DEC 15 1994

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT

600917

2. To: (Receiving Organization) 300 Area Liquid Effluent Facility		3. From: (Originating Organization) Liquid Effluent Process Engineering		4. Related EDT No.: N/A							
5. Proj./Prog./Dept./Div.: Liquid Effluent Services		6. Cog. Engr.: KJ Hagerty		7. Purchase Order No.: N/A							
8. Originator Remarks: For Release				9. Equip./Component No.: N/A							
				10. System/Bldg./Facility: 340-NT-EX/340/Waste Handling Facility							
11. Receiver Remarks: None				12. Major Assm. Dwg. No.: N/A							
				13. Permit/Permit Application No.: N/A							
				14. Required Response Date: 12/20/94							
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-OTP-001 REV. 0	A11	0	Operability 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 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)			1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged						
17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) 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. KJ Hagerty		12/13/94	L8-04	(OSTI distr. 2 copies w/att L8-07)					
1	1	Cog. Mgr. DL Halgren		12/13/94	L8-04						
1	1	QA MC Arntzen		12-15-94		CENTRAL FILES (orig. + 2)					
1	1	Env. RW Szelmezcza		12-15-94							
1	1	Proj. KJ Lane		12-13-94	L4-03						
18.		19.		20.		21. DOE APPROVAL (if required) Ctrl. No.					
KJ Hagerty Signature of EDT Originator		DL Halgren Authorized Representative for Receiving Organization		DL Halgren Cognizant Manager		☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments					

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

A-6400-073 (08/94) WEF124

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

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

RELEASE AUTHORIZATION

Document Number: WHC-SD-W337-OTP-001, Revision 0

Document Title: Operability Test Procedure for the 340-NT-EX Stack Upgrades - Project W337

Release Date: December 15, 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

12/15/94

M.N. Boston

TRADEMARK DISCLAIMER. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy. Available in paper copy and microfiche. Printed in the United States of America. Available to the U.S. Department of Energy and its contractors from:

U.S. Department of Energy
Office of Scientific and Technical Information (OSTI)
P.O. Box 62
Oak Ridge, TN 37831
Telephone: (615) 576-8401

Available to the public from: U.S. Department of Commerce
National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161
Telephone: (703) 487-4650

SUPPORTING DOCUMENT		1. Total Pages 15
2. Title Operability Test Procedure for the 340-NT-EX stack upgrades - Project W337	3. Number WHC-SD-W337-OTP-001	4. Rev No. 0
5. Key Words 340 Vault stack, OTP, W337, Isokinetic	6. Author Name: Kevin J. Hagerty Signature Organization/Charge Code 86730 / A2216	
7. Abstract <p>This document provides a means of testing the 340-NT-EX stack upgrades, and the interface with existing instrumentation and alarm hardware.</p>		
		8. RELEASE STAMP <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> OFFICIAL RELEASE BY WHC DATE DEC 15 1994 35 Station 21 </div>

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

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

Author
Kevin J. Hagerty
December 13, 1994

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

DT

TABLE OF CONTENTS

	<u>PAGE</u>
1.0 PURPOSE	1
2.0 PRECAUTIONS	1
3.0 ADMINISTRATION AND AUTHORITY	2
4.0 PREREQUISITES	3
5.0 GENERAL INSTRUCTIONS	4
6.0 ALARM HORN/BEACON TESTING	4
7.0 PARTICULATE SAMPLER LOW FLOW ALARM CHECK	5
8.0 STACK FLOW TESTING	6
9.0 COMPLETION OF TESTING	7
APPENDIX A OTP EXCEPTIONS	A-1
APPENDIX B TEST LOG	B-1
APPENDIX C SYSTEM DIAGRAM	C-1

1.0 PURPOSE

The purpose of the 340-NT-EX sampling system upgrade Operability Test Procedure (OTP) is to test and ensure the sampler system upgrades correctly interface with the control room alarm and recording functions.

2.0 PRECAUTIONS

- 2.1 Safety rules and information are contained in the Job Safety Analysis (JSA).
- 2.2 All personnel performing OTP related work shall read and sign the JSA.
- 2.3 All personnel performing OTP related work shall read and sign the applicable RWP.

3.0 ADMINISTRATION AND AUTHORITY

3.1 ACCEPTANCE CRITERIA

Each step in the OTP 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 OTP involve operating 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 OTP, but are not specifically required as part of the OTP, will be logged in the TEST LOG.

3.3 EXCEPTIONS

The OTP 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 OTP each exception is dispositioned. When all exceptions are dispositioned then the OTP may be closed. The OTP 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 OTP.

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 OTP.

- 4.1 ATP is complete.

Liquid Effluents Process Engineering/Date

- 4.2 Verify stack sampling station is correctly installed.

Liquid Effluents Process Engineering/Date

- 4.3 Verify new spool section is properly mounted in stack.

Liquid Effluents Process Engineering/Date

- 4.4 Verify all signal wiring from the cabinet to the control room is correct.

_____/_____
Liquid Effluents Process Engineering/Date

- 4.5 Verify all sample and pressure signal lines from the stack are installed correctly.

_____/_____
Liquid Effluents Process Engineering/Date

- 4.6 Verify control room chart recorder is installed and operational.

_____/_____
Liquid Effluents Process Engineering/Date

5.0 GENERAL INSTRUCTIONS

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

- 5.1 An exception will be logged for any step not meeting the requirements of the OTP 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 ALARM HORN/BEACON TESTING

Note: Inform the Power house that alarm testing at the K1 stack is taking place, and to ignore alarms received while the testing is ongoing.

- 6.1 Open beta/gamma remote detector head, and insert radioactive source to cause a high radiation alarm. Verify the beacon flashes and bell annunciates, and that the control room alarm annunciates. Verify control room recorder reads within $\pm 20\%$ of the source. Remove source, and verify alarm clears.
- 6.2 Close K1-FCV-39 to force a FAIL signal on the beta/gama CAM. Verify the beacon flashes and bell annunciates, and that the control room alarm annunciates. Open K1-FCV-39, and ensure alarm clears.
- 6.3 Open alpha remote detector head, and insert radioactive source to cause a high radiation alarm. Verify the beacon flashes and bell annunciates, and that the control room alarm annunciates. Remove source, and verify alarm clears.
- 6.4 Close K1-FCV-40 to force a FAIL signal on the alpha CAM. Verify the beacon flashes and bell annunciates, and that the control room alarm annunciates. Open K1-FCV-40, and ensure alarm clears.

7.0 PARTICULATE SAMPLER LOW FLOW ALARM CHECK

Note: Inform the Power house that alarm testing at the K1 stack is taking place, and to ignore alarms received while the testing is ongoing.

- 7.1 Ensure K1-PIC-38 has stabilized the sample manifold vacuum.
- 7.2 Adjust K1-FCV-41 until record sample flow as read on K1-FIT-34 is 3.00 SCFM. Verify control room recorder reads $3.0 \text{ SCFM} \pm 0.3 \text{ SCFM}$.
- 7.3 Slowly adjust K1-FCV-41 to 1.75 SCFM, and verify the low record sample flow alarm is received in the control room. Verify control room recorder reads $1.75 \text{ SCFM} \pm 0.3 \text{ SCFM}$. Record flow at which alarm is received.

Sample low flow alarm (SCFM)

- 7.4 Slowly open K1-FCV-41, and ensure alarm clears.
- 7.5 Set K1-FCV-41 flow to 3.16 SCFM.

8.0 STACK FLOW TESTING

- 8.1 Perform the following steps with normal stack flow.
- 8.2 Record stack flows from K1-FIT-33, and the reading from the control room chart recorder.

<u>Stack flow from Chart recorder</u>	<u>K1-FIT-33 flow</u>
---------------------------------------	-----------------------

- 8.3 Request Vent and Balance to perform stack flow measurement.
- 8.4 Verify the Vent and Balance (V & B) stack flow reading is within 10% of the readout of K1-FIT-33.

<u>K1-FIT-33 readout</u>	<u>V & B reading</u>	<u>% Deviation</u>
--------------------------	--------------------------	--------------------

- 8.5 Verify the Vent and Balance (V & B) stack flow reading is within 10% of the readout of the flow recorder in the control room.

<u>Recorder readout</u>	<u>V & B reading</u>	<u>% Deviation</u>
-------------------------	--------------------------	--------------------

9.0 COMPLETION OF TESTING

- 9.1 With the completion of this procedure, the 340-NT-EX sampling and monitoring systems are operational and on line. The operating parameters of the system will be provided by Liquid Effluent Process Engineering, until the Health Physics operating procedure is issued.

Concurrence:

Liquid Effluent Process Engineering Manager/Date

[illegible]

APPENDIX A
OTP EXCEPTIONS

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

Appendix C
System Diagram