MAY 09 1995
35 Station 21

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT

600157

2. To: (Receiving Organization) Distribution				3. From: (Originating Organization) Characterization Monitoring Systems				4. Related EDT No.: N/A			
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11. Receiver Remarks:								12. Major Assm. Dwg. No.: N/A			
								13. Permit/Permit Application No.: N/A			
								14. Required Response Date: ASAP			

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	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-WM-ATP-129		0	Void Fraction Instrument Software, Version 1.2, Acceptance Procedure	Q	1,2	1	

16. KEY					
Impact Level (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
1, 2, 3, or 4 (see MRP 5.43)		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 Impact Level for required signatures)									
(G)	(H)	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	1	Cog. Eng.	M. Gimera	4/21/95	6-37				
1	1	Cog. Mgr.	R. E. Bauer	4/28/95	6-37				
1	1	QA	M. L. McElroy	5/9/95	57-07				
		Safety							
		Env.							
1	1		T. I. Stokes	4-28-95	H5-09				

18. Signature of ED Originator M. Gimera 4/21/95		19. Authorized Representative Date for Receiving Organization R. E. Bauer 4/28/95		20. Cognizant/Project Engineer's Manager Date R. E. Bauer 4/28/95		21. DOE APPROVAL (if required) Ltr. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments	
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RELEASE AUTHORIZATION

Document Number: WHC-SD-WM-ATP-129, Rev. 0

Document Title: VOID FRACTION INSTRUMENT SOFTWARE, VERSION 1.2,
ACCEPTANCE TEST PROCEDURE

Release Date: 5/8/95

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

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Chris Willingham

C. Willingham

5/8/95

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SUPPORTING DOCUMENT		1. Total Pages 11
2. Title Void Fraction Instrument Software, Version 1.2, Acceptance Test Procedure	3. Number WHC-SD-WM-ATP-129	4. Rev No. 0
5. Key Words Void Fraction 101-SY Instrumentation	6. Author Name: M. Gimera <i>Michael Gimera</i> Signature Organization/Charge Code 71140 / N2B12	
7. Abstract Provides the procedures for the void fraction acceptance test software, Version 1.2. The void fraction instrument will collect data to calculate the amount of gas trapped in Tank 101-SY.		
		8. RELEASE STAMP OFFICIAL RELEASE BY WHC DATE MAY 09 1995 35 SECTION 21

**VOID FRACTION INSTRUMENT
SOFTWARE VERSION 1.2
ACCEPTANCE TEST PROCEDURE**

IMPACT LEVEL Q

**Issued by
Characterization Monitoring Systems
April 1995**

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Westinghouse Hanford Company

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**VOID FRACTION INSTRUMENT
SOFTWARE VERSION 1.2
ACCEPTANCE TEST PROCEDURE**

1. INTRODUCTION

1.1. PURPOSE

This document presents both a test plan and acceptance test procedure for testing the modifications to the void fraction instrument software. Together with the forthcoming acceptance test report, this document satisfies the requirements in EP 4.1, "Design Verification Requirements." The selected method of design verification is qualification testing.

1.2. SCOPE

The testing described in this document covers modifications to the software that controls and acquires data for the void fraction instrument. The testing is limited to the modifications that result in version 1.2 of the software. Other aspects of the software were covered in a previous ATP. This approach is valid because the software is modular and the affect of changes have a limited scope.

1.3. DEFINITIONS AND ABBREVIATIONS

ATP Acceptance Test Procedure

EP Standard Engineering Practice (WHC-CM-6-1)

2. SOFTWARE TEST PLAN

The software modifications as described in Section 2.2 are minor and testing is very simple. Therefore, the testing will be informal.

2.1. PERSONNEL REQUIREMENTS

Due to the simplicity of the test the test engineer may also serve as the test performer.

2.1.1. Test Engineer

The Test Engineer's responsibilities are as follows:

- Notify all interested parties when a change is made in the testing schedule.
- Record exceptions and test steps which are not performed.
- Notify the Test Performer of exceptions when the exception is made.

2.1.2. Test Performer

The Test Performer's responsibilities are as follows:

- Perform the test as described in this document.
- Stop any test which, in the judgment of the Test Performer, may cause damage to the system or present an unsafe condition.
- Coordinate efforts with all other assigned test personnel.
- Observe tests and record test data (if any).

2.1.3. QA Witness

Due to the simplicity of testing the QA Witness shall be optional. If present the QA witness will observe the testing and provide a signature that the test procedures were followed and results were accurately recorded on the data sheets.

2.1.4. Other Witnesses

No further witnesses are required during testing. Interested observers will be allowed.

2.2. FEATURES TO BE TESTED

The modifications that result in version 1.2 of the software are minor. The software modifications only read a dynamometer that used with crane operations. This dynamometer transmits a radio frequency signal to a receiving unit in the control console. The receiving unit transmits the digital signal to the computer through serial port three (COM3). The software modification reads this serial port periodically and displays the value read to the front panel. The value is also recorded to file when the record data switch is activated.

This modification will be tested by running the software and reading the value on the front panel. The record data switch will be activated and the resulting file checked to verify that the crane load was recorded to file. Other values on the front panel and in the data will be observed for any erroneous values which would be an indication of side affects. It is highly unlikely that any side-affects will occur do to the module nature of the software.

3. ACCEPTANCE TEST PROCEDURE

This section provides the instructions to perform acceptance testing on the void fraction instrument software.

3.1. INSTRUCTION SECTION

3.1.1. System Setup

Testing will be conducted in the field. The hardware should be setup in accordance with the instructions in the Operations and Maintenance Manual.

3.1.2. Front Panel Testing

Test successful initialization.

- Step 1) Turn on power to instrumentation. The computer screen should show the Windows™ interface.
- Step 2) Start LabView program by doubling clicking on LabView icon.
- Step 3) Close the current LabView window.
- Step 4) Select "Open VI" from the dialog box.
- Step 5) Select "Void Fraction.vi" from the file selector dialog box.
- Step 6) The void fraction instrument front panel should now be displayed on the computer screen. Click on the run icon.
- Step 7) Power up crane dynamometer (it must located within 300 feet of the control cabinet).
- Step 8) Note crane load reading from front panel to the test data sheet. If no load is on the dynamometer, the reading should be less than zero pounds because the dynamometer was zeroed with shackles and some rigging.
- Step 9) Note if any other values from the front panel appear to be erroneous.
- Step 10) Click to activate the Record Data switch.
- Step 11) After not less than 10 seconds click to deactivate the Record Data switch.
- Step 12) Click the LabView stop icon.
- Step 13) Open a text editor and view the file that was created. The file should be located in the directory "C:\VF_DATA\MM-DD-YY" where MM-DD-YY stand for the current date. The file's name will be the current date with the suffix ".cfg".

- Step 14) Record to the test data sheet the crane load value that was recorded to file.
- Step 15) Note if any other values from the file appear to be erroneous.
- Step 16) Shut down control cabinet in accordance with instructions in the operations and maintenance manual.

3.2. TEST EXECUTION SECTION

3.2.1. Test Data Sheets

The test data sheets are shown on the following pages.

SOFTWARE ACCEPTANCE TEST DATA SHEETS
FOR
VOID FRACTION INSTRUMENT

Test Performer: _____

Date of Test _____

Step	Description	Data	Expected
8	Reading of crane load from front panel	_____ lb	< 0 lb
9	Do any values appear to be erroneous?	Y N	N
14	Reading of crane load from file	_____ lb	< 0 lb
15	Do any values appear to be erroneous?	Y N	N

Test Performer

QA Witness

3.3. EXCEPTIONS TO ACCEPTANCE TEST

The test exception sheet is shown on the following page.

Date _____

4. REFERENCES

1. WHC-CM-6-1, "Standard Engineering Practices".
2. ANSI/IEEE Standard 829-1983, "IEEE Standard for Software Test Documentation".