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ENGINEERING DATA TRANSMITTAL

1. EDT 622436

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5. Proj./Prog./Dept./Div.:	**6. Design Authority/ Design Agent/Cog. Engr.:**	**7. Purchase Order No.:**
Tank Waste Information Network System II (TWINS2)/Waste Management/TBP/Process Engineering	M. R. Adams	N/A
8. Originator Remarks: This document is being released into the supporting document system for retrievability purposes.		**9. Equip./Component No.:** N/A **10. System/Bldg./Facility:** N/A
11. Receiver Remarks: For release.	**11A. Design Baseline Document?** [ ] Yes [X] No	**12. Major Assm. Dwg. No.:** N/A **13. Permit/Permit Application No.:** N/A **14. Required Response Date:** 04/15/98

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-2564	N/A	0	Tank Waste Information Network System II (TWINS2) Year 2000 Compliance Assurance Plan	N/A	2	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 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) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
		Design Authority									
		Design Agent									
2	1	Cog.Eng. M.R. Adams	M R Adams	4/15/98	R2						
2	1	Cog. Mgr. J.W. Hunt	J W Hunt	4/15/98	R2						
		QA									
		Safety									
		Env.									

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
A.E. Young Signature of EDT Originator 4-13-98 Date	N/A Authorized Representative for Receiving Organization Date	J W Hunt Design Authority/ Cognizant Manager 4/15/98 Date	[ ] Approved [ ] Approved w/comments [ ] Disapproved w/comments

Tank Waste Information Network System II (TWINS2) Year 2000 Compliance Assurance Plan

M. R. Adams
Lockheed Martin Hanford, Corp., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

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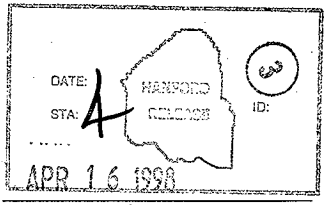

Release Approval 4/16/98
Date

Release Stamp

Approved for Public Release

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Revision 0

Tank Waste Information Network System II (TWINS2) Year 2000 Compliance Assurance Plan

M. R. Adams
Lockheed Martin Hanford Corporation

Date Published
April 1998

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Fluor Daniel Hanford, Inc.
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Approved for Public Release; Further Dissemination Unlimited

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1.0 SCOPE

The scope of this plan includes the Tank Waste Information Network System II (TWINS2) that contains the following major components: Tank Characterization Database (TCD), Tank Vapor Database (TVD), Data Source Access (DSA), automated Tank Characterization Report, Best-Basis Inventory Model (BBIM), and Tracker (corrective action tracking) function. The automated Tank Characterization Report application currently in development also will reside on the TWINS system as will the BBIM. Critical inputs to TWINS occur from the following databases: Labcore and SACS. Output does not occur from TWINS to these two databases.

2.0 GENERAL SYSTEM DESCRIPTION

The TWINS hardware consists of two NT servers recently installed and tested. The software suite consists of the following:

- Microsoft SQL Server 6.5
- Microsoft Access 97
- Microsoft Excel 97
- Microsoft Word 97
- Lotus Notes 4.5
- Domino Web Server 4.5.2
- CGI Script (for web interface).

The following table indicates the software associated with each major component of the TWINS system.

TWINS Software and Hardware	TWINS Interface	DSA	TCD	TVD	BBIM	AUTO TCR	TRACKER
SQL Server			x	x	x	x	
Access 97			x		x	x	
Excel 97	x					x	
Word 97						x	
Lotus Notes 4.5		x					
Domino		x					
Home-grown date functions	x	x	?	?	?		
PC TWINS NT Server		x				x	
Kayla NT Server	x		x	x	x	x	
External Data Interfaces	x		x			x	
PVCS							x

The TWINS system provides entry, storage, report, edit, and network access capabilities for a wide variety of tank characterization data including inventory data, analytical data, sampling data, vapor data, physical properties data for both chemical and radionuclide species. Also, the system provides network and world wide web access to data, documents, visual information, graphics, electronic document templates, standard data reports, and other information including the ability to do key-word and tank specific document searches. The system capabilities are constantly being updated in response to user needs. Loading of tank analytical data is constantly kept up-to-date to comply with Tri-Party Agreement (TPA) requirements. Network access to the data is also a TPA requirement.

This is a high risk system (rating 175) because the data are used for tank safety evaluations, preparation of Tank Characterization Reports, disposal program efforts, and TPA compliance.

3.0 GENERAL CONDITION OF COMPLIANCE

No significant year 2000 compliance problems have been identified with this system. The system has been upgraded to state-of-the-art software and hardware. However, because analytical data is time dependent (e.g., the dates of sampling and analysis are critical factors in the usefulness of the data) and because the system is high risk, vigorous verification and documentation of compliance is necessary.

The CGI script component of the system (see Section 2.0) has known SACS data date query problems which will require a few hours to fix. The problem will be addressed by moving or replacing the CGI script functions to other software.

In general, the following conditions of compliance shall be verified.

- All representations and uses of year (including century) are free of defects, miscalculations, and misrepresentations.
- The date 9/9/99 is accounted for, is properly handled and will not be interpreted as end-of-file, or other status indication.
- The date 12/31/99 is accounted for, is properly handled and will not be interpreted as end-of-file, or other status indication.
- The date 1/1/2000 is accounted for and properly handled.
- The date 2/29/2000 and its surrounding days are accounted for and are properly handled.
- Use of dates or values '00' or '99' in files and/or databases will produce correct results and will not be interpreted as end-of-file, or other status indication.

- Use of 2-digit year values in files, databases, program logic, operating system calls, and external interfaces have been evaluated, tested, and validated, and will produce reliable and consistent results.
- Prior-year and future-year dates are processed accurately through the entire range of dates expected to be encountered, including dates that span centuries.

4.0 TEST CASE LIST

The following minimum test cases will be run and documented to verify system compliance:

- September 8, 1999 to September 9, 1999 (tests 9999)
- December 31, 1999 to January 1, 2000 (change of millennium)
- February 28, 2000 to February 29, 2000 (recognition of leap year)
- February 29, 2000 to March 1, 2000 (does not go to February 30 or 31)
- February 29, 2001 (should create error as 2001 is not a leap year)
- December 30, 2000 to January 1, 2001 (checks for bad leap year calculation)
- December 31, 2000 to January 1, 2001 (shows year 2000 has 366 days).

5.0 COMPLIANCE DOCUMENTATION

The following year 2000 compliance documentation shall be prepared for this system:

- Year 2000 Compliance Assurance Plan (this document)
- System Description (hardware and software with version numbers)
- Assessment of Vendor Testing and Documentation (an assessment of vendor supplied year 2000 compliance testing and documentation including results of a review of vendor supplied manuals and certifications)
- Test Case Documentation (includes date and time of each test case listed in Section 4.0, along with verification sign-off by tester and independent witness; includes description of test, test results and documentary evidence of test success)

- Test Plan for Pacific Northwest National Laboratory (PNNL) Date Functions (primarily relates to CGI software).

6.0 COMPLIANCE TASK LIST AND SCHEDULE

Task Item	Due Date	Comments
1. Prepare, review and issue Year 2000 Compliance Assurance Plan	April 17, 1998	Initiated
2. Complete system description	April 30, 1998	
3. Complete assessment of vendor testing and documentation	May 15, 1998	
4. Complete test cases for TVD	June 15, 1998	
5. Complete test cases for TCD	June 15, 1998	
6. Complete test cases for autoTCR	June 30, 1998	
7. Complete test cases for BBIM	June 30, 1998	
8. Complete test cases for Tracker	June 30, 1998	
9. Complete test cases for DSA	July 15, 1998	
10. Review SACS compliance assessment and identify interface problems	When available	
11. Review Labcore compliance assessment and identify interface problems	When available	
12. Complete test case documentation for items 4 through 9	August 15, 1998	
13. Prepare contingency plan for SACS interface (if required)	No later than August 30, 1998	
14. Move or replace CGI script functions	No later than August 30, 1998	
15. Prepare contingency plan for Labcore interface (if required)	No later than August 30, 1998	
16. Sign compliance certification document	September 15, 1998	

7.0 RESPONSIBILITIES

The owner of this system is Lockheed Martin Hanford Co., M. R. Adams, lead for TWRS characterization data management. The operator of this system is PNNL, Steve Bobrowski, TWINS project manager. All documents and tests listed above (except item #1) shall be prepared by PNNL for delivery to and review and approval by LMHC (M. R. Adams).

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	Data Management/Technical Basis and Planning	Date 04/15/98
Project Title/Work Order		EDT No. EDT-622436
HNF-2564, Rev. 0, "Tank Waste Information Network System II (TWINS2) Year 2000 Compliance Assurance Plan"		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
Lockheed Martin Hanford, Corp.					
M. R. Adams	R2-12	X			
R. B. Bass	H7-06	X			
J. W. Hunt	R2-12	X			
E. I. Husa	R2-11	X			
J. G. Kristofzski	R2-12	X			
J. B. Schaffer	R2-11	X			
T.C.S.R.C.	R1-10	X			
Lockheed Martin Services, Inc.					
Central Files	B1-07	X			
Pacific Northwest National Laboratory					
S. F. Bobrowski	K7-28	X			