ENGINEERING DATA TRANSMITTAL

JAN 17 2000

1. EDT **627656**

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Distribution	Dyncorp Electrical Utilities	N/A

5. Proj./Prog./Dept./Div.:	6. Design Authority/Design Agent/Cog. Engr.:	7. Purchase Order No.:
52600	M.F. Zakrajsek	N/A

8. Originator Remarks:

Initial release and distribution
Key Words: AM/FM, Electrical Utilities, Acceptance Test Plan,
Acceptance Test Report, Test Documentation

9. Equip./Component No.: N/A

10. System/Bldg./Facility: N/A

12. Major Assm. Dwg. No.: N/A

11. Receiver Remarks:	11A. Design Baseline Document? ☐ Yes ☒ No

13. Permit/Permit Application No.: N/A

14. Required Response Date: N/A

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	HNF-5321		0	ACCEPTANCE TEST PLAN	N/A	2	1	
2	HNF-5322		0	ACCEPTANCE TEST REPORT	N/A	2	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	(G) Reason	(H) Disp.	(J) Name (K) Signature (L) Date (M) MSIN
1	1	Design Authority J. M. Hache /J. M. Hache/ S2-12			
1	1	Design Agent M. F. Zakrajsek S2-12 1-14-00			
1	1	Cog. Eng. M. F. Zakrajsek S2-12			
1	1	Cog. Mgr. R. L. Fritz S2-12			
		QA			
		Safety			
		Env.			

18.	19.	20.	21. DOE APPROVAL (if required)
/M. Mathison/ 1/14/00 Signature of EDT Originator / Date	/M. Zakrajsek/ 1-14-00 Authorized Representative Date for Receiving Organization	/J. M. Hache/ 1/14/00 Design Authority/ Date Cognizant Manager	Ctrl No. _____ ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments

BD-7400-172-2 (10/97)

BD-7400-172-1

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	LMSI SD&I	Date 1/14/00
Project Title/Work Order		EDT No. 627656
HNF-5321, Revision 0 "Automated Mapping/Facilities Management (AM/FM) Version 8.4 Acceptance Test Plan"		ECN No.

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
M. F. Zakrajsek	S2-12	x			
K. M. Mathison	S2-12	x			

S

Automated Mapping/Facilities Management (AM/FM) Version 8.4 Acceptance Test Plan

Dyncorp Tri-Cities Services, INc.

Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 627656   UC: N/A
Org Code: 52600   Charge Code: 102711/EA0
B&R Code: Total Pages: ~~17~~/18
                         07
                         1-17-00

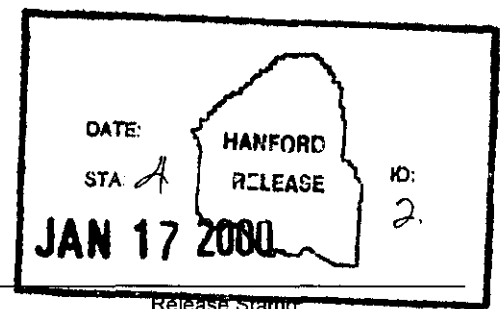Key Words: Automated Mapping/Facilities Management, AM/FM, Electrical Utilities, Acceptance Test Plan

Abstract: This document provides the testing process and activities to be performed in order to verify that version 8.4 of the AM/FM software meets the user's requirements.

DATE: HANFORD
STA: A   RELEASE   ID:
JAN 17 2000   2.

Release Approval   Date   Release Stamp

Approved For Public Release

HNF-5321
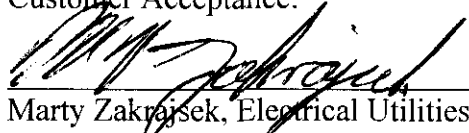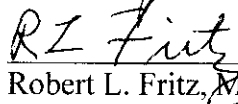Rev. 0

DYNCORP TRI-CITIES SERVICES, INC.
ELECTRICAL UTILITIES

AUTOMATED MAPPING/FACILITIES MANAGEMENT (AM/FM)
VERSION 8.4

ACCEPTANCE TEST PLAN

Customer Acceptance:

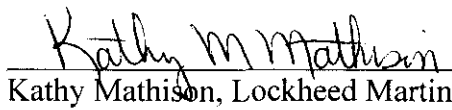|	
Marty Zakrajsek, Electrical Utilities Engineering	1-5-00
	Date
Robert L. Fritz, Manager, Electrical Utilities Engineering	1/6/00
	Date

Prepared By:

Kathy Mathison, Lockheed Martin Services, Inc.	1/5/00
	Date

TABLE OF CONTENTS

1.0 PURPOSE

The purpose of this document is to describe the tests that will be performed to the Automated Mapping/Facilities Management (AM/FM software), Revision 8.4, for the purpose of verifying and validating that the software functions as intended and in agreement with the design.

2.0 REFERENCES

2.1 SUPPORTING DOCUMENTS

HNF-SD-LL-CSCM-004, *AM/FM Software Configuration Management Plan,* DynCorp Tri-Cities Services, Inc., Richland, Washington

HNF-PRO-2778, *IRM Application Software System Life Cycle Standards,* Fluor Daniel Hanford, Inc., Richland, Washington

HNF-PRO-309, *Computer Software Quality Assurance Requirements,* Fluor Daniel Hanford, Inc., Richland, Washington

Organization Standard Software Practices Directives and Processes, Lockheed Martin Services, Inc., Richland, Washington

2.2 SYSTEM CHANGE REQUESTS

SCR 97-001 - Add Splice field to Vault module.
SCR 97-003 - Provide coordination between pole database coordinates and related modules.
SCR 97-004 - Add Manufacture Date to Transformer nameplate module.
SCR 99-009 - Change ESR/ECN database relationship to reflect current EU practices.

3.0 RESPONSIBILITIES

The AM/FM System Owner will designate personnel to assume the responsibilities and duties as defined herein for their respective roles.

3.1 TEST ADMINISTRATOR/RECORDER

- Shall ensure that the test system is properly set up and ready for acceptance testing.

- Shall act as liaison between the test performer(s) and the test witness(es).

- Shall notify the test performer and schedule testing with any affected parties.

- Shall notify all concerned parties when a change is made in the testing schedule.

- If a design problem causes an exception/anomaly, the Administrator shall request, in writing, any additional design information required/necessary to correct the exception. When the exception has been resolved the Test Administrator shall ensure that the signatures of the objecting party and the System Owner are present in/on the exceptions page of the ATR.

- Record the names of all designated personnel on Recorder's copy of the Acceptance Test Report (ATR).

- Observe the tests and record any/all necessary test data.

- On the Recorder's copy, initial and date every test step as it is completed, either next to the step number or in the appropriate table, as provided.

- Record exceptions and test steps that are not performed on the Exception Sheet.

- Transfer Recorder's copy of the completed ATR with the final test results and signatures for Final Approval and disposition.

3.2 TEST PERFORMER

- Shall perform the test as described in this document.

- Shall stop any test that, in the judgement of the Test Performer, may cause damage to the system or does not meet the defined requirements, until the test procedure has been revised.

3.3 TEST WITNESS AND APPROVAL PARTY

- Test witnesses will include any persons determined to have an interest in the system changes and testing outcome, if any. The test administrator, the test performer or Electrical Utilities

management, may make the decision of who will be included as test witnesses.

- Shall observe the testing and data recording to verify that requirements are adequately addressed and met.

- If any representative of the witness and approval party objects to the results obtained during the Acceptance Test, he shall notify the Test Recorder. These exceptions will be documented on an Exception Form for resolution.

- If any representative of the witness and approval party finds an exception to the test that is of sufficiently small magnitude, a qualified test approval may be given. In this case, a list of such exceptions shall be entered in the exceptions page as "Test Approved with Exceptions," signed and dated. This signature shall indicate that the exceptions were of such a nature that a rerun of the ATP is not necessary to demonstrate that the exceptions have been adequately rectified.

3.4 FINAL APPROVAL

Approval parties shall indicate the same by affixing their signature(s) on the Test Execution Sheet indicating that the ATP results have been accepted without reservation. Questions or objections shall be referred to the Test Administrator for resolution.

4.0 TEST PROCEDURE CHANGE CONTROL

Acceptance testing shall be conducted in accordance with the steps and requirements specified in this Procedure. Change(s) to this Procedure shall be accomplished in accordance with Standard Engineering Practices (Engineering Document Change Control processes/procedures).

5.0 DESCRIPTION OF SYSTEM

The intent of the AM/FM System is to satisfy the data collection, organization and reporting needs of Electrical Utilities (EU). The administrative portion of the system maintains logs and reports for the Engineering Documents, Engineering Change Notice (ECN), Electric Service Request (ESR), Excavation Permit, Pole Contact Permit, Projects, Purchase Requisition, and Site Evaluation Letter (SEL) modules. The equipment portion maintains data on cables, capacitor banks, meters, poles and pole equipment, stations, switching devices, switchgear, rackable breakers and transformers.

The system has been designed to meet four specific needs:

- **Central Point for Data.** AM/FM provides a repository where data is accumulated, updated, and accessed within one location.

- **CAMIS Requirement for Data.** Data from AM/FM are viewed in CAMIS for equipment that appears on the maps and is tracked by AM/FM. The Computer Automated Mapping Information System (CAMIS) provides a way to view maps of the Hanford site directly on the computer screen.

- **Control Number Generation.** AM/FM provides an automated system where the computer controls the generation of next equipment number(s).

- **Regulatory Requirements.** Data maintained in the oil inventory database of AM/FM assist in meeting regulatory requirements for hazardous material management. These data are also used in submitting state and federal reports.

6.0 TEST CONDITIONS AND EQUIPMENT REQUIRED

6.1 TEST CONDITIONS

The AM/FM programming changes will be copied to the Test fileserver located on APUTL02\dBASE 4. The system will then be compiled into an executable file, which will be tested. Upon acceptance of the system changes and approval by the Production Readiness Review Board, this executable will be copied to the production system on APUTL01 and become the production version.

6.2 EQUIPMENT REQUIRED

No special test equipment is required. The computer on which the tests will be performed must have access to the HLAN in order to access the test server.

7.0 ACCEPTANCE TEST

Start AM/FM on the test server and perform the tests identified below.

7.1 SCR - 97-001

Add spliced field to the vault database. Field will be Yes/No. Create report to print records for spliced = Y.

STEP #	TEST STEP	EXPECTED RESULTS	PASS/FAIL ----------------- INIT/DATE	RETEST P/F ----------------- INIT/DATE
1.	Add vault records.	Verify that spliced field is visible and only Y or N may be entered.	P Kmm 12/17/99	
2.	Edit vault records.	Verify that spliced field is visible and may be changed only between Y and N.	P Kmm 12/17/99	
3.	View individual vault records.	Verify that spliced field is visible.	P Kmm 12/17/99	
4.	View master vault list.	Verify that spliced field is visible.	P Kmm 12/17/99	
5.	Print Individual vault report.	Verify that spliced field prints.	Kmm 12/17/99	
6.	Print Spliced Vault Report.	Verify that records where the Spliced field is marked "Y" print. Verify report format.	P Kmm 12/17/99	

Tester Signature _Bert Winachel_   Date _12/17/99_

7.2   SCR - 97-003

Link changes to coordinate data between related pole, switch and transformer records.

STEP #	TEST STEP	EXPECTED RESULTS	PASS/FAIL ----------------- INIT/DATE	RETEST P/F ----------------- INIT/DATE
Enter a valid pole number into any switch device record. Note the switch and pole numbers and the coordinates displayed.				
7.	In the pole module, access the record for the pole number above. Change any combination of the coordinates.	Return to the switch module and verify the coordinates have been changed.	P /Cmm 12/17/99	
8.	Remove the pole number from any switch device records.	Verify that the coordinate values are removed.	P /cmm 12/17/99	
9.	Print the data for the switch device.	Verify that the coordinate values are correct.	P /Cmm 12/17/99	
Enter a valid pole number into any transformer record. Note the transformer and pole numbers and the coordinates displayed.				
10.	In the pole module, access the record for the pole number used above. Change any combination of the coordinates.	Return to the transformer module and verify the coordinates have been changed.	P /hm 12/17/99	
11.	Remove the pole number from any transformer records.	Verify that the coordinate values are removed.	P /cmm 12/17/99	
12.	Print the data for the transformer.	Verify that the coordinate values are correct.	P /cmm 12/17/99	

Tester Signature _Eugene P. Lamm Jr_   Date _12/17/1999_

7.3 SCR - 97-004

Add year of manufacture field to the transformer nameplate module.

STEP #	TEST STEP	EXPECTED RESULTS	PASS/FAIL ------------------ INIT/DATE	RETEST P/F ------------------ INIT/DATE
13.	Add transformer nameplate records.	Verify that the year of manufacture field is visible and only a number may be entered.	ρ ℓℓmm 12/17/99	
14.	Edit transformer nameplate records.	Verify that the year of manufacture field is visible and only a number may be entered.	ρ ℓℓmm 12/17/99	
15.	View individual transformer nameplate records.	Verify that the year of manufacture field is visible.	ρ ℓℓmm 12/17/99	
16.	View master transformer nameplate list.	Verify that the year of manufacture field is visible	ρ ℓℓmm 12/17/99	
17.	Print Individual transformer nameplate report.	Verify that the year of manufacture field is visible	ℓℓmm 12/17/99	

Tester Signature _Eugene P. Lamm Jr_   Date _12/17/1999_

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7.4 SCR - 99-009

Revise ESR/ECN connecting database to mirror the current ESR/ECN process.

STEP #	TEST STEP	EXPECTED RESULTS	PASS/FAIL ---------------- INIT/DATE	RETEST P/F ---------------- INIT/DATE
ADD ESR RECORDS				
18.	Add a new ESR record. Enter any data on the first data entry screen. On the second data entry screen, enter twenty-one Related Data records. Make note of the Related Data records for future use.	System should only allow twenty records to be added. Data entered in the data entry boxes should be displayed on the screen above. *Did not allow duplicate Record Entry). Kmvm*	P Kmvm 12/17/99	
19.	Add another ESR record. Add five Related Data records. Make note of the data for future use.	Entry of Related Data records should be allowed and displayed.	P Kmvm 12/17/99	
EDIT ESR RECORDS				
20.	Access one of the two ESR records entered in the steps above.	When the Related Data screen is displayed, all of the records entered should appear. Each should be numbered. Two additional items for adding records and exiting the screen should be displayed.	P Kmvm 12/17/99	
21.	Select three of the Related data records and edit the data.	Data should be changed on the display screen above.	P Kmvm 12/17/99	
22.	Change one of the records to display the same data as one of the other records.	Duplicate records should not be allowed.	P Kmvm 12/17/99	
23.	Select any record and remove the data from both fields.	A message should be displayed indicating the record will be deleted. The screen display above should no longer display the record.	F Kmvm 12/17/99	P Kmvm 12/30/99
24.	Add any two additional Related records.	The data display should reflect the additions.	P Kmvm 12/29/99	

25.	Attempt to add a record already displayed.	Duplicate entries should not be allowed.	P kmm 12/29/99	
26.	Enter the number to exit the screen.	Should return to the Add new record screen.	P kmm 12/29/99	
VIEW ESR RECORDS				
27.	View either of the records entered above.	Verify that the Related data screen displays the correct Related data.	P kmm 12/29/99	
PRINT ESR REPORTS				
28.	Print an Individual report for either of the records entered above.	Verify that the data prints the correct Related data.	P kmm 12/29/99	
ADD ECN RECORDS				
29.	Add an ECN record for an ECN number NOT related in the ESR test.	The Related Data screen for the ECN record should be blank.	P kmm 12/29/99	
30.	Add an ECN record for an ECN number related in the ESR test.	The Related Data screen for the ECN record should include those referenced ESR/WP record(s). Each should be numbered. Items for adding records and exiting the screen should be displayed.	P kmm 12/29/99	
31.	Add an additional Related record using an invalid ESR number.	The record should not be saved.	P kmm 12/29/99	
32.	Select one of the Related data records and edit the data.	Data should be changed on the display screen above.	P kmm 12/29/99	
33.	Change one of the records to display the same data as one of the other records.	Duplicate records should not be allowed.	P kmm 12/29/99	
34.	Select any record and remove the data from both fields.	A message should be displayed indicating the record will be deleted. The screen display above should no longer display the record.	F kmm 12/29/99	P kmm 12/30/99
35.	Add any two additional Related records.	The data display should reflect the additions.	P kmm 12/29/99	
36.	Attempt to add a record already displayed.	Duplicate entries should not be allowed.	P kmm 12/29/99	
37.	Enter the number to exit the screen.	Should return to the Add new record screen.	P kmm 12/29/99	

EDIT ECN RECORDS				
38.	Access one of the two ECN records entered in the steps above.	When the Related Data screen is displayed, all of the records entered should appear. Each should be numbered. Two additional items for adding records and exiting the screen should be displayed at the bottom of the list.	P kmm 12/29/99	
39.	Select one of the Related data records and edit the data.	Data should be changed on the display screen above.	P kmm 12/29/99	
40.	Select any record and remove the data from both fields.	A message should be displayed indicating the record will be deleted. The screen display above should no longer display the record.	F kmm 12/29/99	P kmm 12/30/99
41.	Add any two additional Related records.	The data displayed on the screen should reflect the additions.	kmm 12/29/99	
42.	Enter the number to exit the screen.	The program should return to the Add new record screen.	kmm 12/29/99	
VIEW ECN RECORDS				
43.	View either of the records entered above.	Verify that the Related data screen displays the correct Related data for the record.	F kmm 12/29/99	P kmm 12/30/99
PRINT ECN REPORTS				
44.	Print an Individual report for either of the records entered above.	Verify that the data prints the correct Related data.	F kmm 12/29/99	P kmm 12/30/99

Tester Signature _Joseph M. Hache_ Date _01/05/00_

8.0 EXCEPTION FORM

The following page is an example of the form used to describe exceptions found during the running of this Acceptance Test Procedure. If exceptions are found, copies of this sheet should be completed and included in the Acceptance Test Report.

TEST EXCEPTION FORM

<u>Exception Identification</u>

Exception No.   **Item No.**   **Date**

Description of Exception: (Identify expected results and actual results)

<u>Determination</u>

[ ]Fix Before Implementation   [ ]Fix After Implementation   [ ]Change in Scope

Action Taken:

Impact On Previous or Following Tests:

Exception Documented By:

Test Performer	Date

Test Administrator	Date

Test Witness	Date

Correction Verified By:

Test Performer	Date

Test Administrator	Date

Test Witness	Date