H COMPLETE

ENGINEERING CHANGE NOTICE

Page 1 of 3

1. ECN No 623166

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	3a. USQ Required?	4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	JB Jech, CMI&CE, S4-43, 373-1711	[] Yes [X] No	04/28/95
	5. Project Title/No./Work Order No.	6. Bldg./Sys./Fac. No.	7. Approval Designator
	Master Equipment List - Phase I	Tank Farms	SQ
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.)	9. Related ECN No(s).	10. Related PO No.
	WHC-SD-WM-CSRS-023, rev 0	NA	NA

11a. Modification Work	11b. Work Package No.	11c. Modification Work Complete	11d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	NA	NA Cog. Engineer Signature & Date	NA Cog. Engineer Signature & Date

12. Description of Change

Complete revision of WHC-SD-WM-CSRS-023, rev 0

13a. Justification (mark one)

Criteria Change	[X]	Design Improvement	[]	Environmental	[]	Facility Deactivation	[]
As-Found	[]	Facilitate Const	[]	Const. Error/Omission	[]	Design Error/Omission	[]

13b. Justification Details

Revision executed to upgrade document to current development activities.

14. Distribution (include name, MSIN, and no. of copies)

JB Jech	(1)	S4-43	DG Hert	(1)	S4-43
DD Larson	(1)	S4-43	DB Engelman	(1)	R1-49
J Weber	(1)	S1-57	RR Stickney	(1)	R1-49
LE Thomas	(1)	R3-08	SG Sterling	(2)	E6-21
JB Schaffer	(1)	S1-01	Central Files	(2)	L8-04
RB Bass	(1)	R1-01	OSTI	(2)	L8-07
RA Dodd	(1)	S5-05			

RELEASE STAMP

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DATE APR 28 1995

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A-7900-013-2 (11/94) GEF095

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 623166

15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]	Tickler File	[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog. Eng. JB Jech SEE PAGE 3		PE	
Cog. Mgr. DD Larson		QA	
QA J Weber FOR		Safety	
Safety LE Thomas SIGNATURES		Design	
Environ.		Environ.	
CDM&I JB Schaffer		Other	
DAE SG Sterling			
		DEPARTMENT OF ENERGY	
		Signature or a Control Number that tracks the Approval Signature	
		ADDITIONAL	

ENGINEERING DATA TRANSMITTAL

EDT 607905

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
DATA AUTOMATION ENGINEERING	CONFIGURATION MANAGEMENT IMPROVEMENT & CONTROL ENGINEERING	608038
5. Proj./Prog./Dept./Div.:	**6. Cog. Engr.:**	**7. Purchase Order No.:**
CONFIGURATION MANAGEMENT IMPROVEMENT & CONTROL ENGINEERING	JB JECH	NA
8. Originator Remarks: Approval and Release of MEL Phase I - System Requirement Specification.		**9. Equip./Component No.:** NA
		10. System/Bldg./Facility: NA
11. Receiver Remarks:		**12. Major Assm. Dwg. No.:** NA
		13. Permit/Permit Application No.: NA
		14. Required Response Date: 04/14/95

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-CSRS-023		1	MEL - Phase I CSRS	SQ	1/2	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 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. JB Jech	JB Jech	4-26-95	S4-43	TWR/ENG RA Dodd			S5-05	3	
1	1	Cog. Mgr. DD Larson	DD Larson		S4-43	CMI&CE DG Hert			S4-43	3	
1	1	QA J Weber	J. Weber	4/12/95	R3-57	TWR/ENG DB Engelman			R1-49	3	
1	1	Safety	L. E. Thomas	4/11/95	R3-08	TWRS/ENG R. R. Stickney			R1-49	3	
		Env.				Central Files			L8-04	3	
1	1	CDM&I JB Schaffer	JB Schaffer	3/4/95	S1-01	OSTI (2)			L8-07	3	
3		BCS RB Bass			R1-01						

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
JB JECH 4/26/95 Signature of EDT Originator Date	SG STERLING 4/25/95 Authorized Representative for Receiving Organization Date	DD LARSON 4/25/95 Cognizant Manager Date	[] Approved [] Approved w/comments [] Disapproved w/comments

RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-CSRS-023, REV 1
Document Title:	Master Equipment List - Phase I
Release Date:	4/27/95

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara M. Broz — April 27, 1995

SUPPORTING DOCUMENT

1. Total Pages 28

2. Title	3. Number	4. Rev No.
Master Equipment List - Phase I	WHC-SD-WM-CSRS-023	1

5. Key Words

Master Equipment List, MEL, Equipment, Component, Maintenance, Tank Farm, Labels

RMB 4/27/95

APPROVED FOR PUBLIC RELEASE

6. Author

Name: JB Jech

Signature

Organization/Charge Code 71770/N1070

7. Abstract

This document defines the system requirements for the Master Equipment List - Phase I.

8. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed.

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9. Impact Level SQ

10. RELEASE STAMP

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DATE APR 28 1995

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MASTER

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RECORD OF REVISION	(1) Document Number WHC-SD-WM-CSRS-023	Page 1

(2) Title
Master Equipment List - Phase I

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
0	(7) WHC-SD-WM-CSRS-023, rev 0, EDT 608038, Initial Issue Date 08-11-94	JB Jech	DD Larson 4/27/95
		↗	↗
1 RS	Revise Per ECN-623166		

A-7320-005 (08/91) WEF168

SOFTWARE REQUIREMENTS SPECIFICATION FOR THE MASTER EQUIPMENT LIST - PHASE I

April 1995

Prepared For

Waste Tank Plant Engineering

Prepared By

JB Jech

Software Requirements Specification
For The
Master Equipment List - Phase I

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this document is to define the system requirements for the Master Equipment List (MEL) Phase I project. The intended audience for this document includes Data Automation Engineering (DAE), Configuration Management Improvement & Control Engineering (CMI&CE), Data Administration Council (DAC), and (TWRS) personnel.

The intent of Phase I is to develop a user-friendly system to support the immediate needs of the TWRS labeling program. Phase I will provide CMI&CE the ability to administrate, distribute, and maintain key information generated by the labeling program.

1.2 Scope

The MEL Phase I system will be a multi-user system available through the HLAN network. It will provide basic functions such as view, query, report, edit, data entry, password access control, administration and change control.

The scope of Phase I data will encompass all Tank Farm Equipment identified by the labeling program. The data will consist of fields from the labeling program's working database, relational key references and pointers, safety class information, and field verification data.

1.3 Overview

CMI&CE is assigning new Equipment Identification Numbers (EINs) to selected equipment in Tank Farms per the TWRS Data Standard "Tank Farm Equipment Identification Number". The assignment of new EINs to equipment has a rippling effect on TWRS documentation and existing computer systems. CMI&CE needs the ability to maintain, administrate, and distribute these new EIN assignments to the affected organizations. This labeling activity will also produce field data on each piece of Tank Farm equipment.

Implementation of the MEL Phase I product is an interim solution to meet these immediate needs. However, it will not meet future customer requirements. Those requirements will be fully addressed during the Phase II requirements gathering and development process.

MEL Phase I represents the first step in the development of the MEL Phase II Quality Affecting Application. Proper software engineering practices will be applied to ensure that the MEL Phase I is developed according to the Company Software Development Standards, WHC-CM-3-10 "Software Practices" and DOE 1330 requirements.

1.4 Acronyms & Definitions

ACRONYMS

CAMIS	-	Computer Automated Management Information System
CMI&CE	-	Configuration Management Improvement & Control Engineering
DAC	-	Data Administration Council
DAE	-	Data Automation Engineering
ERSDB	-	Engineering Release System DataBase
GIS	-	Geographical Information System
HDAT	-	Handheld Data Acquisition for Tank Farms
HLAN	-	Hanford Local Area Network
P&ID	-	Process & Instrumentation Diagram
QC	-	Quality Control
SACS	-	Surveillance Analysis Computer System
SQL	-	Standard Query Language
TWRS	-	Tank Waste Remediation Systems
WHC	-	Westinghouse Hanford Company

DEFINITIONS

Context Diagram - a context diagram is a drawing that shows the boundaries and the interfaces associated with a computer system.

Data Integrity - data integrity is the assurance that the data stored and reported are the values representing field conditions.

Equipment Identification Number (EIN) - a unique equipment identification number per the TWRS Data Standard "Tank Farm Equipment Identification Number".

H-14 Series System Drawing - O&M essential system P&ID drawing.

Master Equipment List (MEL) - list of component data that provides a full description of the component, contains key reference lists to documentation and other data sources.

Project Management Plan (PMP) - the controlling document for managing software development projects. A software project management plan defines the technical and managerial project functions, activities, and tasks necessary to satisfy WHC development requirements.

Safety Equipment List (SEL) - a list of safety requirement document sources and the determination of safety class of a component.

System Configuration Management Plan (CMP) - A plan for identifying and defining the configuration items in a system, controlling the release and change of these items throughout the system life cycle, recording and reporting the status of configuration items and change requests, and verifying the completeness and correctness of the items. Also known as system configuration management plan.

System Design Description (SDD) - a document that represents a software system created to facilitate analysis, planning, implementation, and decision making. A blueprint or model of the software system.

System Requirements Specification (SRS) - a document that specifies the requirements for a system or component. Typically included are functional requirements, performance requirements, interface requirements, design requirements, and development standards.

System User Documentation - a document describing the way in which a system or component is to be used to obtain desired results.

System Verification and Validation Plan (SVVP) - A plan for the conduct of software verification and validation.

System Verification and Validation Report (SVVR) - Documentation of V&V results and appropriate software quality assurance results.

2.0 GENERAL DESCRIPTION

2.1 Product Perspective

The Phase I product will be developed as a Quality-Affecting software product. It will be self-contained from the standpoint of data maintenance. This product represents the initial distribution and administration tool for the TWRS MEL. It will be the core data and foundation for the MEL Phase II application.

Planned modules for the MEL Phase II application include: Nameplate, Operation, Mechanical, Electrical, and Instrumentation. The Equipment Status Tracking Program is a good candidate for either adding to or establishing an Standard Query Language (SQL) link to the MEL Phase II application.

Refer to Context Diagram "Master Equipment List - Phase I", Appendix C.

A requirement gathering process will be performed for the MEL Phase II application to define end-user requirements and to ensure that DOE requirements, guidelines, and standards are met. The scope of the Phase II application will be discussed in a System Concept Document. This Document will be revised to incorporate the new requirements gathered. Phase I system shall be developed with "expansion in mind" to reduce possible impacts from the Phase II requirements.

Primary objectives of Phase II:

1) Define nameplate, operation, maintenance, and engineering data requirements.

2) Ensure that the end-user requirements and applicable DOE requirements, guidelines, and standards are met.

3) Address the issue of where best to maintain such data.

4) Upgrade MEL Phase I system to meet those requirements.

5) Identify potential integrations of the MEL with existing systems.

6) Determine which integrations will help meet the requirements, streamline our business processes, add value and are cost effective.

7) Prioritize and develop work plans (Phase III) for implementing the integrations.

Refer to Context Diagram "TWRS Business Integration Model", Appendix D.

2.2 Product Functions

The primary function for the Phase I system is to maintain the relationship between the new EINs and the OLD identification number(s). It will maintain key references for each EIN. It will maintain the relationship between the H-14 System P&ID drawings and the superceded H-2 reference drawings. It will provide electronic change control, access controls and system administrative functions.

2.3 User Characteristics

Primary users will be the organizations responsible for TWRS Configuration Management, safety class assignments, operations, maintenance, system administration, and system maintenance. The possibility exists for personnel from all TWRS organizations to request "Read Only" access.

The user population will vary from novice computer users to knowledgeable computer users. Use of the system will vary from infrequent to everyday use. Due to having some novice computer users and infrequent users, user-friendliness and On-Line Help functions will be a vital part of this product.

2.4 General Constraints

This project can be impacted by lack of funding support, identification of a dedicated system developer, and availability of a fileserver.

2.5 Assumptions and Dependencies

This development depends upon the identification of dedicated system developer support. It is assumed that the Phase I product will remain within the definition of this document.

If there is a conflict between the label in the field, H-14 System Drawing, and the MEL, the released system drawing will be the ruling authority.

3.0 SPECIFIC REQUIREMENTS

3.1 General Requirements

- System needs to be a modular design to support future growth and a changing environment.
- System needs to support SQL and Object linking for possible future integrations. The system needs to be developed with these future interfaces in mind. Refer to Context Diagram "TWRS Business Integration Model", Appendix D.
- System needs to be coded in a software package that has a sufficient knowledge base for onsite support. Code should be "commented" to support future code changes.
- System needs to be developed in a Windows environment where ON-LINE help, mouse/key driven menus, and error messaging are used to guide the most novice users.
- System needs to support a multi user and multi tasking environment. It must be developed to support a high end user population.
- System needs to have flexible query and report functions where the user selects which fields to be queried and reported on. The user needs the ability to modify their original query.
- System needs to operate efficiently in the HLAN environment.
- System needs to have password access controls for change authorization. It needs to have password assignments by organization, by table, by individual, by farm, and by specific fields.
- The system administrator needs the ability to assign access controls, change authority levels, track and monitor changes electronically, track system access activity, administrate system error messaging and corrective intervention.

3.2 Functional Requirements

3.2.1 System Administrative Functions

The System will have the following administration/security access levels:

1)	System Administrator	
2)	Data Entry/View/Query/Report	
3)	View/Query/Report	
4)	Change Authority 1	Includes all fields
5)	Change Authority 2	Includes all fields, except EIN, NOUN_NAME, OLD_ID_FLD, FARM
6)	Change Authority 3	Assign specific tables
7)	Change Authority 4	Assign specific farm
8)	Change Authority 5	Assign specific fields

The system administrator should have the ability for Change Control Tracking and Monitoring. Refer to Appendix B, "Change Control Process".

The system should have an automatic log-off function for users with idle periods.

3.2.2 Data Input and Update Functions

1) Ability to enter and update tables with a minimum amount of screens.

2) Ability to enter data via popup windows for data standardization.

3) Ability to upload data from the labeling program's working tables.

3.2.3 Query and Retrieve Functions

The user needs the ability to build query combinations by selecting fields and inserting search values for the selected fields. The user needs the ability to modify previous query.

Query by the following primary key fields:

1) MASTER TABLE
   - A) Equipment Identification Number (EIN)
     1) System - specify system
     2) Component - specify component
     3) Number - specify number

     Note: Query by all or part of the EIN.
   - B) Component Type
   - C) Farm Facility
   - D) Building
2) POINTER TABLE - All fields
3) SYSTEM DRAWING TABLE - System Drawing Number
4) REFERENCE DRAWING TABLE - Reference Drawing Number
5) ALIASES TABLE - Alias
6) SAFETY EQUIPMENT TABLE
   - A) Tank
   - B) Source Document Number

3.2.4 Report Functions

The system should provide standard report options for the main user group. Standard report formats will be defined during the development sessions between the customer and the developer. At the least, each table within the application will have one standard report format.

For queries, the system should display the results on the screen first for the user to browse. An "option to print" window should be available providing the user a selection of standard reports. One of the standard report options should be "copy to file".

The System Administrator should have the ability to customize reporting as needed to support internal CMI&CE functions. The System Administrator should have the ability to revise or design new report formats for the main user group.

3.2.5 Multi-Use Functions

The system should be developed to support a multi use environment where data entry, viewing, querying, reporting, change activity, and system administration functions can be performed nearly simultaneously.

3.2.6 Backup Functions

The System Administrator will ensure that this system is registered for the automatic backup procedure performed each night by Network Administration. For additional backup support, the system shall have a menu option for the System Administrator to perform manual backups.

3.3 External Interface Requirements

3.3.1 User Interfaces

Novice computer users exist within the user community. To avoid formalized training sessions the developer is strongly encouraged to emphasize user-friendliness in this application. The system should be menu/mouse driven and popup windows should be used to standardize data entry. The system should have on-line help (similar to the Windows on-line help function) to guide and prompt new users.

3.3.2 Hardware Interfaces

The hardware components of the system will be compatible with current WHC Hardware Standards. Workstations will be IBM PC 486/33 with a minimum of 8 meg of RAM. They shall have 30 megabytes of free disc space available for installation of the application's programs.

3.3.3 Software Interfaces

The software used for this development should support SQL linking. The current site standard for database development is Paradox. Future plans for site standards should be considered before building the system. Runtime is acceptable for the implementation and distribution of the system.

3.3.4 Communication Interfaces

It is required that this system can be accessed via the Hanford Local Area Network (HLAN). A program should be written to automatically assess a new user's computer environment and then setup the appropriate access function.

3.4 Performance Requirements

The system shall have the following response times on a 486/33 with 8 meg of RAM:

1) Input/edits - less than < 2 seconds
2) Data Queries - less than < 30 seconds
3) Report Generation - less than < 1 minute per page
4) Initial Startup - less than < 1 minute

The Multi-Use environment should perform to the following criteria:

1) 6-10 users should be able to perform data entry simultaneously
2) 6-10 users should be able to perform edits simultaneously
3) 25-50 users should be able to perform queries simultaneously
4) 25-50 users should be able to perform reports simultaneously

Network traffic, inadequate user hardware and insufficient RAM may impact the performance times listed above.

3.5 Design Constraints

3.5.1 Standards Compliance

WHC-CM-3-10, "Software Practices" requires this document for a Quality Affecting software development. It also requires the following documentation:

1) Project Management Plan or Work Plan
2) System Design Description
3) System User Documentation
4) Test Documentation
   a) Acceptance Test Plan
   b) Operational Test Plan
5) System Configuration Management Plan

3.5.2 Resource Limitations

The availability of a fileserver and unforeseen HLAN limitations may impact the implementation of the system. Deviation from Site Software Standards may be required to fulfill the requirements defined in this document.

3.6 Other Requirements

3.6.1 Data

The following will be performed to establish a baseline for the MEL Phase I system's data.

1) Upon the release of an H-14 system drawing, the related MEL data from the working database will be transferred to the MEL Phase I System Administrator.

2) An independent review will be performed to validate the EIN relationship between the released H-14 system drawing and the transferred data file. A report showing the validation will be filed in the MEL project file.

3) Upon completion of the review, the data file will be loaded into the MEL Phase I system.

Any changes after this initial data load will be performed according to the "Change Control Process", Appendix B.

3.6.2 Operations

Normal operation will be on the HLAN environment. Startup will occur when a user initiates access. Shutdown will occur upon exiting the program. Normal backup operations will be handled by the System Administrator. Emergency restoration will be supported by the HLAN Administration backup process. (See section 3.2.6)

3.6.3 Accessibility and Availability

The system needs to be accessible during normal and off-normal hours. Off-hour accessibility will be coordinated with HLAN Administration.

3.6.4 Reliability and Recovery

The reliability of the system is important during normal interaction. A failure to restart or to recover data during a system failure is important, but not critical. Lost data entry for the session in which the failure occurred is acceptable.

The system should have an activity log to track system access and use. Error messaging functions and system intervention functions should be available to assist the system administrator in making on-line fixes.

3.6.5 Conversion

Conversion of the data into the MEL Phase I system tables will be performed by CMI&CE personnel. A conversion program to enhance this process may be cost effective.

3.6.6 Testing and Acceptance Criteria

Document section references are provided with each criteria. The Acceptance Criteria is as follows:

1) Product shall demonstrate user-friendliness with on-line help functions. (2.3) (3.1 b4) (3.3.1) (3.6.7)
2) Schedule: Phase I system is desired by end of FY 95
3) Code shall be "commented" to support future code changes. (3.1 b3)
4) Product shall demonstrate multi-user and multi-tasking functionality within reasonable response times. (3.1 b5) (3.2.5) (3.4)
5) Product shall demonstrate flexible query and report functions. (3.1 b6) (3.2.3) (3.2.4)
6) Product shall be HLAN compatible. (3.1 b7) (3.3.4)
7) Product shall demonstrate ability to assign access controls. (3.1 b8) (3.1 b9) (3.2.1)
8) Product shall demonstrate ability to track and monitor changes electronically. It shall demonstrate the ability to support the "Change Control Process" defined in Appendix B. (3.1 b8) (3.2.1) (Appendix B)
9) Product shall demonstrate system error messaging that assists the system administrator in determining the proper corrective action to take while the system is on-line. (3.1 b9) (3.6.4)
10) In concert with Item 9, the product shall demonstrate system intervention functions that enables the system administrator to initiate corrective actions while the system is on-line. (3.1 b9) (3.6.4)
12) Product shall demonstrate the ability to enter and update multiple tables via one screen. (3.2.2)
13) Product shall demonstrate popup windows for data standardization. (3.2.2) (3.3.1)
14) Product shall demonstrate the ability for performing backups via menu option. (3.2.6)
15) Product installation shall automatically assess a new user's computer environment and setup the appropriate access function. (3.3.4)
16) Product shall demonstrate the ability to track system access and use. (3.1 b9) (3.6.4)
17) Product shall demonstrate the ability to fix system error messages while on-line. (3.1 b9) (3.6.4)
18) Product shall demonstrate an automatic kickout function for user idle periods. (3.2.1)
19) Successful Test Plans shall be performed and accepted. (3.5.1)
20) Documentation for a Quality Affecting system shall be written and approved as a part of the deliverable. (3.5.1)
21) One-on-one training sessions with system administrator and initial users shall be performed. (3.6.7)

3.6.7 Training

One-on-one training sessions will be provided to the system administrator and the initial user group. After the initial training session(s), training will be provided on a case by case basis. An ON-LINE Help Function should be provided to reduce the need for training.

3.6.8 Security and Privacy

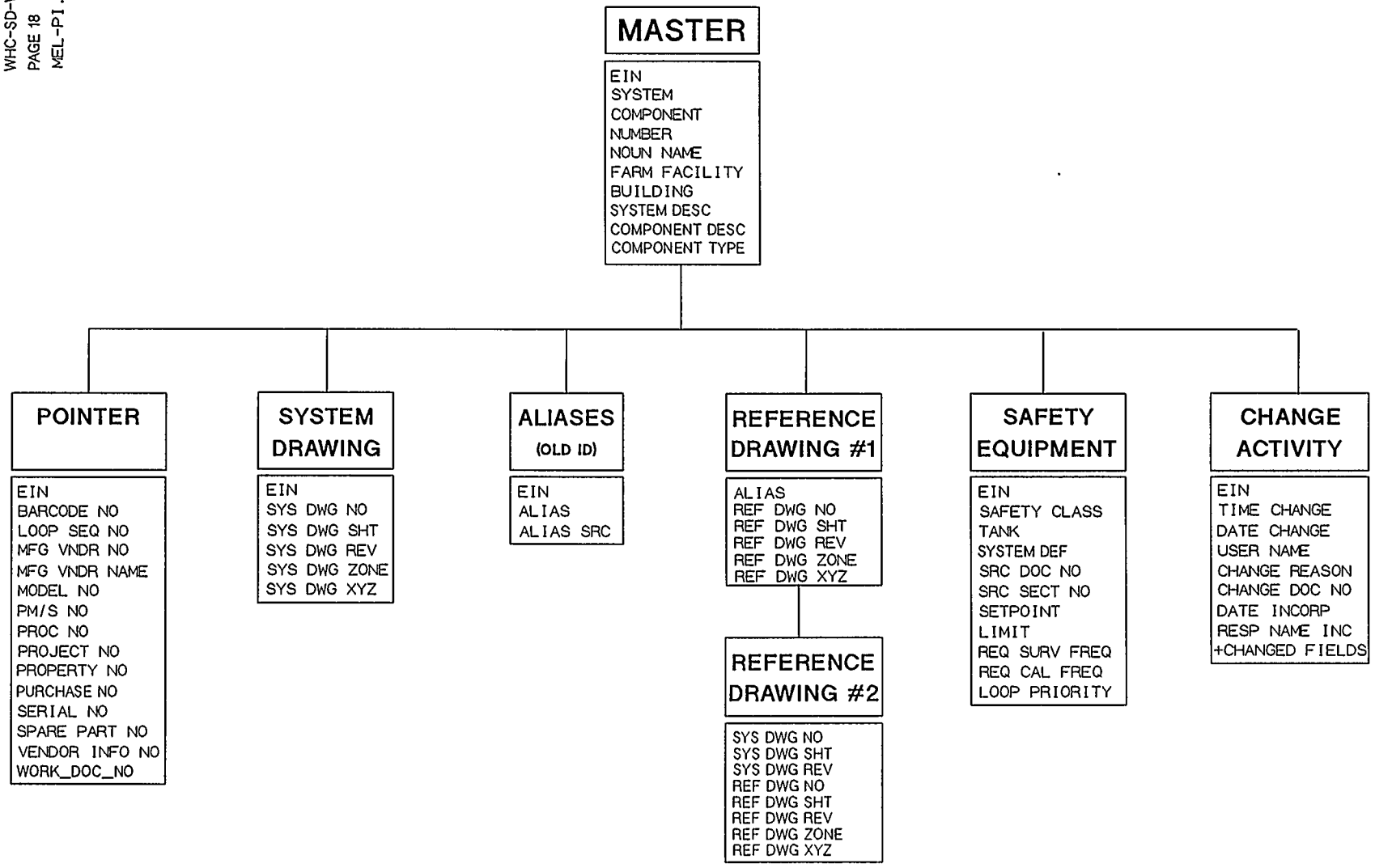
Refer to section 3.2.1.

4.0 REFERENCES

DOE 4330.4b	Maintenance Management Program
DOE 1330	Computer Software Management
DOE-STD-1073-93	Guide for Operational Configuration Management Program
WHC-CM-3-10	Software Practices
WHC-CM-2-6	Data Administration Standards
WHC-CM-4-2 QR-19.0	Quality Assurance Manual Software Quality Assurance Requirements

MASTER EQUIPMENT LIST - PHASE I

TABLE DEFINITIONS



APPENDIX A - TABLE DEFINITIONS

NOTE: Bolded fields indicate key fields of the tables.

MASTER TABLE (master.db)

Field Name	Length	Type	Example	Description
***EIN**	15	AN	WSTA-WFST-103A	Equipment Identification Number
SYSTEM	4	AN	WSTA	EIN - System Designator
COMPONENT	4	AN	WFST	EIN - Component Designator
NUMBER	5	AN	103A	EIN - Unique Number Designator
NOUN_NAME	30	AN	WTS TRANS FOR LD-PIT-103	Noun Name Equipment Descriptor
FRM_FCLTY	10	AN	241-AN	Tank Farm or Facility Unique Identifier
BUILDING	10	AN	273-AN	Building Unique Identifier
SYSTEM_DESC	20	AN	Waste Storage Tank	System Full Description
COMP_DESC	20	AN	Leak Detector Element	Component Full Description
COMP_TYPE	20	AN	Ball Valve	Component Type Description

APPENDIX A - TABLE DEFINITIONS

POINTER TABLE (pointer.db)

Field Name	Length	Type	Example	Rel	Description
***EIN**	**15**	**AN**	**WSTA-WFST-103A**		**Equipment Identification Number**
BARCODE_NO	9	AN	S000120WT	1-1	Barcode Number assigned to Equipment
LOOP_SEQ_NO	7	AN	AN212-1	1-1	Loop and Sequence Number - used as the key field in CBRS (Component Based Recall System)
MFG_VNDR_NO	25	AN	37F427X484	1-M	Unique Number Manufacturer/Vendor assigns to Equipment
MFG_VNDR_NM	25	AN	Ingersoll-Rand	1-M	Manufacturer or Vendor Name
MODEL_NO	25	AN	37F427X484	1-M	Model Number Manufacturer assigns to Equipment
PM/S_NO	8	AN	9X-00003	1-M	Sequential Unique Number JCS assigns to a specific job or activity
PROC_NO	12	AN	6-TF-058-2E	1-M	Procedure Number - unique identifier for procedures
PROJECT_NO	10	AN	W-025	1-M	Project Number
PROPERTY_NO	10	AN	WC42029	1-1	Barcode Number Assigned to Equipment by Property Management/System
PURCHASE_NO	10	AN		1-M	Purchase Order Number
SERIAL_NO	25	AN	30T-714984, F992	1-M	Serial Number Manufacturer assigns to Equipment
SPR_PRT_NO	10	AN	6167-1411-xxxx	1-M	Spare Part Number - used as the key field in the Spare Parts System
VI_NO	11	AN	0022574-004	1-1	Vendor Information Number - used as the key field in the Certified Vendor Information System - Soft Reporting
WORK_DOC_NO	15	AN	9X-92-00138/I	1-M	Work Document Number = Work Package Number - unique number JCS assigns to Work Packages

APPENDIX A - TABLE DEFINITIONS

SYSTEM DRAWING TABLE (sysdwg.db)

Field Name	Length	Type	Example	Description
***EIN**	**15**	**AN**	**SAME**	**Equipment Identification Number**
SYS_DWG_NO	11	AN	H-14-XXXXXXX	System Drawing Number
SYS_DWG_SHT	3	AN	001	System Drawing Sheet Number
SYS_DWG_REV	3	AN	001, 00A	System Drawing Revision Number
SYS_DWG_ZN	2	AN	A1, A8, H1, H8	System Drawing Zone Location of "EIN"
SYS_DWG_XYZ	20	N	26.975 21.398 00.000	System Drawing XYZ Coordinate Location of "EIN"

ALIASES TABLE (alias.db)

Field Name	Length	Type	Example	Description
***EIN**	**15**	**AN**	**WSTA-WFST-103A**	**Equipment Identification Number**
ALIAS	20	AN	WFT-03C-2	OLD IDENTIFICATION NUMBERS for Components
ALIAS_SRC	20	AN	H-2-xxxxxx CBRS	Document Source that references an OLD IDENTIFICATION NUMBER

ALIAS is equivalent to OLD IDENTIFICATION NUMBER

APPENDIX A - TABLE DEFINITIONS

DRAWING REFERENCE TABLE #1 (refdwg1.db)

Field Name	Length	Type	Example	Description
ALIAS	20	AN	WFT-03C-2	Old Identification Numbers for "EIN" (Also Known As)
REF_DWG_NO	11	AN	H-2-XXXXXXX	Reference Drawing Number
REF_DWG_SHT	3	AN	001	Reference Drawing Sheet Number
REF_DWG_REV	3	AN	001, 00A	Reference Drawing Revision Number
REF_DWG_ZN	2	AN	A1, A8, H1, H8	Reference Drawing Zone Location of "EIN"
REF_DWG_XYZ	20	N	26.975 21.398 00.000	Reference Drawing XYZ Coordinate Location of "EIN"

DRAWING REFERENCE TABLE #2 (refdwg2.db)

Field Name	Length	Type	Example	Description
SYS_DWG_NO	11	AN	H-14-XXXXXXX	System Drawing Number
SYS_DWG_SHT	3	AN	001	System Drawing Sheet Number
SYS_DWG_REV	3	AN	001, 00A	System Drawing Revision Number
REF_DWG_NO	11	AN	H-2-XXXXXXX	Reference Drawing Number
REF_DWG_SHT	3	AN	001	Reference Drawing Sheet Number
REF_DWG_REV	3	AN	001, 00A	Reference Drawing Revision Number
REF_DWG_ZN	2	AN	A1, A8, H1, H8	Reference Drawing Zone Location of "EIN"
REF_DWG_XYZ	20	N	26.975 21.398 00.000	Reference Drawing XYZ Coordinate Location of "EIN"

APPENDIX A - TABLE DEFINITIONS

SAFETY EQUIPMENT LIST (sel.db)

Field Name	Length	Type	Example	Description
***EIN**	**15**	**AN**	**WSTA-WFST-103A**	**Equipment Identification Number**
SFTY_CLASS	2	AN		Safety Class assigned to Equipment
TANK	10	AN	241AN101	Official Number assigned to a Tank
SYSTEM_DEF	25	AN		System Definition
SRC_DOC_NO	25	AN	SD-WM-SAR-016	Document Number of the source document
SRC_SECT_NO	10	AN	11.6	Section Number of the source document
SETPOINT	15	AN	-0.25"	Setpoint (design)
LIMIT	10	AN	-6" , 5"	Limit (design)
SURV_FREQ	10	AN	CONTINUOUS	Surveillance Frequency
CAL_FREQ	10	AN	ANNUALLY	Calibration Frequency
LOOP_PRIOR	10	AN		Loop Priority

HISTORICAL CHANGE ACTIVITY TABLE (chg-hstry.db)

Field Name	Length	Type	Example	Description
***EIN**	**15**	**AN**	**WSTA-WFST-103A**	**Equipment Identification Number**
TIME_CHG	5	AN	00:00	Time change was made
DATE_CHG	8	D	01/01/90	Date change was made
USER_NM	30	A	LAST, FIRST I.	User Name
CHG_RSN	50	AN	Explanation	Reason why the change was made
CHG_DOC_NO	25	AN	Doc. Number	Source Document which documents/initiates the change
DATE_INC	8	D	01/01/90	Date change was reviewed and validated for final incorporation
RESP_NM_INC	25	AN	LAST, FIRST I.	Responsible Authority Name for incorporating final changes

+ the Changed Field(s) Only **Variable**

APPENDIX A - TABLE DEFINITIONS

NAMEPLATE TABLE (nameplate.db)

Field Name	Length	Type	Example	Description
***EIN**	**15**	**AN**	**WSTA-WFST-103A**	**Equipment Identification Number**
DES_RNG_PRESS				Design Range Pressure
DES_RNG_TEMP				Design Range Temperature
OPR_RNG_PRESS				Operating Range Pressure
OPR_RNG_TEMP				Operating Range Temperature
DES_INPUT_RNG				Design Input Range
DES_OUTPUT_RNG				Design Output Range
DES_SETPOINT				Design Setpoint
DES_ACCURACY				Design Accuracy
INPUT_VOLT				Input Volt
PHASES				Phases
MTR_SZ				Motor Size
FRAME_SZ				Frame Size
BRG_SEALED?				Bearing Sealed
MTR_SPD				Motor Speed
DUTY_STRT_CYCLE				Duty Start Cycle
DES_SRVC_FCTR				Design Service Factor
FULL_LOAD				Full Load
LCK_RTR_CD				Locked Rotor Code
FRNT_BRG_NO				Front Bearing Number
BACK_BRG_NO				Back Bearing Number
PWR_SPPLY_BKR				Power Supply Breaker
BKR_TRP_SET				Breaker Trip Setting
FUSE_SZ				Fuse Size
MFG_OVRLD_SZ				Manufacture Overload Size

APPENDIX A - TABLE DEFINITIONS

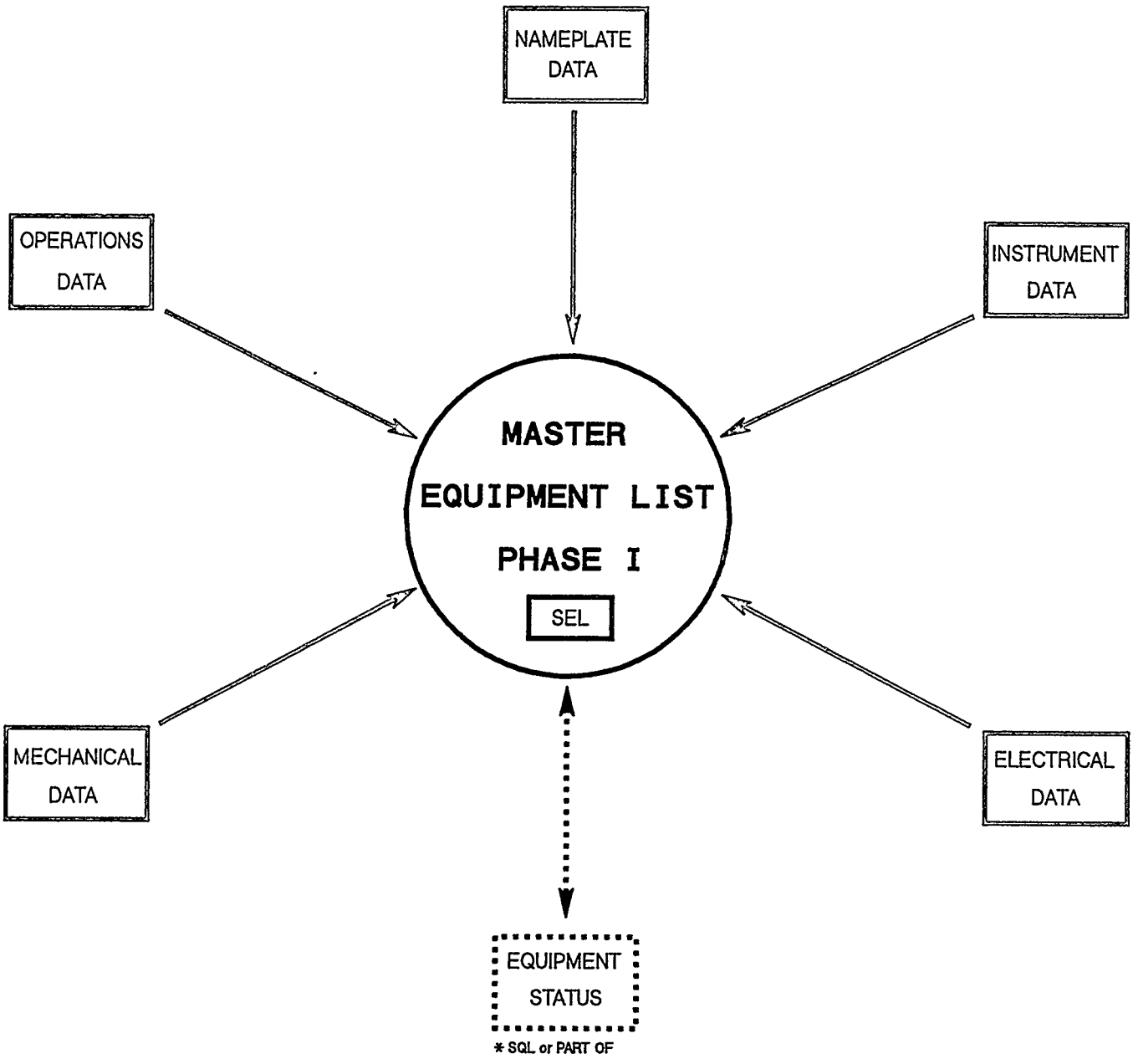
ADMINISTRATION TABLE (admin.db)

Technical Field Name	Length	Type	Example	Description
USER_NM	30	AN	LAST, FIRST I.	USER NAME
USER_PSWD	8	AN		USER PASSWORD
AUTH_LVL	20	AN		AUTHORITY LEVEL

APPENDIX B - CHANGE CONTROL PROCESS

Change Control Process Instructions will reside within Phase I system to prompt the user. On screen display instructions will include statement "Include with ECN Package to incorporate changes" and "Include MEL System Administrator on ECN Distribution".

1) Change Control Option
2) User selects Option
3) Query PopUp Window to assist user in defining record set to be changed.
4) Initiate Query
5) Query Result displayed on Screen
6) Prompt "Is this the Record Set you wish to Change?"
7) Edit Mode
8) Authorized User is allowed to make any changes
9) Prompt "Are these the changes you wish to Make?"
10) Prompt "Are You Sure?"
11) Prompt for ECN value "These Changes will be incorporated by ECN #?" (mandatory field)
12) Prompt for a brief description of the REASON for the change (mandatory field)
13) Copies affected fields to "Change Control Table" for administrative review:
    a) Key Field (Old Key Field Value and New Key Field Value)
    b) Changed fields only
    c) ECN # (or document # that causes the change)
    d) Brief description of the REASON for the change
    d) USER NAME
    e) TIME and DATE the change was made
14) System Administration Option to include
    a) Print report or view "Change Control Table" for independent review and validation of the change
    b) Prompt for "Acceptance of the Change" YES or NO.
    c) Capture DATE the change was accepted
    d) Capture USER NAME who accepted the change
    e) Initiate update of MEL utilizing "Change Control Table" records that have been accepted YES.
    f) Archive "Change Control Table" accepted records to "Historical Change Activity Table"


NAMEPLATE DATA
OPERATIONS DATA
INSTRUMENT DATA
MASTER EQUIPMENT LIST PHASE I
SEL
MECHANICAL DATA
ELECTRICAL DATA
EQUIPMENT STATUS
* SQL or PART OF

TWRS BUSINESS INTEGRATION MODEL

(11) SQL LINK
(4) OBJECT LINK
(2) DATA PROCESS FLOW
(5) N = NEW DEVELOPMENT
(9) R = REDIRECTION and/or REDEVELOPMENT

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