ENGINEERING CHANGE NOTICE

1. ECN 196862

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Proj.
ECN

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				10. Related PO No.	
11a. Modification Work [] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)		11b. Work Package No. N46G1 N/A		11c. Modification Work Complete <i>David L. Evans</i> N/A Cog. Engineer Signature & Date	
				11d. Restored to Original Condition (Temp. or Standby ECN only) 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).					
13a. Justification Criteria Change [X] Design Improvement [] Environmental [] As-Found [] Facilitate Const. [] Const. Error/Omission [] Design Error/Omission []					
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					
14. Distribution (include name, MSIN, and no. of copies) See Distribution Sheet				RELEASE STAMP OFFICIAL RELEASE BY WHC DATE AUG 25 1994 574 4	

RELEASE AUTHORIZATION

Document Number: WHC-SD-WM-TRP-111, REV 5

Document Title: TMACS TEST PROCEDURE TP007: SYSTEM ADMINISTRATION

Release Date: 8/25/94

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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 19

2. Title TMACS Test Procedure TP007: System Administration	3. Number WHC-SD-WM-TRP-111	4. Rev No. 5
5. Key Words Software, Test Procedure, Tank Monitor and Control System, TMACS Software Project APPROVED FOR PUBLIC RELEASE <i>KMB 8/25/94</i>	6. Author Name: PK Scanlan/SJ Washburn <i>Patrick Scanlan / Steven 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 System Administration functions.		
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9. Impact Level Q		

MASTER

RECORD OF REVISION

(1) Document Number

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(2) Title

Tank Monitor And Control System (TMACS) Software Project, Release 4.0
Test Procedure TP007, System Administration

CHANGE CONTROL RECORD

[illegible]

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TANK MONITOR AND CONTROL SYSTEM
(TMACS)

SOFTWARE PROJECT

TEST PROCEDURE TP007:
TMACS SYSTEM ADMINISTRATION/SECURITY

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6-7-94
CC Scaief TMACS Program Engineer	signature	Date
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5/26/94
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6/6/94
RB Bass IRM Manager	signature	Date

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1.0 TEST ITEMS

This test addresses the System Administration and Security requirements of TMACS. The test is composed of the following test cases:

Table 1. Test Cases

5.1	Starting the TMACS computer	5
5.2	Data Recovery	6
5.3	Operation of the Password Protection of Multiple User Modes	7
5.4	Restriction of Function and Action by User Mode	8
5.5	Sensor Labelling (tag id)	11
5.6	Exiting TMACS and Shutting Down the System	11

2.0 ACCEPTANCE CRITERIA AND REQUIREMENTS

The following acceptance criteria are from Section 7.0 of the TMACS Software Project: Acceptance Criteria. The Test Cases that satisfy these criteria are listed after each criteria item.

- 2.1 Sensors shall reference tag ID as supplied by the customer. Tag ID shall be up to 30 characters, with a description field of up to 40 characters. See Test Case 5.5
- 2.2 Provide multiple security levels that are password protected. See Test Case 5.3
- 2.3 Provide System Administrator the ability to assign the security level to access or modify various functions or actions, such as:
 - 2.3.1 tag create, delete, or modify
 - 2.3.2 graphics modification
 - 2.3.3 trend define or modify
 - 2.3.4 historical logging
 - 2.3.5 active/inactive point status
 - 2.3.6 active/inactive station polling
 See Test Case 5.4
- 2.4 Provide ability to "warm boot" TMACS using backup data from "snapshot" taken once per shift. See Test Case 5.2

Note that this requirement is affected by the Change Request number 92-065 (see below) which allows for other data recovery methods. Also note that Test Procedure 5 tests the logging of the data used by the Data Recovery utility.

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- 2.5 Provide capability to backup TMACS data (in the form of the TMACS "snapshot" file) to tape, once per day.

Note: TMACS currently logs data to disk daily, and fulfillment of the requirement to copy this log to tape is deferred to a later release.

The following Change Requests were incorporated into this or a previous software release:

- 92-015 Implement a "secured" G2, with the necessary user and developer modes. See Test Case 5.3
- 92-019 Implement TMACS User startup and shutdown for SPARCstation, UNIX, G2, and TMACS application. See Test Cases 5.1 and 5.6
- 92-067 Install Restricted-Use G2 software on production workstation; make any necessary software changes to work in this version of the software. See Test Case 5.3
- 92-065 Install Data Recovery module, and implement data logging for use by this Data Recovery utility. See Test Case 5.2

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 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:

- 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.
- 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

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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.

Three keyboard commands may be helpful to use in conjunction with this Test Procedure. If the screen becomes unreadable or objects overwrite each other the screen can be redrawn by typing Control-C. To test the password protection of user modes, type Control-Y to bring up the user mode selection screen. When editing text using any G2 text edit box, Control-X erases all text appearing before the cursor.

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), "/home/G2/BRIDGE/ACROMAG/acromag_brg" (which is the Acromag driver), "/home/G2/BRIDGE/PANALM/panalm_brg" (which is the Panalarm driver) and "/home/G2/BRIDGE/PRINTER/printer_brg" (which is the alarm printer driver). The TMACS Software Engineer participating in the test shall demonstrate this. In this test this software will automatically be installed and executed.

For Data Recovery testing, you must make sure that there are history files to read. The current day's files must be located in /TMACS disk/G2-SACS/CURRENT and all previous day's files must be put in: /TMACS disk/G2-SACS/HISTORY. The files must be named: 'continuous_sensor_history_1993_mmdd.ascii' and 'discrete_sensor_history_1993_mmdd.ascii'. Also, you must make sure that there are around 5,000 lines of data (between all the files) because the Data Recovery utility must run long enough for several test steps to be performed, and also part of the test involves waiting for the utility to complete reading all of the data.

5.0 TEST STEPS WITH EXPECTED RESULTS

STEP	DESCRIPTION	VERIFY
5.1 Starting the TMACS computer		
1	Power up both the 'Slave' and 'Master' TMACS workstations and monitors. Verify that both systems complete booting and a TMACS login screen is displayed.	EJB
2	On the Master workstation, enter "tmacs" for the login name on the login screen. Then enter the password, which the test administrator will supply. Verify that a window pops up with the message 'Starting the TMACS Operator Interface'.	EJB
3	Verify that the system automatically loads and starts the G2 software, and that when loading of G2 is completed a G2 login window appears.	EJB
4	In the G2 login window, edit the 'User Name' and 'G2 User Mode' attributes to be "t2-user". The Test Administrator will now enter the password. When done, select END.	EJB
5	Enter the TMACS login name of "tmacs" on the login screen of the Slave workstation. Then enter the password, which the test administrator will supply. Verify that the system automatically loads Telewindows and displays a Telewindows login box.	EJB
6	Repeat step 4 for the Slave/Telewindows workstation.	EJB

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STEP	DESCRIPTION	VERIFY
7	<p>Verify that the Acromag bridge and the alarm printer bridge have been started on the Slave workstation.</p> <p>The test administrator will run the UNIX command "ps - ax grep brg". You should then see the following processes running:</p> <pre> acromag_brg 22200 printer_brg 22555 panalm_brg 23000 (possibly two of these) </pre> <p><i>See Test Log</i></p>	<i>JB</i>

5.2 Data Recovery

8	<p>Verify that the green "Working" window appears with a message indicating that Data Recovery is running.</p> <p>Note to Test Administrator: If the "Working" window no longer appears, there may be no history files to read or they may be too short to keep the Data Recovery utility busy long enough to reach this step. If so, correct this and restart the knowledge base. The current day's files are located in /TMACS_disk/G2-SACS/CURRENT and all previous day's files are in /TMACS_disk/G2-SACS/HISTORY. The files are named: 'continuous sensor history 1993 mmdd.ascii' and 'discrete sensor history 1993 mmdd.ascii'.</p>	<i>JB</i>
9	<p>While the Working window is showing, the Test Administrator will change to Administrator mode and display some randomly selected Acromag-station objects.</p> <p>Verify that the Acromag-station objects are receiving values by watching the value expiration times. If an Acromag-station receives a value, the expiration time will change.</p> <p>Note to Test Administrator: If the working window no longer appears, get more history data for it to read and restart the knowledge base.</p>	<i>JB</i>

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STEP	DESCRIPTION	VERIFY
10	When the Working window disappears, the Test Administrator will use the type-in box and button on the Data Recovery Testing workspace to print the history of a randomly chosen sensor. <i>T111 TC 11</i> Verify that the sensor history contains values from before the current day.	JRP
11	The Test Administrator will now use the UNIX grep program to compile a list of records for the randomly chosen sensor from the sensor history files in either the /TMACS_disk/G2-SACS/CURRENT directory or the /TMACS_disk/G2-SACS/HISTORY directory. Verify that the records compiled from the files match the history entries printed using the Data Recovery Testing workspace in TMACS.	JRP
12	Repeat steps 10 and 11 for 3 more randomly chosen sensors, including at least one discrete sensor (if available). <i>BY 109 TI 1005-04, C108 R1 TC03, BY 112 TC 0</i> Verify that both steps check out for each sensor.	See Exception #2 A.15A discrete available Approved
13	Hide the workspaces used in the previous test case. The Test Administrator will now change TMACS back to t2-user mode before starting the next test case (remember to change the password also).	JRP

5.3 Operation of the Password Protection of Multiple User Modes

14	Type Control-Y and verify that the user mode selection window appears at the top center of the screen.	JRP
15	Edit the 'G2 user mode' to be "administrator". Click on the END button in the user mode selection window. Verify that TMACS does not enter administrator mode.	JRP

STEP	DESCRIPTION	VERIFY
16	Repeat step 15 for both "developer" and "engineer" user modes. Verify that in both cases TMACS does not allow this mode change.	YB
17	Edit the 'G2 user mode' to be "t2-user" and click on the END button in the text editing window. Verify that the user mode selection window disappears from the screen (indicating a successful login).	YB

5.4 Restriction of Function and Action by User Mode

18	Click on the Show Main Display button on the Control Panel. Verify that the following windows (and only the following windows) appear on the screen: Control Panel. Most Recent Alarm. Hanford Tank Farm Facilities.	YB
19	Attempt to move each of these three windows (by dragging using the left mouse button from points on the windows not occupied by objects such as buttons or labels). Verify that they do not move.	YB
20	Verify that you cannot move the title labels of each of these windows by dragging them with the mouse.	YB
21	Verify that you cannot move the date and time display by dragging it.	YB
22	Click anywhere in the empty space on each window. Verify that no menus appear.	YB
23	Verify that the following objects on the 'Hanford Tank Farm Facilities' window cannot be moved by dragging: - labels (farm and tank) - farm backgrounds - tank icons	YB
24	Verify that you cannot move the GOTO button on the Most Recent Alarm window.	YB

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STEP	DESCRIPTION	VERIFY
25	Click on the tank icon for any tank. Verify that the Tank Status window appears.	YB
26	Click on the Shrink Window button on the Tank Status window. Verify that the window size is reduced.	YB
27	Verify that you CAN move the Tank Status window by dragging it, but that you cannot move any part of it off of the edge of the screen.	YB
28	Click on the Expand Window button on the Tank Status window. Verify that the window size is increased.	YB
29	Click on the empty space in the background of the Tank Status window. Verify that no menu appears.	YB
30	Attempt to move several objects chosen at random on the Tank Status window by doing a click-and-drag. Verify that none of the objects move.	YB
31	Click on the digital display for any sensor. Verify that the trend window for that sensor appears.	
32	Click at random at several places on the TC Trend window. Verify that no menu appears.	YB
33	Attempt to move several objects chosen at random on the TC Trend window. Verify that none move.	YB
34	Click on the Hide Workspace button on the TC Trend window (button marked with an X). Verify that the window disappears.	YB
35	Click on the USER CONFIGURABLE TREND GRAPH button. "Temperature Trends" YB Verify that a User Configurable Trend Graph window appears.	YB

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STEP	DESCRIPTION	VERIFY
36	Click at random at several places on the User Configurable Trend Graph window. Verify that no menu appears.	EJB
37	Attempt to move several objects chosen at random on the User Configurable Trend Graph window. Verify that none move.	EJB
38	Click on the Hide Window button on the User Configurable Trend Graph window. Verify that the window disappears.	EJB
39	Click on the Hide Window button on the Tank Status window. Verify that the window disappears.	EJB
40	Click on the background of the Control Panel window. Verify that doing so brings the Control Panel to the top.	EJB
41	Click on the REPORTS button on the Control Panel. Verify that the Reports window appears.	EJB
42	Click at random at several places on the Reports window. Verify that no menu appears.	EJB
43	Attempt to move several objects chosen at random on the Reports window. Verify that none move.	EJB
44	Click on the Hide Window button on the Reports window. Verify that the window disappears.	EJB
45	Click on the CURRENT ALARMS button on the Control Panel. Verify that the Current Alarms window appears.	EJB
46	Click at random at several places on the Current Alarms window. Verify that no menu appears.	EJB

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STEP	DESCRIPTION	VERIFY
47	Attempt to move several objects chosen at random on the Current Alarms window. Verify that none move.	<i>cyB</i>
48	Click on the Hide Window button on the Current Alarms window. Verify that the window disappears.	<i>cyB</i>

5.5 Sensor Labelling (tag id)

49	The system administrator will put the system in Administrator mode and bring up a TC-Sensor table.	<i>cyB</i>
50	Verify that sensors can have a 30 character tag name and a 40 character descriptor.	<i>cyB</i>

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5.6 Exiting TMACS and Shutting Down the System

51	From the Master workstation, drag the TMACS display down to uncover the gray background window. Verify that an 'Exit TMACS' option is available from a pop-up menu activated by clicking the right mouse button on the gray background.	<i>cyB</i>
52	Select the 'Exit TMACS' option from this menu. Verify that the following message prompt appears: This will stop all of the TMACS programs You will have to log back in to restart Really exit TMACS operator interface ? [Y/N]	<i>cyB</i>

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STEP	DESCRIPTION	VERIFY
53	<p>Move the mouse pointer to the pop-up window and then respond to the query by entering "Y" followed by the <RETURN> key.</p> <p>Verify that both the TMACS Master and Slave workstations exit G2 and display the user login screen.</p>	YB
54	Repeat steps 2 through 6 to bring up the TMACS Application.	YB
55	<p>Uncover the gray background by moving the TMACS window.</p> <p>Verify that 'Shut down Entire System' is available from the pop-up menu obtained by clicking the right mouse button on the gray background.</p>	YB
56	<p>Select the 'Shut down Entire System' option from this menu.</p> <p>Verify that the following message prompt appears:</p> <p style="padding-left: 40px;">This will stop all of the TMACS programs and shut down both systems. You will have to boot up both systems and log in to restart.</p> <p style="padding-left: 40px;">Really shut down TMACS systems ? [Y/N]</p>	YB
57	<p>Move the mouse pointer to the pop-up window and then respond to the query by entering "Y" followed by the <RETURN> key.</p> <p>Verify that the Master and Slave workstations successfully shutdown by observing the text</p> <p style="padding-left: 40px;">Program terminated Type help for more information ok</p> <p>or by observing</p> <p style="padding-left: 40px;">Program terminated Type b (boot), c (continue), or n (new command mode) ></p> <p>Note: This text may not be displayed for 1 or 2 minutes.</p>	See exception page 15A

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STEP	DESCRIPTION	VERIFY
58	Power down the systems, shutting down the Slave first (monitor, then cpu), then the Master. Wait 15 seconds, then power up the workstations. Verify that the system returns both workstations to the TMACS login screens.	<i>EJB</i>

ATTACHMENTS:

Acceptance Sheet
Exception Sheets
Data/Verification Sheet
Test Log

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ACCEPTANCE SHEET

TEST PROCEDURE NUMBER: TP007

DATE: 6/6/94

ORGANIZATION NAME: IRM Chem + Waste Mgmt S/W Systems ORG#: 62610

EXCEPTION SHEETS FOR THIS TEST PROCEDURE:

TESTER	WITNESS	STEP	DATE	RESOLVED
		57	6/2/94	6/6/94
		12	6/2/94	6/6/94

COMMENTS:

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

APPROVAL:

Conne Himeray 6/6/94
TMACS Software Test Procedure Tester Date

PE Campbell for John Freer 6/7/94
TMACS Software Test Procedure Witness Date

Patrick Scanlan 6/6/94
PK Scanlan, TMACS Test Procedure Software Engineer Date

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

C.P. Sciaief 6-7-94
CC Sciaief, TMACS Program Engineer Date

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EXCEPTION SHEET

TEST PROCEDURE NUMBER: TP007

STEP#: 57

DATE: 6/2/94

DESCRIPTION:

#1 Attempt to shut down entire system from Slave resulted in shutdown of G-2 and Telewindows, but not shutdown of SNA-05 on the Slave

#2 Step 12 Aborted. due to internal error

RESOLUTION:

DATE RESOLVED: 6/6/94

#1 This problem was not introduced by this software release, but by the existing Unix command file. It will be handled as a problem report and given high priority.

#2 The test steps will be revised and pre-tested before the next release.

APPROVAL:

Connie J. Jener
TMACS Software, Test Procedure Tester

6/6/94
Date

John Freer
TMACS Software, Test Procedure Witness

6/7/94
Date

Patrick Scanlan
PK Scanlan, TMACS Test Procedure Software Engineer

6/6/94
Date

DG Spurling
DG Spurling, TMACS Software Project Manager

6/6/94
Date

May 24, 1994

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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: TP007

Connie Jimenez / Surveillance Temp Connie Jim CJ 6/2/94
Tester / Organization Initials Date

Ed Bourguignon / C+WMSS-SACS Ed Bourguignon EB 6/2/94
Witness / Organization Initials Date

Patrick K Scanlan PKS 6/6/94
PK Scanlan, TMACS Test Procedure Software Engineer Initials Date

Dave Spurling DS 6/2/94
DG Spurling, TMACS Software Project Manager Initials Date

Name / Organization Initials Date

Name / Organization Initials Date

Name / Organization Initials Date

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TEST LOG

TEST PROCEDURE NUMBER: TP007Date: 6/6/94TESTER: CAFWITNESS: JRK

TEST LOG NOTES:

Analog bridge software is not running. When the field connections are ready it will be started up. Af

Step 10 created error 138 140 Uninterrupted procedure execution time 'limit exceeded'!

It may be necessary to increase default time limit from 30 seconds to several minutes for sensors which have 30 day history. Suggest changing limit to 3 minutes.

G2 Aborted due to an internal error.

COMMENTS: