

# ENGINEERING CHANGE NOTICE

1. ECN **608598**

Page 1 of 2

Proj.  
ECN

<b>2. ECN Category (mark one)</b> Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary Standby <input type="checkbox"/> Supersedeure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	<b>3. Originator's Name, Organization, MSIN, and Telephone No.</b> DG Spurling, IRM/ISS/C&WMSS, R1-01, 3-2969	<b>4. Date</b> 8/29/94
	<b>5. Project Title/No./Work Order No.</b> TMACS/N46G1	<b>6. Bldg./Sys./Fac. No.</b> 2750E/TMACS/200E
	<b>8. Document Numbers Changed by this ECN (includes sheet no. and rev.)</b> WHC-SD-WM-TRP-105, Rev 85 WHC-SD-WM-TRP-106, Rev 85 WHC-SD-WM-TRP-107, Rev 65 WHC-SD-WM-TRP-109, Rev 34 WHC-SD-WM-TRP-113, Rev 34 WHC-SD-WM-TRP-114, Rev 65	<b>9. Related ECN No(s).</b> ECN 196863 EDT 159986 EDT 600611 EDT 196862
		<b>7. Impact Level</b> Q
		<b>10. Related PO No.</b>
<b>11a. Modification Work</b> <input type="checkbox"/> Yes (fill out Blk. 11b) <input checked="" type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	<b>11b. Work Package No.</b> N46G1	<b>11c. Modification Work Complete</b> N/A Cog. Engineer Signature & Date
		<b>11d. Restored to Original Condition (Temp. or Standby ECN only)</b> N/A Cog. Engineer Signature & Date
<b>12. Description of Change</b> Four Tank Farm Surveillance System (TFSS) Change Requests were incorporated into TMACS Software Release 4.1. These include AN Farm sensor addition (temperature, pressure), C-106 instrument install (Enraf, pressure), Enraf installs (C-103, BX-106, T-102, T-107) and enhancements to the Acromag software driver.  The results of this software test are documented in each Test Report, and summarized in Test Procedure 10 (WHC-SD-WM-TRP-114).		
<b>13a. Justification (mark one)</b> As-Found <input type="checkbox"/>	Criteria Change <input checked="" type="checkbox"/>	Design Improvement <input type="checkbox"/>
	Facilitate Const. <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>
		Environmental <input type="checkbox"/>
		Design Error/Omission <input type="checkbox"/>
<b>13b. Justification Details</b> TMACS software development and release guidelines are governed under WHC-IP-0842, Section 12.2, Tank Farm Surveillance System Configuration Control Board, and WHC-SD-WM-CSCM-019, TMACS Software Configuration Management Plan		
<b>14. Distribution (include name, MSIN, and no. of copies)</b> See Distribution Sheet		RELEASE STAMP OFFICIAL RELEASE BY WHC DATE SEP 01 1994

## **DISCLAIMER**

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

# ENGINEERING CHANGE NOTICE

Page 2 of 2

1. ECN (use no. from pg. 1)

608598

<b>15. Design Verification Required</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>16. Cost Impact</b> <table style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">ENGINEERING</td> <td style="width: 50%; text-align: center;">CONSTRUCTION</td> </tr> <tr> <td>Additional <input type="checkbox"/> \$</td> <td>Additional <input type="checkbox"/> \$</td> </tr> <tr> <td>Savings <input type="checkbox"/> \$</td> <td>Savings <input type="checkbox"/> \$</td> </tr> </table>	ENGINEERING	CONSTRUCTION	Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$	<b>17. Schedule Impact (days)</b> Improvement <input type="checkbox"/> Delay <input type="checkbox"/>
ENGINEERING	CONSTRUCTION							
Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$							
Savings <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$							

**18. Change Impact Review:** Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
Equipment Spec.	<input type="checkbox"/>	Maintenance Procedure	<input type="checkbox"/>	ASME Coded Item	<input type="checkbox"/>
Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input checked="" type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IEFD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Samp. Schedule	<input type="checkbox"/>		<input type="checkbox"/>
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>		<input type="checkbox"/>
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>		<input type="checkbox"/>

**19. Other Affected Documents:** (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision
--------------------------	--------------------------	--------------------------

**20. Approvals**

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog Engineer [DA Barnes] <i>[Signature]</i>	<u>5/31/94</u>	PE	_____
Cog. Mgr. [JS Schofield] <i>[Signature]</i>	<u>5/31/94</u>	QA	_____
QA [JA Warren] <i>[Signature]</i>	<u>08/31/94</u>	Safety	_____
Safety	<u>N/A</u>	Design	_____
Security	<u>N/A</u>	Environ.	_____
Environ.	<u>N/A</u>	Other	_____
Projects/Programs	<u>N/A</u>		_____
Tank Waste Remediation System	<u>N/A</u>		_____
Facilities Operations [TW Bohan] <i>[Signature]</i>	<u>8/31/94</u>	DEPARTMENT OF ENERGY	<u>N/A</u>
Restoration & Remediation	<u>N/A</u>	Signature or Letter No.	_____
Operations & Support Services	<u>N/A</u>		_____
IRM/ISS/C&WMSS [RB Bass] <i>[Signature]</i>	<u>8/31/94</u>	ADDITIONAL	<u>N/A</u>
IRM/ISS/C&WMSS [DG Spurling] <i>[Signature]</i>	<u>8/30/94</u>		_____
Other	<u>N/A</u>		_____
	<u>N/A</u>		_____

**RELEASE AUTHORIZATION**

**Document Number:** WHC-SD-WM-TRP-106, REV 6

**Document Title:** TMACS TEST PROCEDURE TP002: TRENDING

**Release Date:** 9/1/94

\* \* \* \* \*

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

**APPROVED FOR PUBLIC RELEASE**

\* \* \* \* \*

**WHC Information Release Administration Specialist:**



Kara Broz  
\_\_\_\_\_  
(Signature)

9/1/94  
\_\_\_\_\_  
(Date)

**SUPPORTING DOCUMENT**

1. Total Pages 15

2. Title

TMACS Test Procedure TP002: Trending

3. Number

WHC-SD-WM-TRP-106

4. Rev No.

6

5. Key Words

Software, Test Procedure, Tank Monitor and Control System, TMACS Software Project

6. Author

Name: P. K. Scanlan

*P. K. Scanlan*  
Signature

Organization/Charge Code 62610/N46G1

**APPROVED FOR  
PUBLIC RELEASE**

*APR 9/1/94*

7. Abstract

The TMACS Software Project Test Procedures translate the project's acceptance criteria into test steps. Software releases are certified when the affected Test Procedures are successfully performed and the customers authorize installation of these changes.

This Test Procedure tests the TMACS Trending functions.

~~8. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed.~~

~~PATENT STATUS - This document copy, since it is transmitted in advance of patent clearance, is made available in confidence solely for use in performance of work under contracts with the U.S. Department of Energy. This document is not to be published nor its contents otherwise disseminated or used for purposes other than specified above before patent approval for such release or use has been secured, upon request, from the Patent Counsel, U.S. Department of Energy Field Office, Richland, WA.~~

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, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use 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 or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

10. RELEASE STAMP

OFFICIAL RELEASE  
BY WHC  
DATE SEP 01 1994  
STA 4

9. Impact Level Q

**MASTER**

**RECORD OF REVISION**

(1) Document Number  
WHC-SD-WM-TRP-106

Page 1

(2) Title

Tank Monitor And Control System (TMACS) Software Project, Release 4.1  
Test Procedure TP002, Trending

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release		
		(5) Cog. Engr.	(6) Cog. Mgr.	Date
0	(7) Software Release 0.0 Release Testing Released under EDT 159986, 10/15/92			
1	Software Release 1.0 Release Testing Released under ECN 196866, 1/31/93			
2	Software Release 1.1 Release Testing Released under ECN 196865, 4/30/93			
3	Software Release 2.0 Release Testing Released under ECN 196864, 10/1/93			
4	Software Release 3.0 Release Testing Released under ECN 196863, 1/15/94			
5	Software Release 4.0 Release Testing Released under ECN 196862, 5/31/94			
6 RS	Software Release 4.1 Release Testing Released under ECN 608598, 8/29/94	<i>A.D. 8/31/94</i>	<i>John Schmitt</i>	8/31/94

TANK MONITOR AND CONTROL SYSTEM  
(TMACS) SOFTWARE PROJECT

TEST PROCEDURE TP002:  
TMACS TRENDING

Patrick Scanlan  
IRM Chemical & Waste Management  
Software Support

SIGN OFF:

<u>DAVID BARNES</u> DA Barnes TMACS Cognizant Engineer	<u>David Barnes</u> signature	<u>8/24/94</u> Date
<u>T.W. BOHAN</u> T Bohan TMACS User Manager	<u>T.W. Bohan</u> signature	<u>8/23/94</u> Date
<u>J.A. WARRA</u> Software QA/V&V	<u>J.A. Warne</u> signature	<u>8/24/94</u> Date
<u>DG Spurling</u> TMACS Software Project Manager	<u>Dave Spurling</u> signature	<u>8/24/94</u> Date

**1.0 TEST ITEMS**

This Test Procedure addresses the TRENDING requirements of the TMACS. The features to be tested are the individual sensor trends and the user selected trends. Some features and functions used to perform this Test Procedure are not verified here because they are verified in Test Procedure 003.

Table 1. Test Cases

5.1	Operation of Temperature Sensor Trends . . . . .	5
5.2	Operation of User Selected trends . . . . .	6
5.3	Operation of Non-temperature Continuous Sensor Trends . . . . .	9

**2.0 ACCEPTANCE CRITERIA AND REQUIREMENTS**

The following acceptance criteria are from Section 2 of the TMACS Software Upgrade Project Acceptance Criteria:

- Provide real-time trend graphs, with the following selected time intervals: 1 hour, 8 hours, 24 hours, 7 days, 31 days.  
See Test Steps 9 - 23
- Provide trends for groups of sensors, selected by the operators.  
See Test Steps 8 - 36

The following Change Requests have been implemented in previous software releases and are tested in this Test Procedure.

- 93-031 Change TMACS Trend Plot colors to exclude red, yellow, white, and green (alarm indication colors).  
See Test Steps 5 and 8.
- 94-005 Addition of liquid level indication for tanks.  
See Test Steps 38 through 44.
- 94-021 Change labels and text on the trend selectable plots.  
See Test Steps 8 through 37.



August 16, 1994

TP002 Rev. 6

The following Change Requests have been implemented in this software release and are tested in this Test Procedure.

- 94-027 Configure sensors in AN Farm.  
See Test Steps 2 through 44.
- 94-031 Addition of Enraf level gauges.  
See Test Steps 8 through 44.
- 94-034 Add Enraf level sensor, two pressure sensors to C-106.  
See Test Steps 2 through 44.

In addition to the specified acceptance criteria, several non-deliverable items (outside the scope of the acceptance criteria) are tested in the Test Procedure.

### 3.0 TESTER INFORMATION

The TMACS system is an application built using the G2 Real-Time Expert System. The instructions for using the mouse and mouse buttons are given below.

The majority of user control of the system involves pointing at objects on the computer screen using the `POINTER`. The pointer is an arrow that is pointing to the upper left of the screen. When a user moves the mouse, the pointer moves on the screen.

The G2 system treats all three mouse buttons as if they were a single button. Whenever the use of a mouse button is required the user is free to use any of the three buttons.

The following terms are used to describe actions performed with the mouse:

- To `MOVE` the pointer, slide the mouse with no buttons pressed.
- To `POINT` to a push-button or object, move the pointer to the appropriate place on the screen.
- To `CLICK` on an object, first move your mouse so that the screen pointer rests on the object. Then, press the mouse button and release immediately without moving the mouse. **NOTE:** Clicking on a window brings that window to the top of screen.
- To `DRAG` an object with the mouse, first move the mouse so that the screen pointer rests on the object. Then, press the mouse button and move the mouse without releasing the button. The object moves along with the screen pointer as you move the mouse. Release the button when the object is in the desired place.

August 16, 1994

TP002 Rev. 6

There is one keyboard command that is used in conjunction with the mouse. If the screen becomes unreadable or objects overwrite each other the screen can be redrawn by typing Control-C. (Hold down the "Control" key while typing the letter C).

#### 4.0 PRE-TEST INSPECTION AND SETUP REQUIREMENTS

This Test Procedure uses the software developed for production use. This should be running when the formal test begins, and can be identified in three parts as "/home/G2/TMACS/prod/TMACS\_Release\_x\_x.KB" (where x\_x refers to the current revision number, with only one file in the directory matching the template), "/home/G2/BRIDGE/acromag\_brg" (which is the Acromag driver), "/home/G2/BRIDGE/panalm\_brg" (which is the Panalarm driver), and "/home/G2/BRIDGE/printer\_brg" (which is the Alarm Printer driver). The TMACS Software Engineer participating in the test shall demonstrate this.

The testing of the trend displays requires that the data recovery from disk process be complete in order that there are data points to plot in the graphs. The test administrator will verify that data recovery is complete.

5.0 TEST STEPS WITH EXPECTED RESULTS

STEP	DESCRIPTION	VERIFY
------	-------------	--------

5.1 Operation of Temperature Sensor Trends

1	<p>Have the test administrator verify that data recovery has completed. (This is necessary to make the trend lines visible in the plots.)</p> <p>Have the test administrator place TMACS in T2-USER mode.</p>	<p><i>JEB 8/26/94</i></p>
2	<p>Click on any Tank Icon in the Hanford Tank Farm Facilities window and verify that a Tank Status window appears. (If the Tank Status window is small, click on the Expand Window button.)</p>	<p><i>230</i></p> <p><i>JEB 8/26/94</i></p>
3	<p>Have the test administrator use INSPECT to display the delta values of all the temperature sensors on the tank.</p> <p>In INSPECT, type the command: "show on a workspace the names and delta of every temperature-sensor S such that S is monitoring xx-yyy" where "xx-yyy" is the tank name.</p>	<p><i>JEB 8/26/94</i></p>
4	<p>Click on the trend icon on the digital display for a thermocouple and verify that a Sensor Trend window for the thermocouple appears.</p>	<p><i>JEB 8/26/94</i></p>
5	<p>Verify that the current value on the trend graph on the Sensor Trend window and the current value on the digital display agree to within the delta value of the sensor.</p> <p>Verify that the line color is not red, yellow, white, or green.</p>	<p><i>JEB 8/26/94</i></p>
6	<p>Click on the HIDE WINDOW button at the upper left of the Sensor Trend window.</p>	<p><i>JEB 8/26/94</i></p>
7	<p>Repeat Steps 4 - 6 for all thermocouples on the tank and for the Reference thermocouples if the selected tank has reference thermocouples.</p>	<p><i>JEB 8/26/94</i></p>



August 16, 1994

TP002 Rev. 6

STEP	DESCRIPTION	VERIFY
15	Click on the circle labeled "24 hours" below the label "SELECT TIME INTERVAL". Verify that a black dot appears in the circle labeled "24 hours". Verify that the label to the left of the graph ends with "... READINGS OVER THE LAST 24 HOURS".	JEB 8/26/94
16	Click on the UPDATE GRAPH button below the graph. (Note: The trend graph will blink several times as it updates.)	JEB 8/26/94
17	Verify that the horizontal time scale of the trend graph is reset to 24 hours (1 day). The left hand value on the scale should read "-1d" and the right hand value on the scale should display the current day and month in the form "dd mmm".	JEB 8/26/94
18	Click on the circle labeled "8 hours" below the label "SELECT TIME INTERVAL". Verify that a black dot appears in the circle labeled "8 hours". Verify that the label to the left of the graph ends with "... READINGS OVER THE LAST 8 HOURS".	JEB 8/26/94
19	Click on the UPDATE GRAPH button below the graph. (Note: The trend graph will blink several times as it updates.)	JEB 8/26/94
20	Verify that the horizontal time scale of the trend graph is reset to 8 hours. The left hand value on the scale should read "-8:00" and the right hand value on the scale should display a time in hours and minutes that is close to the current time.	JEB 8/26/94
21	Click on the circle labeled "1 hour" below the label "SELECT TIME INTERVAL". Verify that a black dot appears in the circle labeled "1 hour". Verify that the label to the left of the graph ends with "... READINGS OVER THE LAST 1 HOUR".	JEB 8/26/94
22	Click on the UPDATE GRAPH button below the graph. (Note: The trend graph will blink several times as it updates.)	JEB 8/26/94
23	Verify that the horizontal time scale of the trend graph is reset to 1 hour. The left hand value on the scale should read "-1:00" and the right hand value on the scale should display a time in hours and minutes that is close to the current time.	JEB 8/26/94
24	If any sensors are selected, click on their selection boxes to de-select them.	JEB 8/26/94

August 16, 1994

TP002 Rev. 6

STEP	DESCRIPTION	VERIFY
25	Choose two sensors to test and record their numbers below.  1st sensor <u>RO4A-41</u> 2nd sensor <u>RO4A-47</u>	JEB 8/26/94
26	Click on the selection box for the 1st sensor.	JEB
27	Verify that an x appears in the selection box for the 1st sensor.	JEB
28	Click on the selection box for the 2nd sensor.	JEB
29	Verify that an x appears in the selection box for the 2nd sensor.	JEB
30	Click on the UPDATE GRAPH button below the graph. (Note: The trend graph will blink several times as it updates.)	JEB
31	Verify that the trend line for the 1st sensor appears and that the color and plot symbol agree with the symbol to the right of the selection box for the 1st sensor.	JEB
32	Verify that the values in the digital displays for the 1st sensor labeled CURRENT, LOW, and HIGH agree with the current, maximum, and minimum values on the trend line for the 1st sensor to within the delta value of the sensor.  (Use the list generated in Step 3 to get delta values.)	JEB
33	Verify that the trend line for the 2nd sensor appears and that the color and plot symbol agree with the symbol to the right of the selection box for the 2nd sensor.	JEB ✓
34	Verify that the values in the digital displays for the 2nd sensor labeled CURRENT, LOW, and HIGH agree with the current, maximum, and minimum values on the trend line for the 2nd sensor to within the delta value of the sensor.  (Use the list generated in Step 3 to get delta values.)	JEB
35	Verify that no other trend lines appear on the graph.	JEB
36	Verify that the graph vertical scale includes the range of values of all selected sensors.	JEB
37	Click on the button labeled "1 hour" if it is not currently selected.	JEB

STEP	DESCRIPTION	VERIFY
5.3 Operation of Non-temperature Continuous Sensor Trends		
38	<p>Have the test administrator identify a tank that has a level, pressure, flow or other non-temperature continuous sensor.</p> <p>Record the name of the tank identified by the test administrator.                      Tank : <u>AN-101</u></p>	<p>JEB 8/26/94</p>
39	<p>Click on the Tank Icon in the Hanford Tank Farm Facilities window for the tank recorded in Step and verify that a Tank Status window appears. (If the Tank Status window is small, click on the Expand Window button.)</p>	<p>JEB 8/26/94</p>
40	<p>Have the test administrator use INSPECT to display the delta values of all the sensors on the tank.</p> <p>In INSPECT, type the command:                      "show on a workspace the names and delta of every continuous sensor S such that S is monitoring xx-yyy" where "xx-yyy" is the tank name. <u>PDI-1 .d PDI-2 .d</u></p>	<p>JEB 8/26/94</p>
41	<p>Click on the Trend icon at the end of the sensor digital readout and verify that a Sensor Trend window for the sensor appears.</p>	<p>JEB 8/26/94</p>
42	<p>Verify that the current value on the trend graph on the Sensor Trend window and the current value on the digital display agree to within the delta value of the sensor.</p> <p>Verify that the line color is not red, yellow, white, or green.</p>	<p>JEB 8/26/94</p>
43	<p>Click on the HIDE WINDOW button at the upper left of the Sensor Trend window.</p>	<p>JEB 8/26/94</p>
44	<p>Click on the HIDE WINDOW button in the upper left corner of the TANK STATUS WINDOW.</p>	<p>JEB 8/26/94</p>

ATTACHMENTS:

- Acceptance Sheet
- Exception Sheets
- Data/Verification Sheet
- Test Log

August 16, 1994

TP002 Rev. 6

### ACCEPTANCE SHEET

TEST PROCEDURE NUMBER: TP002

DATE: 8/26/94

ORGANIZATION NAME: CXWSSS

ORG#: 62610

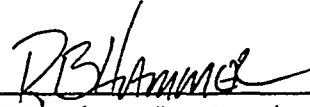
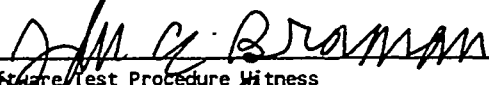
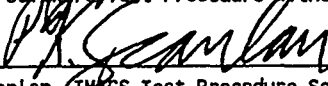
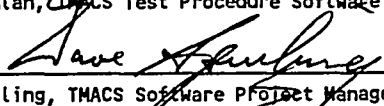
EXCEPTION SHEETS FOR THIS TEST PROCEDURE:

TESTER	WITNESS	STEP	DATE	RESOLVED
<u>No exceptions</u>				

COMMENTS:

All of the test steps of this test procedure have been tested and exception sheets for this test procedure have been resolved.

APPROVAL:

	<u>8-26-94</u>
TMACS Software Test Procedure Tester	Date
	<u>8/26/94</u>
TMACS Software Test Procedure Witness	Date
	<u>8/26/94</u>
PK Scanlan, TMACS Test Procedure Software Engineer	Date
	<u>8/26/94</u>
DG Spurling, TMACS Software Project Manager	Date



August 16, 1994

TP002 Rev. 6

### EXCEPTION SHEET

TEST CASE NUMBER: TP002      STEP#: \_\_\_\_\_      DATE: \_\_\_\_\_

**DESCRIPTION:**

*No EXCEPTIONS*

**RESOLUTION:**

DATE RESOLVED: \_\_\_\_\_

**APPROVAL:**

\_\_\_\_\_  
TMACS Software Test Procedure Tester

*A. M. C. Brannan*

Date

*8/26/94*

\_\_\_\_\_  
TMACS Software Test Procedure Witness

Date

\_\_\_\_\_  
PK Scanlan, TMACS Test Procedure Software Engineer

*David Spurling*

Date

*8/26/94*

\_\_\_\_\_  
DG Spurling, TMACS Software Project Manager

Date

### DATA/VERIFICATION SHEET

This Sheet provides a record of Personnel who are involved in testing, data recording, verifying, and evaluating the Test Procedure. This form needs to be completed before a formal test is begun.

**DIRECTIONS:**

Print the name, sign, initial, and date the below lines of the participants.

TEST PROCEDURE NUMBER: TP002

<u>ROGER B. HAMMER - TANK FOCUS OPERATOR</u>	<u>RBH</u>	<u>8-26-94</u>
Tester / Organization	Initials	Date

<u>SHANE BRANNAN 62610</u>	<u>SB</u>	<u>8-26-94</u>
Witness / Organization	Initials	Date

<u>PK Scanlan</u>	<u>PKS</u>	<u>8/26/94</u>
PK Scanlan, TMACS Test Procedure Software Engineer	Initials	Date

<u>Dave Spurling</u>	<u>DS</u>	<u>8/26/94</u>
DG Spurling, TMACS Software Project Manager	Initials	Date

_____ Name / Organization	_____ Initials	_____ Date
------------------------------	-------------------	---------------

_____ Name / Organization	_____ Initials	_____ Date
------------------------------	-------------------	---------------

_____ Name / Organization	_____ Initials	_____ Date
------------------------------	-------------------	---------------

TEST LOG

TEST PROCEDURE NUMBER: TP002

Date: 8/28/94

WITNESS: JM Branman

TEST LOG NOTES:

~~WEEK~~ Step 7 RECOMMEND CHANGING 1 HOUR

Step 3 SHOULD NOTE TO PRINT AND SAVE LIST FOR USE IN STEPS 32 AND 34

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_