ENGINEERING DATA TRANSMITTAL

1. EDT 618268

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) G.J. Gauck/SY Tank Farm/77B31	4. Related EDT No.: 618266
5. Proj./Prog./Dept./Div.: HMT SY-101 Mitigation	6. Design Authority/ Design Agent/Cog. Engr.: Cog Eng. G.J. Gauck	7. Purchase Order No.: N/A
8. Originator Remarks: THIS DOCUMENT IS BEING TRANSMITTED FOR APPROVAL AND RELEASE		9. Equip./Component No.: TEST STRATEGY SOFTWARE VER, 3.04
		10. System/Bldg./Facility: N/A
11. Receiver Remarks: 11A. Design Baseline Document? [X] Yes [] No		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 9/20/96

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 Desig- nator	Reason for Trans- mittal	Origi- nator Dispo- sition	Receiv- er Dispo- sition
1	WHC-SD-WM-ATR-183	All	0	ACCEPTANCE TEST PROCEDURE for 241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY, VERSION 3.04		Q	1	1,2	

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) Rea- son	(H) Disp.	(J) Name	(K) Signature (L) Date (M) MSIN	(G) Rea- son	(H) Disp.	(J) Name	(K) Signature (L) Date (M) MSIN
1	/	Design Authority W. G. Brown	WGBrown 9/11/96 T407	3	/	Training D.W. Lamastus	signed for Lamastus AEH 9/18/96
1	/	Cog. Eng. G. J. Gauck	GJ Gauck 9-6-96 T404	1	/	OTHER A.M. Ermi	signed for Ermi AEH 9/18/96 H438
1	/	Cog. Mgr. T. A. Erickson	Erickson 9/8/96 T404	1	/	Peer Rvw. D.C. Larsen	DC Larsen 9-18-96
1	/	QA R. R. True	R.R. True 9-10-96 T408	3	/	Central Files A3-88	
3	/	Safety L. S. Krogsrud	LS Krogsrud 9/12/96				

18. GJ GAUCK 9-9-96 Signature of EDT Date Originator	19. Authorized Representative Date for Receiving Organization	20. Design Authority by WGBrown 9/18/96 Date TA ERICKSON 9/18/96 Design Authority/ Date Cognizant Manager	21. DOE APPROVAL (if required) Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (05/96) GEF097

Ⓢ

Acceptance Test Report for 241-SY-101 DACS Software Upgrade to Test Strategy, Version 3.04

G. J. Gauck
WHC Hanford, Richland, WA 99352
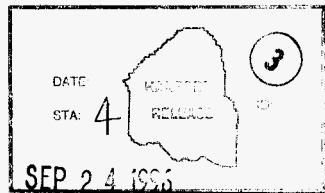U.S. Department of Energy Contract DE-AC06-87RL10930

Abstract: This Acceptance Test Report (ATR) will summarize the results of performing ATP-183 which tested the modifications to the DACS Test Strategy software.

DATE   Ⓙ
STA: 4   RELEASE

SEP 2 4 1996

Release Approval   Date
Release Stamp

Approved for Public Release

A-6400-073 (10/95) GEF321

**ACCEPTANCE TEST REPORT for
241-SY-101 DACS SOFTWARE
UPGRADE TO TEST STRATEGY, VERSION 3.04**

**WHC-SD-WM-ATR-183
REVISION 0**

SEPTEMBER 1996

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1.0 PURPOSE/SCOPE

The purpose of this Acceptance Test Report (ATR) is to summarize the results of the Acceptance Test Procedure (ATP) WHC-SD-WM-ATP-183, 241-SY-101 DACS Software Upgrade To Test Strategy Version 3.04.

2.0 SUMMARY OF WHC-SD-WM-ATP-183

Testing commenced on 9/3/96 and was completed on 9/4/96.

The completed procedure is contained in section 6.0 of the ATP. The associated tables contained the results and signatures verifying completion and results.

Two test exceptions were noted. See Test Exception List on next to last page of ATP.

One Engineering Change Notice (ECN) was generated. ECN 624778 to note additional testing required for FTIR ammonia instrument and PHOTO ammonia instrument as identified in the test exceptions.

Retest was required to address the two test exceptions. Retest was satisfactory.

The remainder of this Acceptance Test Report (ATR) consists of the ATP pages which describes the tests that were conducted at attest to the results that were obtained. The testing was accomplished successfully.

3.0 ACCEPTANCE TEST PROCEDURE FOR 241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY, VERSION 3.04

AUG 15 1996   ENGINEERING DATA TRANSMITTAL | 1. EDT 618266   Page 1 of 5

2. To: (Receiving Organization) DISTRIBUTION	3. From: (Originating Organization) G.J. GAUCK/SY TANK FARM/77331	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: HMT SY-101 MITIGATION	6. Cog. Engr.: G. J. GAUCK	7. Purchase Order No.: N/A
8. Originator Remarks: N/A		9. Equip./Component No.: TEST STRATEGY SOFTWARE, VER. 3.04
		10. System/Bldg./Facility: N/A
11. Receiver Remarks: N/A		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 8/2/96

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-WM-ATP-183		0	241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY VERSION 3.04	N/A Q	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 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved 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	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
1	1	Cog.Eng. G. J. GAUCK		8-14-96	71-07	PEER RVW: D. C. LARSEN			T4-08	1	1
1	1	Cog. Mgr. T. A. ERICKSON		8/6/96	T4E	OTHER: A. M. ERMI		8/15/96		1	1
1	1	QA R. R. TRUE		8/14/96		W. C. BROWN		8-15-96	T4-07	1	1
3	1	Safety L.S. KROGSRUD		8/13/96	T4-07						
		Env.									
3		TRAINING: D.W. LAMASTUS		8/12/96	R3-84	Central Files			A3-28	3	

18. G.J. GAUCK [signature] 8-13-96 Date Signature of EDT Originator	19. Authorized Representative Date for Receiving Organization	20. T.A. ERICKSON [signature] 8/6/96 Cognizant Manager Date TAE	21. DOE APPROVAL (if required) Ctrl. No. N/A [ ] Approved [ ] Approved w/comments [ ] Disapproved w/comments

BD-7400-172-2 (04/94) GEF097

-ATR-
WHC-SD-WM-183, Rev 0
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BEST AVAILABLE COPY

BD-7400-172-1

UNREVIEWED SAFETY QUESTION SCREENING/DETERMINATION FORM (Per WHC-IP-0842)	Page 1 of 4
	USQ Tracking No. TF-96-0579
	Rev. REV.0

AREA: [] East [X] West [] General

Facility: [] 242-A   [X] DST   [] SST   [] LERF
          [] Aging Waste [] Other

ECN No.   PCA No.

Work Pkg No.   Other (Specify) EDT: WHC-SD-WM-ATP-183

TITLE: 241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY, VERSION 3.04

Description of the Proposed Activity/REPORTABLE OCCURRENCE or PIAB:

Upgrade the DACS Test Strategy to provide improved and definitive visual indicators for computer display screens as requested by the Operators of the Mixer Pump in West Tank Farms.

Introduction:

The proposed activity provides better Tank 241-SY-101/Data Acquisition and Control System (DACS) computer display/screen indications of alarm and abort conditions associated with operating the mixer pump to mitigate flammable gases.   The new software revision (Test Stategy Version 3.04) provides for each of the DACS tags listed on the MININ1 and MININ2 screens but does not change or alter in any way the alarm or abort setpoints. If problems are encountered which cannot be corrected, then the new version of the software will not be installed in the DACS computers and therefore will not interrupt pump operations. Previously Acceptance Test Procedure (ATP), WHC-SD-WM-ATP-082 for Test Strategy Version 3.03, approved software will be used should the new software not pass its own ATP.

Scope:

Recent modifications/upgrades to the DACS Test Strategy software, Version 3.03A, have been requested to provide a more definitive visual indication on the MININ1 and MININ2 screens of instrument problems, alarms and abort conditions. The new revision to the software (Ver.3.04) provides the associated instrument has a problem, alarm, or abort condition. In addition, the DACS tags associated with gas monitoring have been modified to display "0.0" when the insturments fail, instead of retaining the last known good value.

Associated with these modifications is an additional problem alarm that was added for the GC2-H2 instrument. Since the GC1-H2 and GC2-H2 are both RGA-5 instruments, the GC1-INST block (including connnections) were copied to create the new GC2-INST problem alarm block. This acceptance test procedure will implement and verify the new modifications that have been developed in the updated DACS Test Strategy software (Ver. 3.04).

Authorization Basis:

LA-UR-92-3196, REV.14A, A SAFETY ASSESSMENT FOR PROPOSED PUMP MIXING OPERATIONS TO MITIGATE EPISODIC GAS RELEASES IN TANK 241-SY-101: HANFORD SITE, RICHLAND, WASHINGTON.

Conclusion:

A-6001-203 (06/96) GEF289

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UNREVIEWED SAFETY QUESTION SCREENING/DETERMINATION FORM (Continued)	USQ Tracking No. TF-96-0579
	Rev. REV.0

The revision to the software TEST Strategy is necessary to implement West Tank Farm Operator's recommendation's when pump/instrument signals indicate a problem, alarm, or abort condition. Additionally, the DACS tags associated with gas monitoring will be modified to display a "0.0" reading when those instruments fail, instead of retaining the last known good value.

References

N/A

USQ Screening:

A. Does the PROPOSED ACTIVITY represent a change to the facility as described in the AUTHORIZATION BASIS?

[X] No   [] Yes   [] N/A

Basis: The authorization basis (LANL Safety Assessment for Proposed Mixer Pump Operation, LAUR-92-3196 REV.14A, referred hereafter as SA), documents the alarm and abort setpoints which have been successfully tested and reported following installation of the mixer pump under document "101-SY Post Pump-Installation Acceptance Test Report" WHC-SD-WM-ATR-058". The proposed activity, "241-SY-101 DACS Software Upgrade to Test Strategy Version 3.04", WHC-SD-WM-ATP-183, will not change the facility previously accepted software under WHC-SD-WM-ATR-058 and as described in the Authorization Basis.

B. Does the PROPOSED ACTIVITY represent a change to procedures as described in the AUTHORIZATION BASIS?

[X] No   [] Yes   [] N/A

Basis: The proposed activity of performing WHC-SD-WM-ATP-183 will not change the previously successfully completed procedures (WHC-SD-WM-ATR-058) as described in the Authorization Basis.

C. Does the test or experiment represent a test or experiment not described in the AUTHORIZATION BASIS documentation?

[X] No   [] Yes   [] N/A

Basis: The test using WHC-SD-WM-ATP-183 does not affect the authorization basis and is not described in the authorization basis.

D. Does the PROPOSED ACTIVITY or REPORTABLE OCCURRENCE, impact:

- OSRs or IOSRs?
- Approved IOSR Compliance Implementation Plan?

[X] No   [] Yes   [] N/A

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UNREVIEWED SAFETY QUESTION SCREENING/DETERMINATION FORM (Continued)	USQ Tracking No. TF-96-0579
	Rev. REV.0

Basis: The proposed activity is not identified nor impacts the OSRs, IOSRs or approved IOSR Compliance Implementation Plan.

E. Does the REPORTABLE OCCURRENCE or PIAB involve analytical errors, omissions, and/or deficiencies in the AUTHORIZATION BASIS?

[] No   [] Yes   [X] N/A

Basis: The proposed activity does not involve analytical errors, ommisions, and/or deficiencies in the authorization basis. The modifications to be tested under the ATP only enhances the existing operations understanding for operating the mixer pump at Tank 241-SY-101.

USQE No. 1   GREGORY J GAUCK
 Print Name

Signature _____   Date 8-1-96.

USQE No. 2   WARREN G BROWN
 Print Name

Signature _____   Date 8/8/96

IF "YES", USQE CONTINUE WITH DETERMINATION BELOW

USQ DETERMINATION:

1. Could the PROPOSED ACTIVITY or USQ ISSUE significantly increase the frequency of occurrence of an accident previously evaluated in the AUTHORIZATION BASIS?

   [] No   [] Yes/Maybe

   Basis:

2. Could the PROPOSED ACTIVITY or USQ Issue significantly increase the consequences of an accident previously evaluated in the AUTHORIZATION BASIS?

   [] No   [] Yes/Maybe

   Basis:

3. Could the PROPOSED ACTIVITY or USQ ISSUE significantly increase the frequency of occurrence of a malfunction of EQUIPMENT IMPORTANT TO SAFETY previously evaluated in the AUTHORIZATION BASIS?

   [] No   [] Yes/Maybe

   Basis:

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UNREVIEWED SAFETY QUESTION SCREENING/DETERMINATION FORM (Continued)	USQ Tracking No. TF-96-0579
	Rev. REV.0

4. Could the PROPOSED ACTIVITY or USQ ISSUE significantly increase the consequences of a malfunction of EQUIPMENT IMPORTANT TO SAFETY previously evaluated in the AUTHORIZATION BASIS?

[] No   [] Yes/Maybe

Basis:

5. Could the PROPOSED ACTIVITY or USQ ISSUE create the possibility of an accident of a different type than any previously evaluated in the AUTHORIZATION BASIS?

[] No   [] Yes/Maybe

Basis:

6. Could the PROPOSED ACTIVITY or USQ ISSUE create the possibility of a malfunction of EQUIPMENT IMPORTANT TO SAFETY of a different type than any previously evaluated in the AUTHORIZATION BASIS?

[] No   [] Yes/Maybe

Basis:

7. Could the PROPOSED ACTIVITY or USQ ISSUE reduce the margin of safety for any OSR/IOSR as defined in the AUTHORIZATION BASIS?

[] No   [] Yes/Maybe

Basis:

8. Does the PROPOSED ACTIVITY or USQ ISSUE require a new or revised OSR/IOSR (including compensatory measures required by a Compliance Implementation Plan)?

[] No   [] Yes/Maybe

Basis:

USQE No. 1 _____ N/A _____   USQE No. 2 _____ N/A _____
                    Print Name   Print Name

_____   _____   _____   _____
Signature   Date   Signature   Date

PRC REVIEW

Meeting No.: _____   Date _____

PRC Chairman Concurrence: _____   _____
                          Signature   Date

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(2) Title

241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY, VERSION 3.04

		CHANGE CONTROL RECORD		Authorized for Release	
(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages			(5) Cog. Engr.	(6) Cog. Mgr. Date
0	(7) Initial revision. approval EDT 618266			NA	NA
RS 0A	1. Replace: _Per ECN-624778_ Table 1: MININ SCREEN TAGS TEST, page 14			GJ GAUCK _GJ Gauck._	TA ERICKSON _TA Erickson_ 9-5-96.

241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY, VERSION 3.04

G. J. GAUCK
WHC, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 618266   UC: uc-2030
Org Code: 77 B31   Charge Code: N 1734
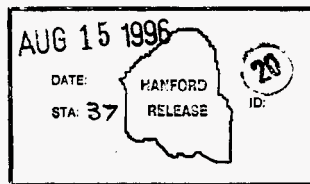B&R Code: EW31 Z007 1   Total Pages: ~~45~~ 47

Key Words: DATA ACQUISITION AND CONTROL SYSTEM (DACS), 101-SY, DACS LABORATORY, TEST STRATEGY, SOFTWARE UPGRADE

Abstract: This ATP will perform testing of the modifications to the DACS Test Strategy Software.

AUG 15 1996
DATE: HANFORD
STA: 37   RELEASE
ID:

Release Approval   _Bishop_   8-15-96
Release Stamp   Date

Approved for Public Release

A-6400-073 (10/95) GEF321

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241-SY-101 DACS SOFTWARE
UPGRADE TO TEST STRATEGY, VERSION 3.04

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REVISION 0

JULY 1996

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1.0 PURPOSE/SCOPE

Recent modifications/upgrades to the Data Acquisition and Control System (DACS) Test Strategy software, Version 3.03a, have been requested to provide a more definitive visual indication on the MININ1 and MININ2 screens of instrument problems, alarms, and abort conditions. The new revision to the software (Ver. 3.04) provides for each of the DACS tags listed on the MININ1 and MININ2 screen to display "RED" when the associated instrument has a problem, alarm, or abort condition. In addition, the DACS tags associated with gas monitoring have been modified to display "0.0" when those instruments fail, instead of retaining the last known good value.

Associated with these modifications is an additional problem alarm that was added for the GC2-H2 instrument. Since the GC1-H2 and GC2-H2 are both RGA-5 instruments, the GC1-INST block (including connections) were copied to create the new GC2-INST problem alarm block. This acceptance test procedure will implement and verify the new modifications that have been developed in the updated DACS Test Strategy software, version 3.04.

2.0 REFERENCES

2.1 LAUR-92-3196, "Safety Assessment for Proposed Pump Operation to Mitigate Episodic Gas Releases in Tank 241-SY-101"

2.2 WHC-SD-WM-PLN-081, *Mixer Pump Long Term Operations Plan for Tank 101-SY Mitigation*

2.3 WHC-SP-0708, *WHC Conduct of Operations Manual*

2.4 WHC-SD-WM-MA-014, *Mitigation Test Management Plan*

2.5 WHC-CM-1-10, *Safety Manual*

2.6 WHC-CM-3-10, *Software Practices*, SP-3.3, "Testing"

2.7 WHC-CM-3-10, *Software Practices*, SP-6.4, "Document Approvals"

2.8 WHC-CM-3-10, *Software Practices*, Appendix J, "System Test Documentation"

2.9 WHC-CM-4-40, *Industrial Hygiene Manual*

2.10 WHC-CM-6-1, *Standard Engineering Practices*, EP-1.12, "Supporting Document Requirements"

2.11 WHC-CM-6-1, *Standard Engineering Practices*, EP-4.2, "Testing Requirements"

2.12 WHC-IP-1026, *Engineering Practice Guidelines*, Appendix M, "Acceptance Test Procedures and Reports"

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3.0 RESPONSIBILITIES

The following personnel will be required for the performance of this procedure:

- <u>Test Manager</u>: The individual assigned direct responsibility for the performance, preparation, and adequacy of the test.

- <u>Test Director</u>: The engineer assigned responsibility for performance of the test.

- <u>Test Engineer</u>: The engineer assigned to assist and relieve the Test Director during the performance of the test.

- <u>System Development Engineers</u>: The engineers assigned responsibility for the development and modification of the DACS software.

Only personnel designated by the Mitigation Testing Program Test Manager are allowed to direct testing per this procedure.

A Test Director is required to be present in the DACS laboratory in the 300 Area, Building 306E during testing. No field engineering support is required for this test. The DACS trailer and associated equipment are not required to accomplish this testing.

If, during testing, any indicated parameter, control function, or screen display is not correct or appears to be malfunctioning, then the engineer conducting this test shall make a determination as to the feasibility of continuing testing. In this case, since software testing will occur in the DACS laboratory it will not affect actual mixer pump motor operation and there will be no safety impact to continuing the test and completing corrective actions later. A record of all noted deficiencies will be kept on Attachment 1, "Exception List".

Changes to this procedure to correct technical errors, numbering errors, and other discrepancies will be corrected with Direct Revision ECN and shall receive the approval signatures appropriate to the impact level of the change.

4.0 DESCRIPTION OF THE SYSTEM

The DACS, which is housed in a trailer located just outside of the north fence at the SY tank farm, receives input signals from a variety of sensors located in and around the SY-101 tank. These sensors provide information such as:

- Tank vapor space and ventilation system H_2 concentration
- Tank waste temperature
- Tank pressure
- Operating pump parameters such as speed, flow, rotational position, discharge pressure, and internal oil temperature
- Strain (for major equipment)

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- Waste level

The output of these sensors is conditioned and transmitted to the DACS computers where these signals are displayed, recorded, and monitored for out-of-specification conditions. If abnormal conditions are detected, then, in certain situations, the DACS automatically generates alarms and causes the system to abort pump operations.

The DACS laboratory located in the 300 Area, building 306E, contains duplicate equipment and runs the same software as in the DACS trailer. The DACS laboratory is capable of receiving the same data sent to the DACS trailer through a Remote Supervisory Station (RSS).

The portions of the system to be tested include:

- MININ1 and MININ2 screen modifications and displays in response to simulated instrument problems, alarms, and abort signals that have been previously tested and approved.

- The GASSUM tags (GC-1 H2, GC-2 H2, GC-3 H2, FTIR N2O, FTIR NH3, and PHOTO NH3) revert to a display value indication of 0.0 when no file update is received within a set period of time.

The testing will be conducted in the DACS laboratory with the computers running the new version (3.04) of the Test Strategy software. Input from Operations will be provided during the conduct of this test. Testing can be accomplished in the DACS laboratory because the modifications being tested affect only the screen displays. No modifications were made to the instrument inputs, alarms, aborts, or instrument problem alarms and therefore they will not be required to be retested.

5.0 TEST CONDITIONS AND EQUIPMENT REQUIRED

5.1 The provisions of the following manuals apply to all work performed under this procedure:

- WHC-CM-1-10, *Safety Manual*
- WHC-CM-4-40, *Industrial Hygiene Manual*

5.2 Lock and Tag Control

No Lock and Tag is required to perform this testing.

5.3 Energized Equipment   N/A

No entry into energized equipment will be required for this test.

5.4 Jumpers and Lifted Leads   N/A

No leads will be required to be jumpered or lifted in this procedure.

5.5   Unexpected Alarms

The testing will be conducted at the DACS laboratory therefore unexpected alarms are not anticipated. If the testing causes an unexpected alarm to occur, the test will be suspended until the reason for the alarm can be understood and corrected. Resumption of testing will be at the discretion of the Test Director.

5.6   Prior to initiation of testing, the following items shall be verified:

5.6.1   As determined by the Test Director, a pre-job safety meeting, including a review of any applicable JHA, may be conducted in accordance with a Pre-Job Safety Meeting Form, per WHC-IP-0842, Waste Tank Project Administration, Section 15.3.

5.6.2   The new DACS Test Strategy software, Ver. 3.04, to be tested has been loaded into the DACS laboratory computer at station #5.

5.6.3   The latest approved version of the MODSOFT Programmable Logic Controller (PLC) software (Ver. 3.05) shall be loaded into the DACS laboratory computer at station #1 to support testing.

5.6.4   The DACS laboratory computers at station #1 and #5 shall be verified to be available to support testing activities, prior to the start of each day or shift of testing.

5.6.5   A stop watch or timer (watch) capable of measuring in seconds is available for timing the screen updates required.

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6.0 ACCEPTANCE TEST

6.1   Initial Instructions

6.1.1   If any step in this section cannot be successfully performed or results in an abnormal condition, then record a description of the condition in Attachment 1.

6.1.1.1   For each discrepancy recorded, enter an identifying number in the "EXCEPTION NUMBER" Column of Attachment 1.

6.1.1.2   Reproduce Attachment 1 as needed, and attach the additional pages to this procedure, to record all discrepancies noted during testing.

6.1.2   If determined by the Test Director, complete a pre-job briefing with all personnel that will be involved in testing per this section.

6.1.3   Ensure DACS laboratory computer stations #1 and #5 are operational and ready to support the testing.

6.1.4   The following basic strategy will be used to test the color change of the tag print for each DACS tag on the MININ1 and MININ2 screens.

The Low alarm, High alarm, and Problem alarm will be initiated in the order given as appropriate for the tag under test. Some tags may require only one, two, or all three alarms be tested as indicated in Table 1. The LOW, HIGH, and PROBLEM ALARM can be verified from the ALARM STATUS screen.

NOTE: The abort signal is not required to be tested (except for MIP00001 which only has an abort signal) since each abort limit is beyond the High/Low alarm set point and will not provide any noticeable changes to the MININ1 or MININ2 screens beyond what was tested by the High/Low alarms.

The "PROBLEM ALARM" shall be initiated by requiring the development system personnel to "Enable" the alarm and will be cleared by requiring the development system personnel to "Clear" the alarm.

6.2   At DACS laboratory station #5, access the MININ1 screen.

6.2.1   Request development system personnel to apply, using DACS laboratory computer #1, an input test signal within the value parameters listed in the "INPUT TO MODSOFT" column of Table 1 for each of the DACS tags found on the MININ1 screen. Each value is to be input in sequence as discussed in section 6.1.4 above.

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6.2.2   Wait at least the period of time given under the "Wait Time" (listed under Established Parameters) for each of the Dacs Tags being tested on the MININI screen.

6.2.3   Record the value displayed on the MININI screen for the tag being tested under the "MININI TAG VALUE READING" column of Table 1 and observe the "EXPECTED RESULTS".

6.2.4   If the "EXPECTED RESULTS" were satisfactorily observed, and the "MININI TAG VALUE READING" recorded was within the values given under the "INPUT TO MODSOFT" column, then initial each line in the "Initial" column as it is accomplished. Discrepancies shall be recorded in accordance with section 6.1.1 above.

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241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY, VERSION 3.04

TABLE 1: MININI1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININI1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
PIR17B04	-4.9 In. wg < INPUT < -1.5 In. wg	White	No	-1.9 inwg	A
	INPUT ≤ -4.9 In. wg	Red	LO LALM	-5.0 inwg	A
Established Parameters	-4.9 In. wg < INPUT < -1.5 In. wg	White	No	-1.9 inwg	A
Low Alarm: -4.9 In. wg High Alarm: -1.5 In. wg Problem Alarm: Yes	INPUT ≥ -1.5 In. wg	Red	HI HALM	7.2 inwg	A
Wait Time: ≥ 2 Sec.	-4.9 In. wg < INPUT < -1.5 In. wg	White	No	-1.9 inwg	A
	"ENABLE" Problem Alarm DIG	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
PIR11B01	-3.9 In. wg < INPUT < -1.5 In. wg	White	No	-3.6 inwg	A
	INPUT ≤ -3.9 In. wg	Red	LO LALM	-6.0 inwg	A
Established Parameters	-3.9 In. wg < INPUT < -1.5 In. wg	White	No	-3.6 inwg	A
Low Alarm: -3.9 In. wg High Alarm: -1.5 In. wg Problem Alarm: Yes	INPUT ≥ -1.5 In. wg	Red	HI HALM	-1.1 inwg	A
Wait Time: ≥ 2 Sec.	-3.9 In. wg < INPUT < -1.5 In. wg	White	No	-3.6 inwg	A
	"ENABLE" Problem Alarm DIG	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
FTE50001 Established Parameters Low Alarm: 425 CFM High Alarm: 675 CFM Problem Alarm: Yes Wait Time: ≥ 6 Sec.	425 CFM < INPUT < 675	White	No	622.71 cfm	A.
	INPUT ≤ 425 CFM LALM	Red	LO	0.00 cfm	A
	425 CFM < INPUT < 675	White	No	622.71 cfm	A
	INPUT ≥ 675 CFM HALM	Red	HI	934.07 cfm	A.
	425 CFM < INPUT < 675	White	No	622.71 cfm	A.
	"ENABLE" Problem Alarm DIG	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
FTE50002 Established Parameters Low Alarm: 425 CFM High Alarm: 675 CFM Problem Alarm: Yes Wait Time: ≥ 6 Sec.	425 CFM < INPUT < 675	White	No	475.32 cfm	A
	INPUT ≤ 425 CFM LALM	Red	LO	271.83 cfm	A.
	425 CFM < INPUT < 675	White	No	475.32 cfm	A
	INPUT ≥ 675 CFM HALM	Red	HI	678.81 cfm	A
	425 CFM < INPUT < 675	White	No	475.32 cfm	A
	"ENABLE" Problem Alarm DIG	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A.

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TABLE 1: MININI SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININI TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
FTE50003 Established Parameters Low Alarm: N/A High Alarm: N/A Problem Alarm: Yes Wait Time: ≥ 12 Sec.	"ENABLE" Problem Alarm	Red	N/A	N/A	A.
	"CLEAR" Problem Alarm	White	N/A	N/A	A.
GC1-H2 Established Parameters Low Alarm: N/A High Alarm: N/A Problem Alarm: Yes Wait Time: ≥ 30 Sec.	"ENABLE" ZVAL Problem Alarm DIG LALM	Red	N/A	N/A	A.
	"CLEAR" ZVAL Problem Alarm	White	N/A	N/A	A.
GC3-H2 Established Parameters Low Alarm: N/A High Alarm: N/A Problem Alarm: Yes Wait Time: ≥ 30 Sec.	"ENABLE" ZVAL Problem Alarm DIG LALM.	Red	N/A	N/A	A.
	"CLEAR" ZVAL Problem Alarm	White	N/A	N/A	A.

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
GC2-H2 Established Parameters Low Alarm: N/A High Alarm: N/A Problem Alarm: Yes Wait Time: ≥ 30 Sec.	"ENABLE" ZVAL Problem Alarm 016	Red	N/A	N/A	A
	"CLEAR" ZVAL Problem Alarm	White	N/A	N/A	A
NITKSY06 Established Parameters Low Alarm: 0.001 % High Alarm: 0.56% Problem Alarm: Yes Wait Time: ≥ 2 Sec.	0.001% < INPUT < 0.56%	White	No	0.5%	A
	INPUT ≤ 0.001% 016 LALM	Red	LO	0.09.	A
	0.001% < INPUT < 0.56%	White	No	0.5%	A
	INPUT ≥ 0.56% NALM	Red	HI	0.06%	A
	0.001% < INPUT < 0.56%	White	No	0.5%	A
	"ENABLE" Problem Alarm 016	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
NIR05A01	INPUT < 0.56%	White	No	~~0.1%~~ 0.3%	A
<u>Established Parameters</u>	INPUT ≥ 0.56% HALM	Red	HI	0.69%	A
Low Alarm: N/A	INPUT < 0.56%	White	No	0.5%	A.
High Alarm: 0.56%	"ENABLE" Problem Alarm DIG	Red	N/A	N/A	A
Problem Alarm: Yes					
Wait Time: ≥ 2 Sec.	"CLEAR" Problem Alarm	White	N/A	N/A	A
NITJSY06	INPUT < 0.56%	White	No	0.2%	A.
<u>Established Parameters</u>	INPUT ≥ 0.56% HALM	Red	HI	1.5%.	A.
Low Alarm: N/A	INPUT < 0.56%	White	No	0.2%	A.
High Alarm: 0.56%	"ENABLE" Problem Alarm DIG	Red	N/A	N/A	A
Problem Alarm: Yes					
Wait Time: ≥ 2 Sec.	"CLEAR" Problem Alarm	White	N/A	N/A	A.
NIR17B01	INPUT < 0.56%	White	No	0.1%	A.
<u>Established Parameters</u>	INPUT ≥ 0.56% HALM	Red	HI	0.6%	A
Low Alarm: N/A	INPUT < 0.56%	White	No	0.2%	A
High Alarm: 0.56%	"ENABLE" Problem Alarm DIG	Red	N/A	N/A	A
Problem Alarm: Yes					
Wait Time: ≥ 2 Sec.	"CLEAR" Problem Alarm	White	N/A	N/A	A

TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG ~~See EN 624778 (REV 01)~~	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
FT-NH3C <u>Established Parameters</u> Low Alarm: 0.0 PPM High Alarm: 3000 PPM Problem Alarm: No Wait Time: ≥ 30 Sec.	0.0 PPM < INPUT < 3000	White	No	100 ppm	A.
	INPUT ≤ 0.0 PPM *O16 Low*	Red	LO	0 ppm	A.
	0.0 PPM < INPUT < 3000	White	No	150 ppm	A.
	INPUT ≥ 3000 PPM *HALM*	Red	HI	3001 ppm	A.
	0.0 PPM < INPUT < 3000	White	No	100 ppm	A.
PHO-NH3 <u>Established Parameters</u> Low Alarm: N/A High Alarm: N/A Problem Alarm: Yes <u>Wait Time: ≥ 12 Sec.</u>	"ENABLE" Problem Alarm *O16*	Red	N/A	N/A	A.
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
FT-NH3C Established Parameters Low Alarm: 0.0 PPM High Alarm: 3000 PPM Problem Alarm: Yes (DACS Tag "FT-INST") Wait Time: ≥ 30 Sec.	0.0 PPM < INPUT < 3000	White	No	100 PPm	A
	INPUT ≤ 0.0 PPM	Red	LO	0 PPm	A
	0.0 PPM < INPUT < 3000	White	No	100 PPm	A
	INPUT ≥ 3000 PPM	Red	HI	3001 PPm	A
	0.0 PPM < INPUT < 3000	White	No	100 PPm	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
PHO-NH3 Established Parameters Low Alarm: N/A High Alarm: 1000 PPM (NH3-STACK) Problem Alarm: Yes Wait Time: ≥ 12 Sec.	0.0 PPM < INPUT < 1000	White	No	50 PPm	A
	INPUT ≥ 1000 PPM	Red	HI	1000 PPm	A
	0.0 PPM < INPUT < 1000	White	No	50 PPm	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
FT-NH3C Established Parameters Low Alarm: 0.0 PPM High Alarm: 3000 PPM Problem Alarm: Yes (DACS Tag "FT-INST") Wait Time: ≥ 30 Sec.	0.0 PPM < INPUT < 3000	White*	No	100 PPm	A
	INPUT ≤ 0.0 PPM	Red	LO	0 PPm	A
	0.0 PPM < INPUT < 3000	White	No	100 PPm	A
	INPUT ≥ 3000 PPM	Red	HI	3001 PPm	A
	0.0 PPM < INPUT < 3000	White	No	100 PPM	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
PHO-NH3 Established Parameters Low Alarm: N/A High Alarm: 1000 PPM (NH3-STACK) Problem Alarm: Yes Wait Time: ≥ 12 Sec.	0.0 PPM < INPUT < 1000	White	No	50 PPm	A
	INPUT ≥ 1000 PPM	Red	HI	1000PPm	A
	0.0 PPM < INPUT < 1000	White	No	50 PPm	A
	"ENABLE" Problem Alarm	— Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
WIR1BA01 Established Parameters Low Alarm: -317 μIn/In High Alarm: +317 μIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-317 μIn/In < INPUT < +317 μIn/In	White	No	$- C.2 \mu"/"$	
	INPUT ≤ -317 μIn/In LALM	Red	LO	$-513 \mu"/"$	
	-317 μIn/In < INPUT < +317 μIn/In	White	No	$-0.2 \mu"/"$	
	INPUT ≥ +317 μIn/In HALM	Red	HI	$451.8 \mu"/"$	
	-317 μIn/In < INPUT < +317 μIn/In	White	No	$-0.2 \mu"/"$	
	"ENABLE" Problem Alarm VERIBAC1	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	
WIR1BA02 Established Parameters Low Alarm: -317 μIn/In High Alarm: +317 μIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-317 μIn/In < INPUT < +317 μIn/In	White	No	$-0.2 \mu"/"$	
	INPUT ≤ -317 μIn/In LALM	Red	LO	$-513 \mu"/"$	
	-317 μIn/In < INPUT < +317 μIn/In	White	No	$-0.2 \mu"/'$	
	INPUT ≥ +317 μIn/In HALM	Red	HI	$451.8 \mu"/'$	
	-317 μIn/In < INPUT < +317 μIn/In	White	No	$- 0.2 \mu"/'$	
	"ENABLE" Problem Alarm WERIBAC2	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
WIR1BA03 Established Parameters Low Alarm: -317 μIn/In High Alarm: +317 μIn/In Problem Alarm: Yes Wait Time: ≥6 Sec.	-317 μIn/In < INPUT < +317 μIn/In	White	No	-0.2μ"/"	4
	INPUT ≤ -317 μIn/In LALM	Red	LO	-513μ"/"	4
	-317 μIn/In < INPUT < +317 μIn/In	White	No	-0.2μ"/"	4
	INPUT ≥ +317 μIn/In HALM	Red	HI	451.8μ"/"	4
	-317 μIn/In < INPUT < +317 μIn/In	White	No	-0.2μ"/"	4
	"ENABLE" Problem Alarm WIR1BA03	Red	N/A	N/A	4
	"CLEAR" Problem Alarm	White	N/A	N/A	4
WIR17C01 Established Parameters Low Alarm: -267 μIn/In High Alarm: +267 μIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-267 μIn/In < INPUT < +267 μIn/In	White	No	-0.2μ"/"	4
	INPUT ≤ -267 μIn/In LALM	Red	LO	-513μ"/"	4
	-267 μIn/In < INPUT < +267 μIn/In	White	No	-0.2μ"/"	4
	INPUT ≥ +267 μIn/In HALM	Red	HI	451.8μ"/"	4
	-267 μIn/In < INPUT < +267 μIn/In	White	No	-0.2μ"/"	4
	"ENABLE" Problem Alarm WIR17C01	Red	N/A	N/A	4
	"CLEAR" Problem Alarm	White	N/A	N/A	4

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
WIR17C02 Established Parameters Low Alarm: -267 μIn/In High Alarm: +267 μIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-267 μIn/In < INPUT < +267 μIn/In	White	No	-0.2μ"/"	A
	INPUT ≤ -267 μIn/In LALM	Red	LO	-513μ"/"	A
	-267 μIn/In < INPUT < +267 μIn/In	White	No	-0.2μ"/"	A
	INPUT ≥ +267 μIn/In HALM	Red	HI	451.8μ"/"	A
	-267 μIn/In < INPUT < +267 μIn/In	White	No	-0.2μ"/"	A
	"ENABLE" Problem Alarm WIR17C02	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
WIR12A01 Established Parameters Low Alarm: -145.5 μIn/In High Alarm: +145.5 μIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2μ"/"	A
	INPUT ≤ -145.5 μIn/In LALM	Red	LO	-513μ"/"	A
	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2μ"/"	A
	INPUT ≥ +145.5 μIn/In HALM	Red	HI	451.8μ"/"	A
	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2μ"/"	A
	"ENABLE" Problem Alarm WIR12A01	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
WIR12A02 Established Parameters Low Alarm: -145.5 μIn/In High Alarm: +145.5 μIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2 μ"/"	
	INPUT ≤ -145.5 μIn/In LALM	Red	LO	-513 "/"	
	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2 μ"/"	
	INPUT ≥ +145.5 μIn/In HALM	Red	HI	451.8 μ"/"	
	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2 μ"/"	
	"ENABLE" Problem Alarm WER12A02	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	
WIR12A03 Established Parameters Low Alarm: -145.5 μIn/In High Alarm: +145.5 μIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2 μ"/"	
	INPUT ≤ -145.5 μIn/In LALM	Red	LO	-513 "/"	
	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2 μ"/"	
	INPUT ≥ +145.5 μIn/In HALM	Red	HI	451.8 μ"/"	
	-145.5 μIn/In < INPUT < +145.5 μIn/In	White	No	-0.2 μ"/"	
	"ENABLE" Problem Alarm WER12A03	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	**INPUT TO MODSOFT**	**EXPECTED RESULTS**		**MININ1 TAG VALUE READING**	**INITIALS**
		TAG DISPLAY COLOR	**HI/LO ALARM ***		
WIR12A04 Established Parameters Low Alarm: -145.5 µIn/In High Alarm: +145.5 µIn/In Problem Alarm: Yes Wait Time: ≥ 6 Sec.	-145.5 µIn/In < INPUT < +145.5 µIn/In	White	No	-0.2µ"/"	_A._
	INPUT ≤ -145.5 µIn/In LALM	Red	LO	-513µ"/'	_A._
	-145.5 µIn/In < INPUT < +145.5 µIn/In	White	No	-0.2µ"/"	_A._
	INPUT ≥ +145.5 µIn/In HALM	Red	HI	451.8µ"/"	_A._
	-145.5 µIn/In < INPUT < +145.5 µIn/In	White	No	-0.2µ"/"	_A._
	"ENABLE" Problem Alarm WIR12A04	Red	N/A	N/A	_A._
	"CLEAR" Problem Alarm	White	N/A	N/A	_A._
ENRAF Established Parameters Low Alarm: N/A High Alarm: N/A Problem Alarm: Yes Wait Time: ≥ 6 Sec.	"ENABLE" Problem Alarm EZRAF	Red	N/A	N/A	_A._
	"CLEAR" Problem Alarm	White	N/A	N/A	_A._

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B01 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0 °F	
	INPUT ≤ 70.01 °F LALM TERITISCI	Red	LO	70.0 °F	
	70.01 °F < INPUT < 130 °F	White	No	100.0 °F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0 °F	
	70.01 °F < INPUT < 130 °F	White	No	100.0 °F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	
TIR17B02 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0 °F	
	INPUT ≤ 70.01 °F DIG LALM	Red	LO	70.0 °F	
	70.01 °F < INPUT < 130 °F	White	No	100.0 °F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0 °F	
	70.01 °F < INPUT < 130 °F	White	No	100.0 °F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B03 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	⟋ß
	INPUT ≤ 70.01 °F DIG TEMP B03 LALM	Red	LO	70.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≥ 130 °F HALM	Red	HI	136°F	A
	70.01 °F < INPUT < 130 °F	White	No	100°F	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
TIR17B04 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≤ 70.01 °F DIG LALM	Red	LO	70.5°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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		EXPECTED RESULTS		MININ1 TAG	
TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	TAG DISPLAY COLOR	HI/LO ALARM *	VALUE READING	INITIALS
TIR17B05 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.8F	A
	INPUT ≤ 70.01 °F DiG alm	Red	LO	70.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≥ 130 °F HALm	Red	HI	131.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0F	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
TIR17B06 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.8F	A
	INPUT ≤ 70.01 °F DiG alm	Red	LO	70.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≥ 130 °F HALm	Red	HI	131.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B07 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.8F	
	INPUT ≤ 70.01 °F DIG ALM	Red	LO	70.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	
TIR17B08 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≤ 70.01 °F DIG ALM	Red	LO	70.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	

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TABLE 1: MININ1 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ1 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B09	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≤ 70.01 °F LALM DIE	Red	LO	70.0°F	A
Established Parameters	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
Low Alarm: 70.01 °F	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	A
High Alarm: 130 °F	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
Problem Alarm: Yes	"ENABLE" Problem Alarm	Red	N/A	N/A	A
Wait Time: ≥ 6 Sec.	"CLEAR" Problem Alarm	White	N/A	N/A	A

NOTE: * = "HI" means received HIGH alarm, "LO" means received LOW alarm, "No" means no alarm signal received, "N/A" means not applicable.

6.2.5   Verify the MININ1 screen displayed appropriate colors for values as listed in Table 1:

Verified by: _A. Lauch_ _19-3-96_ .
(Test Director)   Date

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6.3   At DACS laboratory computer station #5, access the MININ2 screen.

       6.3.1   Request development system personnel to apply, using DACS laboratory computer #1, an input test signal within the value parameters listed in the "INPUT TO MODSOFT" column of Table 2 for each of the DACS tags found on the MININ2 screen (See NOTE below). Each value is to be input in sequence as discussed in section 6.1.4 above.

NOTE: MIP00001 tag - For this tag, the MININ2 screen color is toggled by an abort coil and there are no associated HIGH, LOW, or PROBLEM alarms. Toggling the abort coil will adequately test the MININ2 screen response of MIP00001.

PCR12A01 tag - For this tag, the MININ2 screen color is toggled by the PIR12A01 tag. To properly test the MININ2 screen response of PCR12A01, then toggle PIR12A01.

VR232050, VR232040, and ZIMPE112 tags - The status of these tags are based on the pump running and therefore they do not toggle to Red on the MININ2 screen. There is no function or response to test on these tags.

ARMGAMMA tag - For this tag, the MININ2 screen color is toggled by tripping any or all of the following three coils; ARMALARM, ARMABORT, and ARMFAIL.

       6.3.2   Wait at least the period of time given under the "Wait Time" (listed under <u>Established Parameters</u>) for each of the Dacs Tags being tested on the MININ2 screen.

       6.3.3   Record the value displayed on the MININ2 screen for the tag being tested under the "MININ2 TAG VALUE READING" column of Table 2 and observe the "EXPECTED RESULTS".

       6.3.4   If the "EXPECTED RESULTS" were satisfactorily observed, and the "MININ2 TAG VALUE READING" recorded was within the values given under the "INPUT TO MODSOFT" column, then initial each line in the "Initial" column as it is accomplished. Discrepancies shall be recorded in accordance with section 6.1.1 above.

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	**INPUT TO MODSOFT**	**EXPECTED RESULTS**		**MININ2 TAG VALUE READING**	**INITIALS**
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B10 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≤ 70.01 °F DIS LALM	Red	LO	70.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≥ 130 °F LALM	Red	HI	131.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
TIR17B11 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≤ 70.01 °F DIS LALM	Red	LO	70.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≥ 130 °F LALM	Red	HI	131.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	**INPUT TO MODSOFT**	**EXPECTED RESULTS**		**MININ2 TAG VALUE READING**	**INITIALS**
		TAG DISPLAY COLOR	**HI/LO ALARM ***		
TIR17B12 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≤ 70.01 °F NO ALM	Red	LO	70.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	
TIR17B13 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≤ 70.01 °F NO ALM	Red	LO	70.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	

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TABLE 2: MININ2 SCREEN TAGS TEST

DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B14 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	*signature*
	INPUT ≤ 70.01 °F *AIG LALM*	Red	LO	70.0°F	*signature*
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	*signature*
	INPUT ≥ 130 °F	Red	HI	131.0°F	*signature*
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	*signature*
	"ENABLE" Problem Alarm	Red	N/A	N/A	*signature*
	"CLEAR" Problem Alarm	White	N/A	N/A	*signature*
TIR17B15 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	*signature*
	INPUT ≤ 70.01 °F *AIG LALM*	Red	LO	70.0°F	*signature*
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	*signature*
	INPUT ≥ 130 °F *HLUM*	Red	HI	131.0°F	*signature*
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	*signature*
	"ENABLE" Problem Alarm	Red	N/A	N/A	*signature*
	"CLEAR" Problem Alarm	White	N/A	N/A	*signature*

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		TABLE 2: MININ2 SCREEN TAGS TEST			
DACS TAG	**INPUT TO MODSOFT**	**EXPECTED RESULTS**		**MININ2 TAG VALUE READING**	**INITIALS**
		TAG DISPLAY COLOR	**HI/LO ALARM ★**		
TIR17B16	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≤ 70.01 °F DIG LALM	Red	LO	70.0°F	A
Established Parameters	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
Low Alarm: 70.01 °F	INPUT ≥ 130 °F LALM	Red	HI	131.0°F	A
High Alarm: 130 °F					
Problem Alarm: Yes	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
Wait Time: ≥ 6 Sec.	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
TIR17B17	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≤ 70.01 °F DIG LALM	Red	LO	70.0°F	A
Established Parameters	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
Low Alarm: 70.01 °F	INPUT ≥ 130 °F HALM	Red	HI	131.0°F.	A
High Alarm: 130 °F					
Problem Alarm: Yes	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
Wait Time: ≥ 6 Sec.	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B18 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≤ 70.01 °F D16 LALM	Red	LO	70°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	
TIR17B19 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≤ 70.01 °F D16 LALM	Red	LO	70.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≥ 130 °F HALM	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B20 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≤ 70.01 °F ᴸᴬᶜᴹ ᴰᴵᴳ	Red	LO	70.0 °F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F.	
	INPUT ≥ 130 °F ᴴᴬᶜᴹ	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	
TIR17B21 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	INPUT ≤ 70.01 °F ᴰᴵᴳ ᴸᴬᶜᴹ	Red	LO	70.0°F	
	70.01 °F < INPUT < 130 °F	White	No	,00.0°F	
	INPUT ≥ 130 °F ᴴᴬᶜᴹ	Red	HI	131.0°F	
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	
	"ENABLE" Problem Alarm	Red	N/A	N/A	
	"CLEAR" Problem Alarm	White	N/A	N/A	

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		EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
DACS TAG	INPUT TO MODSOFT	TAG DISPLAY COLOR	HI/LO ALARM *		
TIR17B22 Established Parameters Low Alarm: 70.01 °F High Alarm: 130 °F Problem Alarm: Yes Wait Time: ≥ 6 Sec.	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≤ 70.01 °F LAlm alc	Red	LO	70.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	INPUT ≥ 130 °F	Red	HI	131.0°F	A
	70.01 °F < INPUT < 130 °F	White	No	100.0°F	A
	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
PCR12A01 Established Parameters Low Alarm: N/A High Alarm: 1.2 x (Expected PSID Value for speed set point) Problem Alarm: No Wait Time: ≥ 6 Sec. **NOTE:** Enabling PIR12A01 will toggle this MININ2 screen tag to red.	"CLEAR" PIR12A01 coil	White	N/A	N/A	A
	"ENABLE" PIR12A01 coil	Red	N/A	N/A	A
	"CLEAR" PIR12A01 coil bic alm	White	N/A	N/A	A

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
MIP00001 <u>Established Parameters</u> Low Alarm: N/A High Alarm: N/A Abort: ON signal Problem Alarm: No Wait Time: ≥ 6 Sec. NOTE: This tags color is changed by toggling it's associated ABORT coil.	Turn coil OFF	White letters with Green Dot	N/A	N/A	_(initials)_
	Turn coil ON MIP00001	Red letters and Dot	N/A	N/A	_(initials)_
	Turn coil OFF	White letters with Green Dot	N/A	N/A	_(initials)_

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
TIR12A01	32.1 °F < INPUT < 190 °F	White	No	134.9° F	A
	INPUT ≤ 32.1 °F DIG LM	Red	LO	32.0° F	A
Established Parameters	32.1 °F < INPUT < 190 °F	White	No	134.9°F	A
Low Alarm: 32.1 °F	INPUT ≥ 190 °F	Red	HI	237.7°F	A
High Alarm: 190 °F					
Problem Alarm: Yes	32.1 °F < INPUT < 190 °F MM	White	No	134.9°F	A
Wait Time: ≥ 6 Sec.	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A
TIR12A02	32.1 °F < INPUT < 190 °F	White	No	134.9°F	A
	INPUT ≤ 32.1 °F	Red	LO	32.0°F	A
Established Parameters	32.1 °F < INPUT < 190 °F	White	No	134.9°F	A
Low Alarm: 32.1 °F	INPUT ≥ 190 °F	Red	HI	237.7°F	A
High Alarm: 190 °F					
Problem Alarm: Yes	32.1 °F < INPUT < 190 °F	White	No	134.9°F	A
Wait Time: ≥ 6 Sec.	"ENABLE" Problem Alarm	Red	N/A	N/A	A
	"CLEAR" Problem Alarm	White	N/A	N/A	A

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM *		
VR232050 Established Parameters NOTE: Does not turn red on MININ2 screen. No function to test.	N/A	N/A	N/A	N/A	N/A
VR232040 Established Parameters NOTE: Does not turn red on MININ2 screen. No function to test.	N/A	N/A	N/A	N/A	N/A
ZIMPE142 Established Parameters Low Alarm: 9 psig High Alarm: 24.9 psig Problem Alarm: Yes Wait Time: ≥ 6 Sec.	9.0 psig < INPUT < 24.9 psig	White	No	11.1 psig	_(initials)_
	INPUT ≤ 9.0 psig _Alarm_	Red	LO	7.3 psig	_(initials)_
	9.0 psig < INPUT < 24.9 psig	White	No	11.1 psig	_(initials)_
	INPUT ≥ 24.9 psig	Red	HI	25.0 psig 17.83 psig	_(initials)_
	9.0 psig < INPUT < 24.9 psig _psig_	White	No	11.1 psig.	_(initials)_
	"ENABLE" Problem Alarm	Red	N/A	N/A	_(initials)_
	"CLEAR" Problem Alarm	White	N/A	N/A	_(initials)_

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TABLE 2: MININ2 SCREEN TAGS TEST					
DACS TAG	INPUT TO MODSOFT	EXPECTED RESULTS		MININ2 TAG VALUE READING	INITIALS
		TAG DISPLAY COLOR	HI/LO ALARM ★		
ZIMPE112 Established Parameters NOTE: Does not turn red on MININ2 screen. No function to test.	N/A	N/A	N/A	N/A	N/A
ARMGAMMA Established Parameters Low Alarm: N/A High Alarm: N/A Problem Alarm: No Wait Time: ≥ 12 Sec. NOTE: This tag fails on initiation of ARMALARM, ARMABORT, or ARMFAIL	"CLEAR" the following three coils: ARMALARM, ARMABORT, and ARMFAIL	White	N/A	N/A	_(initials)_
	"ENABLE" ARMALARM Coil	Red	N/A	N/A	_(initials)_
	"CLEAR" ARMALARM Coil	White	N/A	N/A	_(initials)_
	"ENABLE" ARMABORT Coil	Red	N/A	N/A	_(initials)_
	"CLEAR" ARMABORT Coil	White	N/A	N/A	_(initials)_
	"ENABLE" ARMFAIL Coil	Red	N/A	N/A	_(initials)_
	"CLEAR" ARMFAIL Coil	White	N/A	N/A	_(initials)_

NOTE: ★ = "HI" means received HIGH alarm. "LO" means received LOW alarm. "No" means no alarm signal received. "N/A" means not applicable.

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6.3.5   Verify the MININ2 screen displayed appropriate colors for values as listed in Table 2:

Verified by: _____ / 9-4-96.
(Test Director)   Date

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6.4   Access the GASSUM screen at DACS laboratory computer station #5. Perform the following steps (6.4.1 to 6.4.9) for each of the GASSUM tags listed in table 3. Omit steps 6.4.5 through 6.4.8 for FTIR N20.

    6.4.1   Request development system personnel to apply, using DACS laboratory computer #1, the following input test signals for GASSUM tags listed in Table 3:

> NOTE: After the FILE NAME has updated on the GASSUM screen the Delay Timer starts timing out for the length of time listed under <u>Established Parameters</u>. Time Delay for each of the tags. Steps 6.4.1.3 through 6.4.3 should be accomplished before the Delay Timer times out.

        6.4.1.1   Development system personnel assign FILE NAME = "1".

        6.4.1.2   Wait 30 to 60 seconds for FILENAME to update. When the FILE NAME updates on the GASSUM screen, start the stop watch or timer and begin timing the Delay Timer.

        6.4.1.3   Development system personnel input VALUE of approximately 50 PPM.

    6.4.2   Wait for SY-101 GAS SUMMARY table on the GASSUM screen on computer station #5 to update to the approximate 50 PPM value assigned (around 30 to 60 seconds).

    6.4.3   Record whether displayed value on GASSUM screen is approximately 50 PPM in Table 3 for the appropriate tag being tested.

    6.4.4   Wait for the given time as listed in Table 3 under <u>Established Parameters</u>, Delay Time, for the appropriate tag being tested. After the Delay Time has elapsed, observe that the appropriate tag value goes to 0.0 PPM. Record whether observed GASSUM value displayed is 0.0 PPM for tag being tested in Table 3.

> NOTE: Omit steps 6.4.5 through 6.4.8 for GASSUM tag FTIR N20.

    6.4.5   Access the MININ1 screen on computer station #5 and observe whether the appropriate DACS tag under test has turned red in color. Record observations in Table 3.

    6.4.6   Request development system personnel to apply, using DACS laboratory computer #1, the following input test signals for the appropriate GASSUM tag being tested:

        6.4.6.1   Development system personnel assign FILE NAME = "2".

        6.4.6.2   Wait 30 to 60 seconds for FILENAME to update on GASSUM screen.

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6.4.6.3   Development system personnel input VALUE of approximately 50 PPM.

6.4.7   Wait for the GASSUM screen on computer station #5 to update to the approximate 50 PPM value assigned (around 30 to 60 seconds).

6.4.8   Within 5 minutes of observing the GASSUM screen tag under test update to approximately 50 PPM, access the MININ1 screen on computer station #5 and observe the appropriate DACS tag has turned white in color.

6.4.9   Verify observations recorded in Table 3 for the GASSUM Tag tested are all marked "Y" (Yes) and Initial and date the appropriate block. Discrepancies shall be recorded in accordance with section 6.1.1 above.

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TABLE 3: GASSUM TAGS TEST						
GASSUM TAG (MININ1 TAG)	INPUT TO MODSOFT	OBSERVATION RESULTS				INITIALS AND DATE
		GASSUM VALUE FROM STEP 6.4.3 IS ~50 PPM (Y/N)	GASSUM VALUE FROM STEP 6.4.4 IS 0.0 PPM (Y/N)	IS MININ1 TAG RED IN COLOR FROM STEP 6.4.5 (Y/N)	IS MININ1 TAG WHITE IN COLOR FROM STEP 6.4.8 (Y/N)	
GC-1 H2 (GC1-H2) Established Parameters	FILE NAME: 1 Input ~ 50 PPM	Y	Y	Y	N/A	A 9-4-96
Time Delay: 450 Sec. +/- 60 Sec. (7.5 Min. +/- 1 Min.)	FILE NAME: 2 Input ~ 50 PPM	N/A	N/A	N/A	Y	A 9-4-96
GC-2 H2 (GC2-H2) Established Parameters	FILE NAME: 1 Input ~ 50 PPM	Y	Y	Y	N/A	A 9-4-96
Time Delay: 450 Sec. +/- 60 Sec. (7.5 Min. +/- 1 Min.)	FILE NAME: 2 Input ~ 50 PPM	N/A	N/A	N/A	Y	A 9-4-96
GC-3 H2 (GC3-H2) Established Parameters	FILE NAME: 1 Input ~ 50 PPM	Y	Y	Y	N/A	A 9-4-96
Time Delay: 450 Sec. +/- 60 Sec. (7.5 Min. +/- 1 Min.)	FILE NAME: 2 Input ~ 50 PPM	N/A	N/A	N/A	Y	A 9-4-96

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TABLE 3: GASSUM TAGS TEST						
GASSUM TAG (MININ1 TAG)	INPUT TO MODSOFT	OBSERVATION RESULTS				INITIALS AND DATE
		GASSUM VALUE FROM STEP 6.4.3 IS ~50 PPM (Y/N)	GASSUM VALUE FROM STEP 6.4.4 IS 0.0 PPM (Y/N)	IS MININ1 TAG RED IN COLOR FROM STEP 6.4.5 (Y/N)	IS MININ1 TAG WHITE IN COLOR FROM STEP 6.4.8 (Y/N)	
FTIR N20 (N/A) Established Parameters Time Delay: 1200 Sec. +/- 60 Sec. (20 Min. +/- 1 Min.)	FILE NAME: 1 Input ~ 50 PPM	Y	Y	N/A	N/A	A 9-4-96
FTIR NH3 (FT-NH3C) Established Parameters Time Delay: 1200 Sec. +/- 60 Sec. (20 Min. +/- 1 Min.)	FILE NAME: 1 Input ~ 50 PPM	Y	Y	Y	N/A	A 9-4-96
	FILE NAME: 2 Input ~ 50 PPM	N/A	N/A	N/A	Y	A 9-4-96
PHOTO NH3 (PHO-NH3) Established Parameters Time Delay: 450 Sec. +/- 60 Sec. (7.5 Min. +/- 1 Min.)	FILE NAME: 1 Input ~ 50 PPM	Y	Y	Y	N/A	A 9-4-96
	FILE NAME: 2 Input ~ 50 PPM	N/A	N/A	N/A	Y	A 9-4-96

6.4.10   Verify the observed GASSUM tags and MININ1 tags displayed
          appropriate values and colors as for each tag listed in Table 3:

Verified by: _____ _19-4-96_ .
            (Test Director)   Date

7.0 ATTACHMENTS

Attachment 1. Exception List

Attachment 2. Final Procedure Acceptance Sheet

241-SY-101 DACS SOFTWARE UPGRADE TO TEST STRATEGY, VERSION 3.04

EXCEPTION NUMBER	STEP NUMBER	EXCEPTION DESCRIPTION	EXCEPTION RESOLUTION	RESOLUTION APPROVED BY:	DATE RESOLVED
1	Table 1 DACS TAG PHO-NH3	HIGH ALARM 1000 PPM IS ASSOCIATED WITH THIS TAG	ADDED ADDITIONAL STEPS FOR INPUT TO MODSOFT TO TEST HIGH AMONIA CONC	*G.J. Ganck*	9-6-96
2	Table 1 DACS TAG FT-NH3C	A Problem ALARM FOR INSTRUMENT Problem is NOT Provided as "FT-INST"	ADDED ADDITIONAL STEPS FOR INPUT TO MODSOFT TO TEST INSTRUMENT PROBLEM ALARM	*G.J. Ganck*	9-6-96

Attachment 1: Exception List

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Completion of this procedure has demonstrated that:

- The MININ1 and MININ2 tags turn red in color from an alarm, abort, or problem signal and reset to white when condition clears.

- GC2-H2 tag added responds appropriately to alarm, abort, and problem conditions.

- The following GASSUM tags display 0.0 PPM on failure to receive an update from the associated instrumentation instead of retaining the last known good value and the corresponding MININ1 screen tag turns red indicating instrument failure; GC-1 H2, GC-2 H2, GC-3 H2, FTIR N2O, FTIR NH3, and PHOTO NH3.

- Test Strategy software, Version 3.04 has been adequately tested and is ready for installation into the DACS trailer computers.

- A record of all noted deficiencies was kept on Attachment 1, Exception List, and all recorded exceptions have been resolved and the resolutions approved.

Approved by:

D. C. Larsen
D. C. Larsen, Test Manager

9-6-96
Date

G. J. Gauck
G. J. Gauck, Test Director

9-6-96.
Date

T. A. Erickson
T. A. Erickson, SY Tank Farm Manager

9/6/96
Date

Attachment 2: Final Procedure Acceptance Sheet

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