

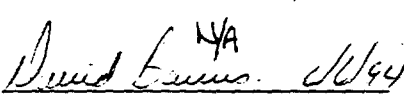
# ENGINEERING CHANGE NOTICE

1. ECN **196862**

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 <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <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> 5/31/94
	<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 3 4 WHC-SD-WM-TRP-106, Rev 3 4 WHC-SD-WM-TRP-107, Rev 3 4 WHC-SD-WM-TRP-108, Rev 3 4 WHC-SD-WM-TRP-109, Rev 3 4 WHC-SD-WM-TRP-111, Rev 3 4 WHC-SD-WM-TRP-112, Rev 3 4 WHC-SD-WM-TRP-113, Rev 3 4 WHC-SD-WM-TRP-114, Rev 3 4	<b>9. Related ECN No(s).</b> ECN 196863 EDT 159986 EDT 600611
		<b>7. Impact Level Approval Designer</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 N/A	<b>11c. Modification Work Complete</b> <div style="text-align: center;">                   N/A                  Cog. Engineer Signature &amp; Date             </div>	<b>11d. Restored to Original Condition (Temp. or Standby ECN only)</b> N/A Cog. Engineer Signature & Date
--	--	--	---

**12. Description of Change**  
 Several Tank Farm Surveillance System (TFSS) Change Requests were incorporated into TMACS Software Release 4.0. The major software functions added in this release are initial implementation of Liquid Level monitoring and "Panalarm" alarm processing.

The results of this software test are documented in each Test Report, and summarized in Test Procedure 10 (WHC-SD-WM-TRP-113).

<b>13a. Justification (mark one)</b> As-Found <input type="checkbox"/>	Criteria Change <input checked="" type="checkbox"/>	Design Improvement <input type="checkbox"/>	Environmental <input type="checkbox"/>
	Facilitate Const. <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	Design Error/Omission <input type="checkbox"/>

**13b. Justification Details**  
 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 <div style="border: 2px solid black; padding: 5px; width: fit-content; margin: auto;">                     OFFICIAL RELEASE                       BY WHC                      DATE <b>AUG 25 1994</b>                      STA 4                 </div>
---	---

## **DISCLAIMER**

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# ENGINEERING CHANGE NOTICE

Page 2 of 2

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

196862

<b>15. Design Verification Required</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>16. Cost Impact</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;"><b>ENGINEERING</b></td> <td style="width: 50%; text-align: center;"><b>CONSTRUCTION</b></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>	<b>ENGINEERING</b>	<b>CONSTRUCTION</b>	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"/>
<b>ENGINEERING</b>	<b>CONSTRUCTION</b>							
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"/>	
Environmental Report <input type="checkbox"/>	Inspection Plan <input type="checkbox"/>	
Environmental Permit <input type="checkbox"/>	Inventory Adjustment Request <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
<b>OPERATIONS AND ENGINEERING</b>		<b>ARCHITECT-ENGINEER</b>	
Cog Engineer [DA Barnes] <i>David Barnes</i>	<u>6/6/94</u>	PE	_____
Cog. Mgr. [JS Schofield] <i>John Schofield</i>	<u>6/1/94</u>	QA	_____
QA [JA Warren] <i>J.A. Warren</i>	<u>6/7/94</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 [R Nill]	<u>6/16/94</u>	<b>DEPARTMENT OF ENERGY</b>	<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>RB Bass</i>	<u>6/6/94</u>	<b>ADDITIONAL</b>	<u>N/A</u>
IRM/ISS/C&WMSS [DG Spurling] <i>Dave Spurling</i>	<u>6/6/93</u>		_____
Other	<u>N/A</u>		_____
	<u>N/A</u>		_____

**RELEASE AUTHORIZATION**

**Document Number:** WHC-SD-WM-TRP-112, REV 5

**Document Title:** TMACS TEST PROCEDURE TP008: SACS INTERFACE

**Release Date:** 8/25/94

\* \* \* \* \*

**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)

8/25/94

(Date)

SUPPORTING DOCUMENT		1. Total Pages 14
2. Title TMACS Test Procedure TP008: SACS Interface	3. Number WHC-SD-WM-TRP-112	4. Rev No. 5
5. Key Words Software, Test Procedure, Tank Monitor and Control System, TMACS Software Project  <b>APPROVED FOR PUBLIC RELEASE</b> <i>KMB 8/25/94</i>	6. Author Name: S. J. Washburn <i>Steven J Washburn</i> Signature Organization/Charge Code 62610/N46G1	
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 SACS Interface functions.		
<del>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.</del>  <del>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.</del>  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  <div style="border: 1px solid black; padding: 5px; text-align: center;"> OFFICIAL RELEASE <span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">13</span>  BY WHC  DATE <b>AUG 25 1994</b>  <i>STA 4</i> </div>
9. Impact Level <b>Q</b>		

RECORD OF REVISION

(1) Document Number

WHC-SD-WM-TRP-112

Page 1

(2) Title

Tank Monitor And Control System (TMACS) Software Project, Release 4.0  
 Test Procedure TP008, SACS Interface

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 <u>RS</u>	Software Release 4.0 Release Testing Released under ECN 196862, 5/31/94	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Date]</i>

TANK MONITOR AND CONTROL SYSTEM

(TMACS)

SOFTWARE PROJECT

TEST PROCEDURE TP008:

SACS INTERFACE

by

Steven J. Washburn  
IRM Information & Scientific Systems

SIGN OFF:

C.C. Scieff 6-7-94  
CC Scieff TMACS Program Engineer signature Date

David Barnes 6/6/94  
DA Barnes TMACS Cognizant Engineer signature Date

JA GLASSCOCK JA Glasscock 6/1/94  
JA Glasscock SACS Technical Lead signature Date

John Free 6/6/94  
WJ Jones IRM Software V&V signature Date

Dave Spurling 5/31/94  
DG Spurling TMACS Software Project Manager signature Date

RB Bass RB Bass 6/1/94  
RB Bass IRM Manager signature Date

May 26, 1994

TP008 Rev. 5

**1.0 TEST ITEMS**

This Test Procedure addresses the TMACS interface functions to SACS. The features to be tested are generation of the continuous sensor history data logging file, discrete sensor history data logging file, single-shell tank once-a-day file, double-shell tank once-a-shift data file, and remote query of the SACS database for selected surface levels.

**Table 1. Test Cases**

5.1	Initialization . . . . .	5
5.2	Single-Shell Tank Once-a-day file . . . . .	5
5.3	Double-Shell Tank Once-a-Shift file . . . . .	6
5.4	SACS Surface Level Interface . . . . .	7

**2.0 ACCEPTANCE CRITERIA AND REQUIREMENTS**

The following acceptance criteria are from Section 8.0 of the TMACS Software Upgrade Project: Acceptance Criteria.

**8.1 SACS Database Update.**

- 8.1.1 Provide automatic recording of one reading per day for all sensors in all tanks. Record shall be created shortly after midnight. See Test Steps 2 - 4.
- 8.1.2 Provide capability to increase frequency of these recordings to shift-wise or hourly, selected on a per-tank basis. (Note: Changes to the recording frequency shall be communicated in writing by the SACS Temperature Data Custodian).

This capability has not been implemented at this time. The customer, WHC Tank Farms Surveillance & Data Acquisition, does not anticipate the need for more than one reading per day any time in the near future.

**8.2 SACS ASCII file retention.**

- 8.2:1 TMACS shall provide the ability to record all readings once a day, selected by tank or tank farm. (Note: These files are intended for end user use). The format of these files is tested in Test Procedure #4 and #5.

The following Change Requests were incorporated into previous releases of the TMACS software:



May 26, 1994

TP008 Rev. 5

- 92-014 Implement an algorithm to infer a sensor's quality status of "unknown" when the status of the sensor's ACROMAG unit or the ACROMAG Interface indicates that it is not receiving readings. Display sensor with a tbd [white] background. Add Alarm Status and last good reading time stamp to reports and files to SACS. See Test Step 3 for the SACS portion of this Change Request. (Test Procedure #1, Alarm Management, and Test Procedure #4, Reporting, handle other aspects of this change request).
- 93-047 Add SY Farm sensors to TMACS, including hydrogen, pressure, vent flow, discrete alarms, and temperatures: structural and in-tank. See Test Case 5.3.
- 93-056 Add new Double-Shell Tank Data Logging. See Test Case 5.3.
- 92-065 Implement TMACS data recovery, through snapshot/warmboot or other means. In this release the format and file names of the continuous and discrete sensor history files have changed. See Test Procedure #5 for description and validation.

The following change requests were incorporated into Release 4.0 of TMACS:

- 94-023 Provide TMACS software to query SACS database for current Liquid Level. This will be used on C-106, until the Enraf level gauge is installed in this tank. See Test Case 5.4.

### 3.0 TESTER INFORMATION

The TMACS system is an application built using the G2 Real-Time, Expert System. The tester should be familiar with the basic point-and-select method, via a "mouse", that G2 uses to access information "windows". The instructions for using the mouse and mouse buttons are given below.

The tester should also have a basic understanding that G2 runs under the UNIX operating system and that part of this test requires the tester to access UNIX and execute some simple commands. The test administrator will be available to assist the tester if necessary.

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 the left and right mouse buttons as if they were a single button. Whenever the use of a mouse button is required the user is free to use either of these buttons.

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

May 26, 1994

TP008 Rev. 5

- 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 any part of a TMACS window will bring that window to the top of the 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.

In addition, the keyboard command Control-C can be used when the screen becomes unreadable or objects overwrite each other. By typing Control-C (hold down the "Control" then press the "C" key), the screen will be redrawn.

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

This test procedure uses the software developed for production use, and can be identified 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).

This test procedure tests the functioning of G2 report creation and Unix cron table for the TMACS user. This test requires that the TMACS system has been running the day before and functioning properly. The test administrator should verify this ahead of time so that the proper data files will be generated. It is also assumed that the TMACS workstations and software have been brought up, as explained in Test Procedure 7.

In the production environment the single-shell tank and alarm history reports are generated shortly after midnight. The double-shell tank report is generated at 6:00 AM, 2:00 PM and 10:00 PM.


The SACS system administrator should suspend the data file transfer program which takes the data files out of the "/TMACS\_disk/G2-SACS/SACS" directory. This can be done by unmounting the TMACS production file system from the SACS server.

**Note:** If this test is run on the Production system make that TMACS is not left in simulation mode overnight and that the tanks to be included on the report can be enabled otherwise they will not appear on the report. If that is not the case you will have to run this test procedure on the Development System. If this test is run on the Development system you can leave TMACS in simulation mode overnight with all tanks enabled.

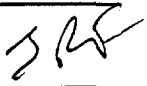
**5.0 TEST STEPS WITH EXPECTED RESULTS**

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

**5.1 Initialization**

1	<p>Before starting this test make sure that Test Procedure #4 and Test Procedure #5 have been performed in their entirety. A by-product of those test procedures is that they generate and move all the TMACS data files to the SACS directory. After you have verified their successful execution have the test administrator bring up a UNIX command tool window on the TMACS production system and examine directory /TMACS_disk/G2-SACS/SACS for the presence of at least one non-zero length file matching each of the following filename templates:</p> <p style="text-align: center;">almhst_YYYY_MMDD_HHmm.dat,                  equip_fail_YYYY_MMDD_HHmm.dat,                  continuous_sensor_history_YYYY_MMDD.ascii,                  discrete_sensor_history_YYYY_MMDD.ascii,                  sst_data_YYYY_MMDD_HHmm.rdbms, and                  dst_data_YYYY_MMDD_HHmm.rdbms.</p> <p>where YYYY is the year, MM is the month, DD is the day, and HH and mm are the hours and minutes, respectively. The date and time should be after the starting date designated by the test administrator.</p>	
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**5.2 Single-Shell Tank Once-a-day file**

2	<p>The test administrator shall display the most current "sst data..." file.</p>	
---	--	---

STEP	DESCRIPTION	VERIFY
3	<p>Verify that the fields in the file records match the fields in the example given below (where the fields are separated by the special character " "):</p> <p>Note: The tag name given in the example below is one specific type of tag name, so it may not resemble some of the tag names in the file.</p> <p>8-14-1992   15:07:20   BY110-TI-R001-01   32.0   F   GOOD                        NORMAL   14 Aug 92 3:07:20 p.m.</p> <p>The report file record format is: date record written to file, time record written to file, sensor tag name, reading value, units of measure, sensor quality status of the sensor (either GOOD or UNKNOWN), alarm state of the sensor (either NORMAL or ALARM), date and time of the last good reading (sensor had a quality status of GOOD).</p> <p>Note: The date and time that the record was written to the file can be (and usually is) different from the date and time of the last good reading.</p>	<p><i>JK</i></p>

5.3 Double-Shell Tank Once-a-Shift file

4	<p>The test administrator shall display the most current "dst data..." file.</p>	<p><i>JK</i> NO data</p>
---	--	--------------------------

STEP	DESCRIPTION	VERIFY
5	<p>Verify that the fields in the file records match the fields in the example given below (where the fields are separated by the special character " "):</p> <p>Note: The tag name given in the example below is one specific type of tag name, so it may not resemble some of the tag names in the file.</p> <p>8-14-1992   15:07:20   BY110-TI-R001-01   32.0   F   GOOD                        NORMAL   14 Aug 92 3:07:20 p.m.</p> <p>The report file record format is: date record written to file, time record written to file, sensor tag name, reading value, units of measure, sensor quality status of the sensor (either GOOD or UNKNOWN), alarm state of the sensor (either NORMAL or ALARM), date and time of the last good reading (sensor had a quality status of GOOD).</p> <p>Note: The date and time that the record was written to the file can be (and usually is) different from the date and time of the last good reading.</p>	<p>N/A                      No data                      - see Test Log</p>

5.4 SACS Surface Level Interface

6	<p>Select a tank that is configured in TMACS with level indication. (If needed, have the test administrator run Inspect with the command "display a table of the names and tank of every level-sensor" to find out which tanks have level indication).</p> <p>Record the sensor and tank names.</p> <p>Sensor <u>C106</u>. level sensor</p> <p>Tank <u>C106</u>.</p>	<p>P 106</p>
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May 26, 1994

TP008 Rev. 5

STEP	DESCRIPTION	VERIFY
7	<p>Obtain the current SACS surface level information for the selected tank, either from the SACS system administrator or directly from the PC Interface.</p> <p>Record the following SACS surface level information:</p> <p>Current level      <u>69.6</u>      69.6</p> <p>Susp data_stat_code      <u>G</u>      G</p> <p>collection_type Sensor_type_name      <u>Auto fic.</u>      Auto fic</p> <p>Reading date &amp; time Dttm_asc      <u>6/2/94 7:03 am</u>      6/2/94 7:03 am</p>	<p>JRF</p>
8	<p>On the Hanford Tank Farm Facilities window, click on the tank icon for the selected tank. Record the TMACS surface level value next to the SACS level value in the previous step.</p>	<p>JRF</p>
9	<p>Verify that the TMACS and SACS values recorded in Step 7 agree with one another.</p>	<p>JRF</p>

**REFERENCES:**

"TMACS I/O Termination Point Listing", WHC-SD-WM-TI-594 Rev. 0, C. C. Scaief, Instruments and Control Engineering, October 18, 1993.

**ATTACHMENTS:**

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

### ACCEPTANCE SHEET

TEST PROCEDURE NUMBER: TP008

DATE: 6/6/94

ORGANIZATION NAME: PRM C+WMS

ORG#: 62610

**EXCEPTION SHEETS FOR THIS TEST PROCEDURE:**

TESTER	WITNESS	STEP	DATE	RESOLVED
<u>(C)</u>	<u>JRF</u>	<u>None</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>Connie Dimery</u>	<u>6/6/94</u>
TMACS Software Test Procedure Tester	Date
<u>John Ficar</u>	<u>6/6/94</u>
TMACS Software Test Procedure Witness	Date
<u>Steven J Washburn</u>	<u>6/6/94</u>
TMACS Software Test Procedure Software Engineer	Date
<u>Dave Spurling</u>	<u>6/6/94</u>
DG Spurling, TMACS Software Project Manager	Date
<u>C. P. Scaief</u>	<u>6-7-94</u>
CC Scaief, TMACS Program Engineer	Date

### EXCEPTION SHEET

TEST PROCEDURE NUMBER: TP008      STEP#: \_\_\_\_\_      DATE: \_\_\_\_\_

**DESCRIPTION:**

None  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESOLUTION:** \_\_\_\_\_      **DATE RESOLVED:** \_\_\_\_\_

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

**APPROVAL:**

Connie J. [Signature]      6/6/94  
TMACS Software Test Procedure Tester      Date

[Signature] John Freer      6/6/94  
TMACS Software Test Procedure Witness      Date

Steven J. Washburn      6/6/94  
TMACS Software Test Procedure Software Engineer      Date

[Signature] Dave Spurling      6/6/94  
DG Spurling, TMACS Software Project Manager      Date

[Signature]



### 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: TP008

*Surveillance + data acquisition Temp*  
*Connie F Jimenez* *Connie Jim* *CFJ* *6/6/94*  
 Tester / Organization Initials Date

*[Signature]* *John Freer* *JFM* *JCF* *6/6/94*  
 Witness / Organization Initials Date

*Steven J Washburn* *SJW* *6/6/94*  
 TMACS Software Test Procedure Software Engineer Initials Date

*Dave Spurling* *DS* *6/6/94*  
 DG Spurling, TMACS Software Project Manager Initials Date

\_\_\_\_\_  
 Name / Organization Initials Date

\_\_\_\_\_  
 Name / Organization Initials Date

\_\_\_\_\_  
 Name / Organization Initials Date

May 26, 1994

TP008 Rev. 5

### TEST LOG

TEST PROCEDURE NUMBER: TP008

Date: 6/4/96

TESTER: Go

WITNESS: JLF

#### TEST LOG NOTES:

Step 5 - no double shell ~~data~~ data  
(Next release is scheduled to add AN and possibly SY Farms)

#### COMMENTS: