

MAR 31 1997

Station 34

21

ENGINEERING DATA TRANSMITTAL

1. EDT 618645

2. To: (Receiving Organization) RFSH T-Plant		3. From: (Originating Organization) FDNW FS/WM Engineering		4. Related EDT No.: n/a	
5. Proj./Prog./Dept./Div.: Project W-417		6. Design Authority/ Design Agent/Cog. Engr.: T.L.Erickson/S.D.Ellingson/ N.K.Myers		7. Purchase Order No.: n/a	
8. Originator Remarks: Attached is the Acceptance Test Procedure (ATP) for hydrostatically testing identified portions of the T-Plant Railcar Waste Transfer System following recent modification.				9. Equip./Component No.: n/a	
				10. System/Bldg./Facility: 221-T	
11. Receiver Remarks:		11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		12. Major Assm. Dwg. No.: n/a	
				13. Permit/Permit Application No.: n/a	
				14. Required Response Date: n/a	

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	HNF-SD-W417-ATP-001	13	0	Railcar Waste Transfer System Hydrostatic Test	Q	2	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	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	1	Design Authority	See Title Page								
		Design Agent	"								
2	1	Cog. Eng.	<i>N.K. Myers</i>	3/31/97							
2	1	Cog. Mgr.	<i>N.K. Myers</i>	3/31/97							
		QA	"	(See page 1)							
		Safety	"								
		Env.	"								

18. Originator <i>S.D. Ellingson</i> Date: 3/28/97		19. Authorized Representative Date for Receiving Organization <i>N.K. Myers</i> 3/31/97		20. Design Authority/ Cognizant Manager <i>N.K. Myers</i> 3/26/97		21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments	
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Railcar Waste Transfer System Hydrostatic Test

Scott D. Ellingson

Fluor Daniel Northwest, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 618645 UC: 2050
Org Code: 454 Charge Code: P8E301
B&R Code: EW3130020 Total Pages: 14

Key Words: Railcar, Hydrostatic

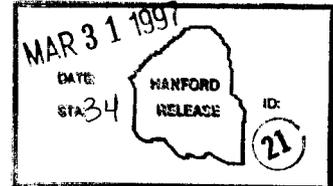
Abstract: Recent modifications have been performed on the T-Plant Railcar Waste Transfer System. This Acceptance Test Procedure (ATP) has been prepared to demonstrate that identified piping welds and mechanical connections incorporated during the modification are of high integrity and are acceptable for service. This will be achieved by implementation of a hydrostatic leak test.

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Scott D. Ellingson 3/31/97

Release Approval Date



Release Stamp

Approved for Public Release

ACCEPTANCE TEST PROCEDURE HNF-SD-W417-ATP-001
 TEST TITLE Railcar Waste Transfer System Hydrostatic Test
 LOCATION 221-T Facility, T-Plant Canyon
 PROJECT NUMBER W-417 WORK ORDER C12321
 PROJECT TITLE Railcar Waste Transfer System
 USQ # T-97-24

Prepared By
 Fluor Daniel Northwest, Inc.
 Richland, Washington

For
 Rust Federal Services Hanford, Inc.

PROCEDURE APPROVAL

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EXECUTION AND TEST APPROVAL

Executed by:

Test Director/Organization Date

Test Operator/Organization Date

Recorder/Organization Date

Approved and accepted by:

Without exceptions____ With exceptions____ With exceptions outstanding____

Acceptance Inspector/Organization Date

Cognizant Engineer Date

ECN Record (As reqd): _____

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1 PURPOSE

Recent modifications have been performed on the T-Plant Railcar Waste Transfer System. This Acceptance Test Procedure (ATP) has been prepared to demonstrate that identified piping welds and mechanical connections incorporated during the modification are of high integrity and are acceptable for service. This will be achieved by implementation of a hydrostatic leak test.

2 REFERENCES

2.1 DRAWINGS

H-2-79851 Railcar Waste Transfer System Piping Plan, Sect, & Details (Sht 1/Rev 3, Sht 2/Rev 3, Sht 3/Rev 2, Sht 4/Rev 2)

2.2 ENGINEERING CHANGE NOTICES (ECN)

ECN-623317 ECN-633442 ECN-633443 ECN-638832 ECN-160894

2.3 SPECIFICATION

American National Standard Institute (ANSI) ASME B31.3, "Process Piping" (Latest revision)

3 RESPONSIBILITIES

3.1 GENERAL

Each company or organization participating in this ATP will designate personnel to assume the responsibilities and duties as defined herein or otherwise requested by the cognizant engineer. The designees shall become familiar with this ATP and the systems involved to the extent that they can perform their assigned duties.

3.2 RFSH COGNIZANT ENGINEER

3.2.1 Designates the Test Director, Test Operator, Recorder, Acceptance Inspector, and any support organizations which must participate in the testing. Note, the cognizant engineer may designate one individual for multiple tasks. (eg, the Test Director and Test Operator can be the same individual, etc...)

3.2.2 Notifies concerned parties when a change is made in the testing schedule.

3.2.3 Initiates ECN's, or arranges the appropriate organizations to initiate ECN's, to document required changes to the ATP.

3.2.4 Takes necessary action to resolve exceptions to the test and dispositions final acceptance of exceptions.

3.2.5 Signs Execution and Test Approval page when test is approved and accepted.

3.2.6 Obtains required signatures on the ATP Master.

3.2.7 Provides a distribution list for the approved and accepted ATP.

3.3 TEST DIRECTOR

- 3.3.1 Schedules and conducts a prejob kickoff meeting with all test participants as necessary.
- 3.3.2 Coordinates and directs acceptance testing.
- 3.3.3 Confirms that all prerequisites have been completed.
- 3.3.4 Stops any test which, in his or her judgment, may cause damage to the system until the problem has been resolved.
- 3.3.5 If the test is to be suspended for a period of time, ensures that the system is left in a safe mode.
- 3.3.6 Before restarting suspended test, re verifies the test prerequisites.
- 3.3.7 Ensures that required environmental conditions are maintained.
- 3.3.8 Reviews recorded data, discrepancies, and exceptions.
- 3.3.9 Signs Execution and Test Approval page when test has been performed.

3.4 RECORDER

- 3.4.1 Prepares a Field copy from the ATP Master.
- 3.4.2 Records names of all designated personnel on Field copy of ATP prior to start of testing.
- 3.4.3 Records calibration expiration dates of instruments as applicable.
- 3.4.4 Initials and dates every test step on the Field copy as it is completed next to the step number. Records all other test data.
- 3.4.5 Signs Execution and Test Approval page when test has been performed.
- 3.4.6 After test is finished, assigns alpha numeric page numbers to any added data sheets. Records page numbers in the Table of Contents.
- 3.4.7 Transfers Field copy entries for each step to the ATP Master in ink or type, signs, and dates. Transmits the completed ATP Master to the Cognizant Engineer for signature routing. Transmits the ATP Field copy to the Project Engineer for file retention.

3.5 TEST OPERATOR

- 3.5.1 Performs test under direction of the Test Director.
- 3.5.2 Provides, or assists construction personnel in providing, labor, equipment, and test instruments required for performing the test.
- 3.5.3 Confirms that all equipment required for performing test will be available at the start of testing.
- 3.5.4 Signs Execution and Test Approval page when test has been performed.

3.6 ACCEPTANCE INSPECTOR

3.6.1 Provides inspection on all identified welds and connections.

3.6.2 Initials test steps as they are completed on the ATP Field copy and also on the Master copy at job completion.

3.6.3 Signs Execution and Test Approval page when test has been performed.

3.7 CONSTRUCTION SUPPORT

3.7.1 Provides, or assists Test Operator in providing, labor, equipment, and test instruments required for performing the test.

3.7.2 Installs test equipment and/or performs all construction work.

4 CHANGE CONTROL

Required changes to this ATP must be processed on ECN forms in accordance with WHC-CM-6-1 Standard Engineering Practices, EP-2.2 "Engineering Document Change Control". If a need for change is discovered in the course of running the test, the test shall be stopped until an ECN is initiated and approved, or otherwise directed by the Test Director. However, this does not prevent the running of another portion of the test unaffected by the change.

If field work (i.e. work in a radiological zone) is underway, the nature of the change shall be determined by the Cognizant Engineer. The Cognizant Engineer shall authorize work to proceed and instruct the Test Director regarding the steps necessary to implement the change. The change and the authorization by the Cognizant Engineer shall be documented on the ATP Field copy to reflect forthcoming ECN information. Before completing the work, the Cognizant Engineer shall initiate the ECN, or arrange the appropriate organizations to initiate the ECN, and obtain the required approvals in accordance with EP 2.2, Section 2.7.3, and release the ECN within 24 hours.

Prior to final test approval, the Cognizant Engineer shall enter all ECNs written against the ATP on the Execution And Test Approval page.

5 EXECUTION

5.1 OCCUPATIONAL SAFETY AND HEALTH

Individuals shall carry out their assigned work in a safe manner to protect themselves and others from undue hazards and to prevent damage to property and the environment. Facility line managers shall assure safety of activities within their areas to prevent injury, property damage, or interruption of operation. Performance of test activities shall always include safety and health aspects. In the event of any unforeseen test leak or fluid spill, the responsible Radiological Control Technician (RCT) shall determine any potential exposure risk and work with the Test Director to determine a recovery plan.

5.2 PREREQUISITES

- 5.2.1 Reference documents have been verified for correct revision number and outstanding ECNs.
- 5.2.2 Systems have been inspected for compliance with construction documents.
- 5.2.3 A Prejob Safety Analysis has been prepared and a Prejob Safety Meeting has been conducted.
- 5.2.4 Test instruments have been checked for a valid calibration stamp. All calibration data has been recorded in Table 3.
- 5.2.5 A Radiation Work Permit (RWP) has been initiated and approved by the Operating Contractor.
- 5.2.6 All test equipment has been obtained and staged at its appropriate location on the canyon deck. This includes the pump, test manifold, temporary hoses, temporary pipe, spill buckets, etc. Stage four drums to collect overflow liquid at P-LW-C-15-106.
- 5.2.7 Any appropriate lock and tag procedures deemed necessary have been implemented in the field. The Lock & Tag coordinator shall verify and sign below.
Coordinator Verification: _____
- 5.2.8 The existing piping system has been drained of residual process waste and all potential pressure sources (ie, pumps or auxiliary process lines) have been shut down or otherwise isolated from the system.

5.3 TEST STEPS

The pipe welds and mechanical connections identified in Figure 1 of this ATP shall both be tested by implementation of a single hydrostatic leak test. The test shall employ the equipment, and follow the methods and criteria, as specified on reference drawing H-2-79851, Sheet 1, General Note 11. This criteria, with ATP exceptions, are as follows:

System shall be hydrostatically tested at 225 PSIG for a minimum of 10 minutes. Coat welded joints with a mixture of alcohol and blue chalk and allow to dry before testing. Visually inspect for leaks while system is pressurized. Joints and hose connections shall show no evidence of leaks. Test shall be performed in accordance with ASME B31.3, Paragraph 345.4. Install a temporary relief valve prior to testing.

Exceptions:

1. The use of water in lieu of alcohol may be substituted for making the chalk mixture.
2. Chalking of the mechanical connections (flanged joints) is not required.

-----**System Preparation**-----

All steps below shall be initiated by the assigned test Recorder to show verification of completion. This shall be accomplished in the space provided next to each test number. In addition, some steps concerning critical operations shall require operator sign-off as Independent Verification. These steps will contain a designated line for sign-off where applicable.

- ____ 5.3.1 Remove the air vent above valve P-LW-C-15-106 at Section 15 and replace with a temporary purge hose. Terminate the hose within a spill bucket or drum located on the canyon deck. Save the air vent for re-installation at job completion. (See Section C drawing H-2-79851, sheet 1, for location of air vent)

Note: The sequence of accomplishing step 5.3.2 is **optional**. This step may be accomplished anywhere in this ATP prior to testing and inspection.

- ____ 5.3.2 Chalk one flange weld at each of the following valves. See Figure 1 (*) for exact location:
- | | | |
|---------------|------------|----|
| T-LW-C-05-268 | At Section | 5 |
| T-LW-C-05-270 | " | 5 |
| T-LW-C-11-280 | " | 11 |
| T-LW-C-11-282 | " | 11 |

- ____ 5.3.3 Close the following valves:
- | | | |
|---------------|------------|----|
| P-LW-C-2-001 | At Section | 2 |
| T-LW-C-05-271 | " | 5 |
| T-LW-C-05-272 | " | 5 |
| T-LW-C-05-275 | " | 5 |
| T-LW-C-05-276 | " | 5 |
| T-LW-C-05-277 | " | 5 |
| T-LW-C-05-278 | " | 5 |
| T-LW-C-05-279 | " | 5 |
| T-LW-C-11-283 | " | 11 |
| T-LW-C-11-284 | " | 11 |
| T-LW-C-11-287 | " | 11 |
| T-LW-C-11-288 | " | 11 |
| T-LW-C-11-289 | " | 11 |
| T-LW-C-11-290 | " | 11 |
| T-LW-C-11-291 | " | 11 |
| P-LW-C-15-001 | " | 15 |
| P-LW-C-15-002 | " | 15 |
| P-LW-C-15-105 | " | 15 |

Independent Verification: _____ (All valves)

- ____ 5.3.4 Open the following valves:
- | | | |
|---------------|------------|----|
| T-LW-C-05-268 | At Section | 5 |
| T-LW-C-05-269 | " | 5 |
| T-LW-C-05-270 | " | 5 |
| T-LW-C-05-274 | " | 5 |
| T-LW-C-11-280 | " | 11 |
| T-LW-C-11-281 | " | 11 |
| T-LW-C-11-282 | " | 11 |
| T-LW-C-11-286 | " | 11 |
| P-LW-C-15-003 | " | 15 |
| P-LW-C-15-106 | " | 15 |

-----**System Flooding**-----

Note: The following steps, steps 5.3.5 through 5.3.8, involve flooding the piping system with water at four different Sections within the canyon. The **sequence of these steps are optional**. Test personnel may choose which portion, or portions, of the system to flood first, etc. Final flooding shall be assured when overflow is witnessed through the purge hose install at Section 15 (ref. step 5.3.1). Assure all overflow is captured within a spill bucket or drum during operation.

___ 5.3.5 Flood piping at Section 2.

- 5.3.5.1 Attach a temporary water supply source to valve P-LW-C-2-001. Remove any connected piping or hose as required.
- 5.3.5.2 Open the inherent water supply source valve and valve P-LW-C-2-001 to flood piping.
- 5.3.5.3 Close the water supply source valve and valve P-LW-C-2-001 when flooding is complete. Verify valves are closed.

Independent Verification: _____

___ 5.3.6 Flood piping at Section 5.

- 5.3.6.1 Attach a temporary water supply source, or use the existing process water supply source, to valve T-LW-C-05-279. Remove or utilize existing components as required.
- 5.3.6.2 Open the inherent water supply source valve and valve T-LW-C-05-279 to flood piping.
- 5.3.6.3 Close the water supply source valve and valve T-LW-C-05-279 when flooding is complete. Verify valves are closed.

Independent Verification: _____

___ 5.3.7 Flood piping at Section 11.

- 5.3.7.1 Attach a temporary water supply source, or use the existing process water supply source, to valve T-LW-C-11-291. Remove or utilize existing components as required.
- 5.3.7.2 Open the inherent water supply source valve and valve T-LW-C-11-291 to flood piping.
- 5.3.7.3 Close the water supply source valve and valve T-LW-C-11-291 when flooding is complete. Verify valves are closed.

Independent Verification: _____

___ 5.3.8 Flood piping at Section 15.

- 5.3.8.1 Attach a temporary water supply source, or use the existing process water supply source, to valve P-LW-C-15-002. Remove or utilize existing components as required.

- 5.3.8.2 Attach the test pump/manifold system to valve P-LW-C-15-001. Remove any components as required.
- 5.3.8.3 Open valve P-LW-C-15-001 to the test pump/manifold system and any inherent isolation valve, or valves, on the manifold.
- 5.3.8.4 Open the inherent water supply source valve and valve P-LW-C-15-002 to flood piping.
- 5.3.8.5 Close the water supply source valve and valve P-LW-C-15-002 when flooding is complete. Verify valves are closed.

Independent Verification: _____

-----**System Testing**-----

- ___ 5.3.9 Remove the temporary water supply source attached to valves:

P-LW-C-2-001	At Section	2
T-LW-C-05-279	"	5
T-LW-C-11-291	"	11
P-LW-C-15-002	"	15

Assure any excess water within the hose is captured in a spill bucket or drum.

- ___ 5.3.10 Close purge valve P-LW-C-15-106 at Section 15.

Independent Verification: _____

- ___ 5.3.11 Energize the test pump at Section 15 to 225 PSIG pressure. Perform the leak test and inspection specified in paragraph 5.3 of this ATP. Record results in Tables 1 and 2.

Note. If any leaks are encountered during inspection, contact the responsible Radiological Control Technician (RCT) and see Section 5.4 of this ATP.

-----**Restore System To Original Configuration**-----

Note: No draining of the system is required following completion of this test. The system will be turned over to Plant Operations containing the test fluid.

- ___ 5.3.12 De-energize the test pump (if not of the manual type) and close any inherent valves on the associated water supply source which have the potential to pressurize the system.

- ___ 5.3.13 Slowly open the relief valve on the test pump/manifold system to relieve system pressure. Also open vent valve P-LW-C-15-106 at Section 15 to assure system pressure is removed. Assure any overflow water through either purge valve is captured within a spill bucket or drum.

- ___ 5.3.14 Close, or verify closure, of all valves inherent to the piping system which are shown on Figure 1.

Independent Verification: _____

- ___ 5.3.15 Remove the test pump/manifold system from valve P-LW-C-15-001 at Section 15.

- ___ 5.3.16 Remove the purge hose install at vent valve P-LW-C-15-106 at Section 15. Assure that the hose is drained as best as possible prior to removal. Capture any potential fluid within a spill bucket or drum.

5.3.17 Reattach all previously removed existing components at all Section of the canyon to restore system to original configuration. This includes the air vent and all original transfer piping, hoses, and/or components.

5.4 RETEST STEPS

In the event one or more of the tested welds or connections are found to leak and do not pass inspection, repair per cognizant engineer's instructions and retest system following Section 5.3 of this ATP. The inspection results shall be revised in Tables 1 and 2 as required by initialing and dating to reflect final acceptance.

-----ATP Record Data-----

Table 1 - Mechanical Connections			
Joint Location (Valve #)	Passed Leak Test	Failed Leak Test	Comments/Resolutions/Exceptions
T-LW-C-05-269			
T-LW-C-05-272			
T-LW-C-05-273			Two joints
T-LW-C-05-274			
T-LW-C-05-275			
T-LW-C-05-278			
T-LW-C-05-279			
T-LW-C-11-281			
T-LW-C-11-284			
T-LW-C-11-285			Two joints
T-LW-C-11-286			
T-LW-C-11-287			
T-LW-C-11-290			
T-LW-C-11-291			

(Recorder to initial and date in appropriate location)

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	Scott D. Ellingson	Date 3/28/97
Project Title/Work Order		EDT No. 618645
T-Plant Railcar Waste Transfer System Hydrostatic Test		ECN No.

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
M.H. Brown	N1-29	X			
S.D. Ellingson	G3-17	X			
K.F. Feigner	N1-29	X			
N.K. Myers	T3-28	X			
C.T. O'Neill	G3-17	X			
P.F. Power	T7-27	X			
T.C. Synoground	T3-28	X			
Record Center	T3-28	X			
Project files	R1-29	X			
Central Files	A3-88	X			
W.S. Ayers	T3-28				X
B.G. Baker	T3-28				X
L.T. Blackford	T3-28				X
T.L. Erickson	T3-28				X
C.K. Girres	T3-28				X
L.A. Jeppson	T3-28				X
B.R. Powell	T4-06				X
C.R. Zook	G3-17				X