_____/_____
Liquid Effluents Process Engineering/Date

Include completed calibration data sheets as an attachment, in Attachment A.

4.2 Alpha and beta/gamma CAMS are calibrated by PNL.

_____/_____
Liquid Effluents Process Engineering/Date

Include completed calibration data sheets as an attachment, in Attachment A.

4.3 Installation of the sampling cabinet and electrical systems is complete, and vacuum spool piece is installed on existing riser (but not connected to sample cabinet).

_____/_____
ICF/Kaiser Engineers Hanford/Date

5.0 GENERAL INSTRUCTIONS

This section provides general requirements that apply during the entire ATP performance.

5.1 An exception will be logged for any step not meeting the requirements of the ATP unless the exception can be corrected and retested during the performance of the test. An exception number must be obtained, and a short description entered in the exception log in appendix B.

6.0 LEAK TESTING

6.1 Remove K1-PI-35, and seal opening with plug.

6.2 Connect air source system to vacuum source fitting at bottom of cabinet. Air source system shall consist of regulator, 0-20psig gauge, and shutoff valve.

6.3 Install plug into particulate sample inlet fitting at top of cabinet.

6.4 Position valves as follows:

VALVE	POSITION
K1-FCV-39	CLOSED
K1-FCV-40	CLOSED
K1-FCV-41	OPEN
K1-MV-23	CLOSED
K1-MV-24	CLOSED
K1-MV-25	CLOSED
K1-MV-25	CLOSED

6.5 Manually position K1-PCV-26 to the fully closed position (no makeup air).

6.6 Ensure air supply regulator is off, then open air supply shut off valve.

6.7 Adjust air supply regulator to 5 psig, as read on air supply gauge.

6.8 Listen for any audible leaks, and repair as necessary.

6.9 Note time and pressure, then close air supply shut off valve. Hold pressure for 10 minutes. Acceptance of the test is less than 0.5 psig pressure drop over the 10 minute period.

Start: _____ _____
Time Pressure

Finish: _____ _____
Time Pressure

6.10 If pressure test does not pass, perform the following actions:

6.10.1 Close K1-FCV-39, then open air supply valve. Repeat step 6.9.

6.10.2 If pressure test does not pass, open K1-FCV-39, then close K1-FCV-40, and repeat step 6.9.

6.10.3 Continue isolating sections of the system and performing step 6.9 until the leak(s) is found.

6.10.4 Repair leaks as necessary. Repeat step 6.9 until entire system passes pressure test.

6.10.5 Record final test results below, if not already done in step 6.9.

Start: _____ _____
Time Pressure

Finish: _____ _____
Time Pressure

6.11 Remove test equipment and plugs, and replce K1-PI-35.

6.12 Position valves as follows:

VALVE	POSITION
K1-FCV-39	CLOSED
K1-FCV-40	CLOSED
K1-FCV-41	OPEN
K1-MV-21	OPEN
K1-MV-22	OPEN
K1-MV-23	OPEN
K1-MV-24	OPEN
K1-MV-25	OPEN

6.13 Return K1-PCV-26 to automatic control.

7.0 WIRE CONTINUITY CHECK

7.1 Lock and tag OPEN the two supply breakers that supply power to the sample cabinet (Panel LP 2, breakers 27 and 29), if not already done.

7.2 Connect an ohm meter across the ends of the wire under test, and record resistance. If any wire has a resistance greater than 1 ohm, investigate for possible breakage. Record results of the tests in Appendix C.

7.3 Repeat step 8.2 for all wires in the system.

7.4 Remove Lock and tag, and restore power.

8.0 ELECTRICAL DISTRIBUTION CHECK

8.1 Verify incoming power lines are 120 $\pm$ 10 VAC.

8.2 Ensure switch SW-1 is on, and verify "POWER ON" light is on.

8.3 Verify displays on K1-FIT-33, K1-FIT-34, and K1-PIC-38 are on.

8.4 Turn on switch SW-2.

8.5 Adjust air conditioner thermostat below ambient temperature, and verify air conditioner begins to cool.

8.6 Reset AC thermostat to 80°F.

8.7 Adjust heating thermostat above ambient temperature, and verify heater begins to heat.

8.8 Reset heater thermostat to 70°F.

8.9 Turn off switch SW-2.

9.0 PARTICULATE SAMPLE FLOW CHECKS

9.1 Connect vacuum source to vacuum supply tube on cabinet.

9.2 Allow K1-PIC-38 to stabilize manifold vacuum.

9.3 Adjust K1-FCV-41 until record sample flow as read on K1-FIT-34 is 1.00 SCFM.

9.4 Using the K1-FIT-34 flow reading, calculate ideal output of K1-FIT-34, and record in step 9.7.

$$ideal\ output = \frac{(Displayed\ SCFM)(16.00\ mA)}{4.00\ mA} + 4.00mA$$

9.5 Monitor and record output of K1-FIT-34 at terminals #43 and #44 on TB-2. Calculate the percent deviation from the ideal output (calculated above), and record in step 9.7. This deviation should be $\leq$ 2%.

$$\%\ Deviation = \frac{(Actual\ output - 4\ mA) - (ideal\ output - 4\ mA)}{ideal\ output\ (mA) - 4\ mA}$$

9.6 Record K1-PIC-38 vacuum, and verify vacuum is 15 $\pm$ 0.75"Hg.

9.7 Repeat steps 9.3 through 9.6 for Record Sample flows of 2.00, 3.00, and 4.00 SCFM.

FLOW (K1-FIT-34)	VACUUM	IDEAL OUTPUT	ACTUAL OUTPUT	% DEVIATION

9.8 Adjust K1-FCV-41 for a sample flow of 1.00 SCFM.

9.9 Place Digital Volt meter across alarm output terminals.

9.10 Slowly adjust K1-FCV-41 to 0.5 SCFM, and verify DVM indicates continuity across termimals. Record flow at which continuity is received.

_____
Sample low flow alarm (SCFM)

9.11 Slowly open K1-FCV-41, and ensure continuity is lost across alarm terminals.

9.12 Reset low flow alarm to 1.75 SCFM.
Note: Factory alarm setpoint is 0.5 SCFM, however, 1.75 is the desired low flow setpoint.

9.13 Set K1-FCV-41 flow to 3.16 SCFM.

10.0 VACUUM CONTROLLER CHECK

10.1 Record vacuum as read on K1-PIC-38.

_____
K1-PIC-38 vacuum ("Hg)

10.2 Open K1-FCV-39 until the beta CAM flow rate reads 1.00 SCFM. Verify K1-PIC-38 vacuum does not deviate more than 5% from the setpoint. Record K1-PIC-38 vacuum

_____
K1-PIC-38 vacuum ("Hg)

10.3 Open K1-FCV-40 until the alpha CAM flow rate reads 1.00 SCFM. Verify K1-PIC-38 vacuum does not deviate more than 5% from the setpoint. Record K1-PIC-38 vacuum

_____
K1-PIC-38 vacuum ("Hg)

11.0 ALARM HORN/BEACON TESTING

11.1 Open beta/gamma remote detector head, and insert radioactive source to cause a high radiation alarm. Verify the beacon flashes and bell annunciates. Remove source, and verify alarm clears.

11.2 Close K1-FCV-39 to force a FAIL signal on the beta/gama CAM. Verify the beacon flashes and bell annunciates. Open K1-FCV-39, and ensure alarm clears.

11.3 Open alpha remote detector head, and insert radioactive source to cause a high radiation alarm. Verify the beacon flashes and bell annunciates. Remove source, and verify alarm clears.

11.4 Close K1-FCV-40 to force a FAIL signal on the alpha CAM. Verify the beacon flashes and bell annunciates. Open K1-FCV-40, and ensure alarm clears.

APPENDIX A
INSTRUMENT CALIBRATION RECORDS

APPENDIX B
ATP EXCEPTIONS

EXCEPTION LOG	
Instructions: Enter the next sequential serial number i.e 001 and a short description of the exception. Fill out the exception form using the serial number obtained from this log.	
Serial Number	**Description**

APPENDIX B
ATP EXCEPTIONS

ATP EXCEPTION FORM					
Instructions: Fill in author, paragraph, date and description. When exception is dispositioned then complete the DISPOSITION section.					
Author		**ATP Paragraph**		**Date**	
DESCRIPTION					
DISPOSITION					
Corrected ?		Signature		Date	
DISPOSITION DESCRIPTION					

APPENDIX C
WIRING CONTINUITY CHECK

Wire Number	Gauge	From	To	Resistance

APPENDIX C
WIRING CONTINUITY CHECK

Wire Number	Gauge	From	To	Resistance

APPENDIX D
TEST LOG

ATP TEST LOG	DATE:
Instructions: Fill in the test log describing all significant events and plant status changes.	

Time	Comments

Appendix E
System Diagram